



EIGHTH MEETING
OF THE SADIS OPERATIONS GROUP (SADISOPSG/8)

(Bangkok, 7 to 10 July 2003)

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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INTRODUCTION

i.1 **Place and duration**

i.1.1 The eighth meeting of the SADIS Operations Group was held in the Asia and Pacific (ASIA/PAC) Regional Office, Bangkok, 7 to 10 July 2003.

i.1.2 The meeting was opened at 0900 hours by Mr. S. Ali, Deputy Regional Director, ICAO ASIA/PAC Regional Office, who underscored the importance of this particular meeting in view of the discontinuation of world area forecast system (WAFS) forecasts in the T4 format as of 1 July 2005 and the requirement for SADIS users to upgrade their receiving VSAT stations to be able to receive WAFS forecasts in the GRIB and BUFR code forms. Additional opening remarks were given by the Vice-Chairman, Mr. W. van Dijk who conveyed the gratitude of the group to the ASIA/PAC Regional Office for the excellent arrangements made to host this meeting.

i.2 **Attendance**

i.2.1 The list of participants is given in Appendix A.

i.3 **Chairman and officers of the Secretariat**

i.3.1 The Chairman of the group, Mr. T. J. Potgieter was not in a position to attend this meeting; therefore, the Vice-Chairman, Mr. W. van Dijk presided over the meeting throughout its duration.

i.3.2 Dr. O. M. Turpeinen, from ICAO Headquarters, Montreal was secretary of the meeting.

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Agenda Item 1: Organizational matters**1.1 Adoption of working arrangements**

The meeting adopted appropriate working arrangements.

1.2 Adoption of the agenda

The following agenda was adopted:

Agenda Item 1: Organizational matters

- a) Adoption of working arrangements
- b) Adoption of the agenda

Agenda Item 2: Annual statement of SADIS operational efficacy and update of the SADIS inventory**Agenda Item 3: Maintenance of the current SADIS broadcast and organization of the flow of OPMET message traffic****Agenda Item 4: Development of the SADIS****Agenda Item 5: The SADIS User Guide and amendment process****Agenda Item 6: Future work programme****Agenda Item 7: Other business**

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Agenda Item 2: Annual statement of SADIS operational efficacy and update of SADIS inventory**2.1 SADIS management report**

2.1.1 The group noted that, in accordance with SADISOPSG Conclusion 7/1, the SADIS Provider State had prepared a management report which had been placed on the ICAO SADISOPSG Web site two months prior to this meeting. A concise summary of the management report highlighting the main issues and developments that had taken place during the previous 12-month period was presented to the group. The group complemented the SADIS Provider State for providing a detailed and informative report on the Web and expressed its satisfaction with the new arrangement, i.e. that only a summary of the full report was issued as a working paper. Clarifications concerning a number of issues raised were provided by the SADIS Provider State. The individual issues will be dealt with in this report under the relevant agenda items.

2.1.2 The group realized that the move of the Met Office from Bracknell to Exeter could constitute a risk to the operations of SADIS. However, the risk assessment undertaken by the SADIS Provider State indicated that any major interruption of the SADIS service would be highly unlikely and that arranging “foolproof” back-up services for this fairly short period would be extremely costly. The group agreed that such back-up services could hardly be justified and should not therefore be established by the SADIS Provider State.

2.2 SADIS focal points

2.2.1 The group recalled that the PIRGs had endorsed the SADISOPSG/4 draft conclusion concerning the nomination by SADIS user States of SADIS operational focal points. The current list of focal points, nominated by SADIS user States and updated by the group, is given in Appendix B. The group concurred that these focal points provided useful contacts for the SADIS Provider State and the ICAO regional offices to resolve issues regarding, inter alia, missing or incorrectly formatted messages and headers.

2.2.2 The group’s attention was drawn to the fact that, over the last few years, States had seldom provided updates to the list of SADIS focal points and that the information included therein for certain States could well be outdated. In view of the importance of this list, the group agreed that ICAO should consult all the SADIS user States to make sure that the information included was current and that the e-mail addresses were included, if available. In this context, the group formulated the following conclusion:

Conclusion 8/1 — Update of the list of SADIS focal points

That, ICAO consult all the SADIS user States in order to update the list of the SADIS focal points in time for the dispatch of the SADIS efficacy questionnaire in 2004.

2.3 States'/users' views on SADIS efficacy

Results of the consultation

2.3.1 The group recalled that, in accordance with SADISOPSG Conclusion 1/4, the group had agreed to provide an annual statement of SADIS operational efficacy to the (E)SCRAG¹. At the second meeting (Conclusion 2/3 refers), the group had agreed that, in order to extend the assessment of operational efficacy of the SADIS prior to each meeting, ICAO should solicit the views of States/users on the subject. The Secretariat had circulated the questionnaire to all States under the SADIS "footprint" and to the Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar (ASECNA) and the International Air Transport Association (IATA).

2.3.2 To improve the response rate of the annual SADIS questionnaire, the questionnaire had been placed on the open ICAO Web site and sent, in addition to users and States, to the SADIS focal points, in response to the SADISOPSG Conclusion 6/2. As a result, the number of replies had slightly increased from the past year (from 58 to 60).

2.3.3 The completed questionnaires returned by States had been copied to the SADIS Operational Efficacy Assessment Team (comprising the Chairman of the SADISOPSG, the focal point of the Bulletin Management Group (BMG) and the SADIS Provider State) prior to the meeting to permit the team to analyse the responses, in accordance with SADISOPSG Decision 4/4.

2.3.4 An analysis of the completed questionnaires indicated the following (the statistics for year 2001-2002 in brackets, in accordance with SADISOPSG Conclusion 6/3):

- a) 14 (21) receivers had to be returned to Astrium for repairs;
- b) 9 (12) States considered that the administrative messages were not adequate;
- c) concerning the data:
 - 1) 55 (56) States reported good availability of T4 charts;
 - 2) 54 (53) States reported good availability of data in the GRIB code form; and
 - 3) 53 (52) States reported good availability of OPMET messages;
- d) concerning the occurrence of signal quality problems, 9 (7) cases were reported;
- e) concerning shipping problems, 7 (12) cases were reported; and
- f) 41 (41) States reported that they did not use the 24-hour help desk.

2.3.5 The group was pleased to note that the responses received indicated that the quality of data was considered good by a vast majority of users. However, the number of States with serious difficulties with their SADIS VSAT had remained stable, which was an indication that some problems continued to persist, in particular with regard to the long time required for shipping when repairs were carried out overseas. The SADIS

¹ Since the approval by the ICAO Council of the mandatory recovery of costs for the SADIS, the SADIS Cost Recovery Administrative Group comprises members representing all regions served by the SADIS and has the acronym "SCRAG".

Provider State indicated that some of the problems singled out by States would be overcome as soon as the second-generation SADIS programme was introduced (Agenda Item 4 refers). With regard to the current situation, the group concurred that it was important that local technicians be trained to identify faults and change cards to avoid the operational problem generated by the lack of receivers. The group welcomed in this regard the efforts made by ASECNA to use local technicians or technicians from the ASECNA headquarters, which had resulted in increased operational efficacy, i.e. there was no need to send any equipment to the United Kingdom for repair during 2002/2003. Furthermore, the kind offer by ASECNA to provide expertise in the maintenance of SADIS and training of operational personnel was acknowledged by the group. While recognizing the substantial efforts by ASECNA, the SADIS Provider State pointed out that caution should be exercised in this regard: the warranty with Astrium would not be valid if the VSAT had been opened by local, unauthorized personnel.

Administrative messages

2.3.6 With regard to the availability of administrative messages, the group recalled that the SADISOPSG/7 meeting had called for the Provider State to prepare information concerning administrative messages available on the SADIS broadcast and on the SADIS Provider State's Web site, and for ICAO to circulate this information to all SADIS users and focal points, also seeking their views on the optimum means of transmission of, and on the issues to be covered by, the administrative messages (Conclusion 7/3 refers). The information provided by the SADIS Provider State had since been sent to ICAO Regional Offices for onward transmission to SADIS users. The group reviewed the comments received and agreed that, in the light of these comments, there was no need to make any fundamental changes to the current practice. The SADIS Provider State indicated that they would carefully analyse the replies received and take the detailed suggestions into account, as appropriate. In this regard, the group formulated the following decision:

Decision 8/2 — Administrative messages

That there is no need to make any fundamental changes to, the means of the transmission of, and the subjects to be covered by, administrative messages.

Format of the questionnaire

2.3.7 The group recalled that the questionnaire on SADIS efficacy had been developed by the Secretariat in consultation with the Chairman of the SADISOPSG and the SADIS Provider State and last revised at SADISOPSG/4 (Decision 4/3 refers). The group made its customary review of the format/content of the questionnaire. Since the review of the returned questionnaire had not indicated any misunderstanding of the questions posed, the group agreed that the format should, in principle, continue to be used for future consultations with the States concerned. The group, however, concurred that the future questionnaire should also include the assessment of the SIGWX forecasts in the BUFR code form which were now being disseminated on the SADIS on an operational basis and that the format should be amended accordingly. Following its review of the questionnaire, the group formulated the following decision:

Decision 8/3 — SADIS efficacy questionnaire

That the questionnaire provided in Appendix C to this report be used in future consultations with States/users on the operational efficacy of the SADIS broadcast.

Annual statement

2.3.8 The group, including IATA, agreed that the SADIS broadcast had continued to meet the operational requirements during the period under review and formulated the following conclusion:

**Conclusion 8/4 — Annual statement of operational efficacy of SADIS
2002/2003**

That,

- a) during the period 2002/2003 the SADIS had continued to meet the operational requirements; and
- b) the Chairman of the SADISOPSG inform the Chairman of the SCRAG accordingly.

2.4 SADIS inventory

2.4.1 The latest inventory which formed the basis for SADIS cost recovery purposes had been developed by the SADISOPSG/7 and used by SCRAG at its third meeting held at Bracknell, 5 to 6 November 2002. The group reviewed and made some minor amendments to the inventory to ensure that SADIS continued to meet the approved operational requirements. Following completion of its review, the group formulated the following conclusion:

Conclusion 8/5 — SADIS Inventory 2003/2004

That the Chairman of the SADISOPSG forward the updated SADIS inventory given in Appendix D to this report to the Chairman of SCRAG.

2.5 SADIS implementation

2.5.1 The group noted that the number of States and users had remained almost unchanged during 2002/2003 with eighty-six (eighty-eight in 2001/2002) Contracting States now operating a total of 127 (129 in 2001/2002) SADIS VSAT receivers. A further twelve (thirteen in 2001/2002) Contracting States had received authorized access, some of which were in the process of installing SADIS VSAT receivers. It was concluded that the mandatory cost recovery had not markedly influenced the number of SADIS users and that the potential growth had in fact been slowed down by temporary cessation in the supply of new receivers and the fact that SADIS could now be considered as a mature system.

2.5.2 The latest situation in respect of VSAT installations and authorized access is provided at Appendix E.

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**Agenda Item 3: Maintenance of the current SADIS
broadcast and organization of the flow of
OPMET message traffic**

3.1 OPMET information

METAR, SPECI and TAF

3.1.1 The group recalled that the current requirements for METAR, SPECI and TAF to be broadcast on the SADIS were given in Annex 1 to the SADIS User Guide (SUG). The group was aware of the fact that at the SADISOPSG/7 Meeting, IATA had proposed substantial amendments to Annex 1 and that the proposal had in principle been endorsed by the group (Conclusion 7/6 refers). Subsequently, all the States concerned had been consulted seeking their concurrence of the inclusion of a number of aerodromes which included some “non-AOP” aerodromes (i.e. aerodromes not included in the aerodrome operational planning (AOP) tables of the regional air navigation plans), with the understanding that States did not have any obligation of providing OPMET data for the non-international aerodromes. All the changes which were agreeable to States concerned had been incorporated in Annex 1.

3.1.2 It was noted that hitherto Annex 1 did not include OPMET data from all the AOP aerodromes. The group recalled that IATA had indicated that the airlines wished to have access to OPMET data from all international aerodromes. The group agreed in principle that Annex 1 should be amended as shown at Appendix F, Part I to this report to include OPMET data from all the AOP aerodromes. This would simplify the annual review of Annex 1 since the group could concentrate its efforts on OPMET data from non-AOP aerodromes. It was suggested, however, that with the addition of new AOP aerodromes in Annex 1, it would take some time before all the new OPMET messages would be available at the SADIS uplink station and that the performance indices could be, at least initially, adversely affected. Therefore, the group agreed that parallel to the inclusion of all AOP aerodromes in Annex 1 to the SUG, ICAO should contact all the States concerned inviting them to make sure that all the required OPMET data were provided to the SADIS and ISCS uplink stations and emphasizing the importance of adhering to the formats specified in the templates given in ICAO Annex 3.

3.1.3 The group recalled that Annex 1 to the SUG had been updated a few times a year to take account of the changes in the location indicators and the names of aerodromes, in parallel with updates to the ICAO *Location Indicators* (Doc 7910). The group felt that any change to a location indicator was of importance to the dissemination of OPMET data on SADIS and would therefore have to continue to be incorporated in Annex 1. With regard to changes to the names of aerodromes, the group realized that introducing these changes was both time consuming and questionable since the updated names were often in contradiction with their spelling in the official AOP tables. Since Annex 1 to the SUG was used mainly for monitoring the content of the SADIS broadcast, it was agreed that the inclusion of amendments to the names of aerodromes as promulgated in updates to Doc 7910 was no longer necessary. The names would still appear in Annex 1 with a disclaimer indicating that they would be amended only as a result of formal amendments to the relevant AOP table, *not* on the basis of updates to Doc 7910. The group was pleased to learn that with this simplification, the future updates to Annex 1 could be undertaken by the ICAO Secretariat in a more timely manner. It was further noted that a similar, simplified amendment procedure would have to be applied by the EUR Bulletin Management Group (BMG) to Annex 2.

3.1.4 With regard to the format of Annex 1, it was agreed that the category of the aerodrome (i.e. the distinction between AOP and non-AOP aerodromes) should be indicated in a separate column. The current distinction based on the use of italics was not considered sufficient, since the font type was frequently lost when such data bases were processed by computer. Furthermore, the group confirmed the importance of specifying various types of OPMET data in Annex 3 since this would constitute a clear indication of an aeronautical requirements to States and would facilitate any follow-up action required in the case of missing OPMET data.

3.1.5 Requests for additional OPMET information from non-AOP aerodromes had been received by the Secretary from IATA. These amendments were reviewed by the group which endorsed them in principle. They are included at Appendix F, Part II. It was realized that the amendment to Annex 1 related to non-AOP aerodromes would be subject to the normal consultation with States. On completion of the consultation process, the corresponding MET tables in the FASID concerned would also have to be amended.

3.1.6 In this regard, the group formulated the following conclusion:

Conclusion 8/6 — Amendments to Annex 1 and Annex 2 of the SADIS User Guide

That

- a) ICAO
 - 1) amend Annex 1 to the SADIS User Guide as shown in Appendix F, Part I to this report; and
 - 2) inform the States of the new requirements reminding them of the importance of disseminating the OPMET data to the SADIS and ISCS uplink stations;
- b) based on future updates to Doc 7910,
 - 1) ICAO introduce the amendments only to location indicators, *not* to the names of the aerodromes, in the future editions of Annex 1 to the SADIS User Guide; and
 - 2) EUR BMG be invited to update only the location indicators, *not* the names of the aerodromes, in the future editions of Annex 2 to the SADIS User Guide;
- c) ICAO introduce in Annex 1 a new column indicating whether the aerodrome is listed in the AOP table of the Regional Air Navigation Plan concerned;

- d) ICAO provide the amendment proposal included in Appendix F, Part II to this report to the relevant regional offices for consultation and follow-up with the States concerned and, subsequent to the receipt of the agreement by those States (with an indication of data types available);
 - 1) amend Annex 1 to the SADIS User Guide;
 - 2) invite the SADIS Provider State to introduce the changes to the OPMET data on the SADIS broadcast; and
 - 3) align the contents of the FASID Tables MET 2A concerned to the updated Annex 1 to the SADIS User Guide.

3.1.7 It was noted that Annexes 2 and 3 to the SUG indicated the actual OPMET information that was currently broadcast on SADIS. These Annexes were produced currently monthly as part of the EUR OPMET update procedure while in the future they would be updated on a quarterly basis. Annex 2 in terms of aerodromes included in the bulletins and Annex 3, the inverse of Annex 2, in terms of bulletin headers. Annexes 2 and 3 generally contained more aerodromes than were required formally in Annex 1. This additional OPMET information may be obtained at the SADIS uplink from a variety of sources and, while it was assumed to be of assistance to users, it did not constitute a formal requirement for inclusion on SADIS if it did not appear in Annex 1. The OPMET content of Annex 1 had been expressed as a formal requirement by States and users, or, at least, not challenged and the States that were responsible for the OPMET information had agreed to provide it as required. It should be pointed out that the provision on SADIS of OPMET information additional to Annex 1 which may be included in Annexes 2 and 3, was not obligatory for the SADIS Provider State.

3.1.8 Information was provided to the group by the *ex-officio* member of the EUR BMG about the SADIS OPMET performance indices related to the availability and regularity of OPMET data. He indicated that the future indices would be base-lined in relation to the amended Annex 1 which would include all the AOP aerodromes. The group concurred that this information was highly useful and of particular relevance to all the ICAO Regions. It was agreed that, as of next year with the new base line, the *ex-officio* member of the EUR BMG would present these indices to the group for onward transmission to all the ICAO regional offices for information and action, as necessary.

3.1.9 The variability of reception of OPMET data from some aerodromes had been cause for adverse comment in the past. However, where such comments concerned aerodromes not listed as a requirement in Annex 1 to the SUG, the SADIS Provider State was not obliged to ensure that these aerodromes were available. If available they were on the broadcast — if unavailable then they were not. Non-availability of OPMET data from aerodromes listed in Annex 1 was a different matter and, if notified, would be taken up with the States by the ICAO regional office(s) concerned. The group, therefore, focussed on the requirements in Annex 1 and identified aerodromes whose OPMET data was not received reliably at the SADIS uplink (Appendix G refers). The group instructed the Secretary to provide this list to the regional offices for follow-up with the States concerned and agreed that a similar list of aerodromes with missing OPMET data would be provided by the SADIS Provider State as a part of the annual management report.

3.1.10 In this regard, the group formulated the following conclusion:

Conclusion 8/7 — Missing OPMET data

That

- a) ICAO invite the States concerned to take necessary corrective action to provide to the SADIS and ISCS uplink stations OPMET data from aerodromes given in Appendix G to this report; and
- b) the SADIS Provider State include a list of aerodromes, listed in Annex 1, whose OPMET data has not been received at the SADIS uplink station in the annual management report.

Note. — Appendix G lists aerodromes from which OPMET data is required, in accordance with Annex 1 to the SADIS User Guide, but is not currently received at the SADIS uplink station.

EUR OPMET update procedure

3.1.11 The group recalled that in SADISOPSG Conclusion 6/8, the group had expressed its agreement with the EUR OPMET update (of requirements) procedure. Furthermore, the group had felt that similar procedures should be considered for application by the other PIRGs concerned (SADISOPSG/6 draft Conclusion regarding application of EUR OPMET update procedure in the AFI, ASIA/PAC and MID Regions refers). Since the SADISOPSG/6 Meeting, ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG) had formulated Conclusion 12/25 calling for the development of a procedure similar to the EUR OPMET update procedure in the ASIA/PAC Regions. The Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG) had also considered the draft conclusion but felt that the procedure should be further reviewed by the ICAO MID Office, in coordination with the States concerned. It was expected that the update procedure would be endorsed by the forthcoming MIDANPIRG/8 Meeting to be held later this year. With regard to the AFI Region, it was expected that follow-up action had been taken by the Fourteenth Meeting of the AFI Planning and Implementation Regional Group (APIRG) Meeting, convened in June 2003. The group expressed its satisfaction that a standard OPMET update procedure would soon be used across all the regions served by SADIS.

Tropical cyclone advisories

3.1.12 With regard to tropical cyclone advisories, the group recalled that the SADIS Provider State had been invited to include tropical cyclone advisories (with the data designator FK) on the SADIS broadcast (SADISOPSG Conclusion 6/9 refers). The group was pleased to note that, in view of the substantial improvements in the availability of FK tropical cyclone advisories issued by the tropical cyclone advisory centres (TCAC), the distribution of non-aeronautical bulletins (with the data designator WT) had been discontinued as of 6 February 2003.

3.1.13 In view of the importance of tropical cyclone advisories for aviation, the group agreed that the reception of these messages should be monitored by the SADIS Provider State. A short monitoring period used for regular OPMET data would not be appropriate due to the seasonal nature of these advisories. Therefore, the group felt that the SADIS Provider State should compile simple statistics which would show the number of tropical cyclone advisory messages from each TCAC received at the SADIS uplink station. It was agreed that such annual statistics would be desirable for all non-scheduled OPMET data (e.g. volcanic ash advisories, SIGMET messages etc.). In this regard, the group formulated the following conclusion:

Conclusion 8/8 — Annual statistics of non-scheduled OPMET data received at the SADIS uplink station

That the SADIS Provider State compile annual statistics about the number of all types of non-scheduled OPMET messages received at the SADIS uplink station and present these results to the SADISOPSG as part of the annual Management Report.

AIRMET and GAMET

3.1.14 It was recalled that the group had endorsed the proposal made by the forty-third meeting of the European Air Navigation Planning Group (EANPG 43/25 refers) calling for ICAO to consider, subject to bandwidth constraints, the inclusion of AIRMET and GAMET in the dissemination of OPMET data via SADIS to satisfy the requirements of pre-flight planning and flight information service for low-level flight (SADISOPSG Conclusion 7/8 refers). The group was pleased to note that the SADIS Provider State had taken appropriate action and these messages from the EUR Region had since been included on the SADIS broadcast.

3.1.15 The member of IATA expressed interest in obtaining “AIRMET” messages issued by the United States. The number of these messages was fairly small (approximately 11 000 messages per year) and therefore, it could be expected that they could be accommodated on the SADIS broadcast with minor cost implications. It was, however, realized that these “AIRMET” messages were not issued in compliance with Annex 3 provisions and were in fact quite dissimilar to those issued in other ICAO Regions. It was pointed out that such messages could not be validated at the SADIS Gateway if they were included in the SADIS broadcast. Moreover, the group was aware of the fact that these messages were not subject to a stated requirement in Annex 3, nor in a regional air navigation plan. Furthermore, the member from the United States indicated that there were tentative plans to discontinue these messages and that the parties concerned in his State would be consulted on this matter during the next few months. The group agreed that, under these circumstances, it would be premature to consider this proposal at the current meeting. The group felt that the IATA member should first validate the requirement within his organization and, if confirmed to be a requirement, prepare a proposal as a working paper for consideration by the SADISOPSG/9 Meeting. That proposal should include a draft amendment to the SADIS inventory together with the associated estimates on its cost implications. Only then would the group be in a position to assess whether to endorse the proposal.

3.2 WAFS forecasts

3.2.1 The group recalled that the WAFS forecasts (both in T4 chart format and in the GRIB and BUFR code forms) were listed in Annex 4 to the SUG. Annex 4 had been reviewed and updated by the SADIS Provider State in the light of recent changes (e.g. the introduction of operational SIGWX forecasts in the BUFR code form). Annex 4 was reviewed by the group which endorsed the proposed changes. The group noted that it was expected all the WAFS forecasts in the chart form would be discontinued on the SADIS broadcast as of 1 July 2005.

3.2.2 The SADIS Provider State brought to the attention of the group the fact that the ISCS broadcast included GRIB bulletins with forecast height above ground level (in geopotential metres) of different standard WAFS flight levels. The group was aware of the fact that these bulletins were not currently a requirement stated in Annex 3; however, some users, including IATA, had expressed an interest in obtaining these bulletins via SADIS. The group noted that sufficient bandwidth was available and that the inclusion of these bulletins would have only a marginal operational impact, i.e. it was estimated that their inclusion would result in an approximately 15 minute increase in the duration of each model run and in a slight delay in the dissemination of OPMET messages which would become available simultaneously. However, these delays

were not considered to be operationally significant. Furthermore, the corresponding cost impact was considered to be marginal. Therefore, the group agreed that the GRIB bulletins including geopotential height field should be added to the SADIS broadcast. The SADIS Provider State indicated that these additional bulletins would become operational in about six weeks.

3.2.3 Since the forecasts of height above ground level (in geopotential metres) of different standard WAFS flight levels have been identified as a requirement by some users, the group was of the opinion that the WAFSOPSG should consider whether these forecasts should be subject to a genuine aeronautical requirement stated in Annex 3.

3.2.4 The group formulated the following conclusion:

Conclusion 8/9 — Updated Annex 4 of the SADIS User Guide

That

- a) ICAO include in the SADIS User Guide the updated Annex 4 as shown in Appendix H to this report; and

Note. — The updated Annex 4 includes the GRIB bulletins with forecast height above ground level (in geopotential metres) of different standard WAFS flight levels.

- b) the WAFSOPSG be invited to consider developing draft provisions for inclusion in Amendment 74 to Annex 3, introducing forecasts of height above ground level (in geopotential metres) of different standard WAFS flight levels.

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Agenda Item 4: Development of the SADIS

4.1 Under this agenda item, the group reviewed progress on the future developments of the SADIS, including those indicated in the strategic assessment tables. The group was aware that a need had been identified at SADISOPSG/3 for the group to keep abreast of the latest technological developments in order to be in a position to ensure that the SADIS kept pace with related practices in the commercial environment.

4.2 Migration within WAFS from T4 charts to the BUFR and GRIB code forms

4.2.1 As part of the progress to the final phase of the world area forecast system (WAFS), all the remaining regional area forecast centres (RAFCs) had been phased out during 2002, in accordance with the transition plans approved by the PIRGs concerned. This transfer had been of interest to the SADISOPSG owing to the fact that the two WAFCs had assumed responsibility for the production and dissemination of an increasing number of significant weather (SIGWX) charts in T4 facsimile format. The group was pleased to note that no such requirements had been stated since the SADISOPSG/7 Meeting. However, it was possible that a requirement for a SIGWX for the mid-levels (SWM) over the NAT Region would be stated by the NAT SPG; if that were the case, the SWM forecast would be produced by WAFS Washington and would have to be distributed to the users through the satellite broadcasts, including SADIS. In this respect, the SADISOPSG was informed that no decision had been taken by the most recent NAT SPG Meeting held in June 2003 which had referred the issue to the States in the region and international organizations for further consultation. Therefore, the group had to wait for the outcome of these consultations before it would be in a position to decide whether the NAT SWM chart (in the T4 facsimile format) should be included in the SADIS broadcast.

4.2.2 With regard to the use of the WMO BUFR code form for the transmission of WAFS SIGWX forecasts and the phasing-out of the T4 facsimile format in July 2005, the group was encouraged to note that the BUFR-coded SIGWX forecasts had become fully operational in June 2003. This development was of considerable interest to the group because of its potential for releasing substantial bandwidth which could be utilized for other purposes, as necessary. Concerning training required by States and users, the group recalled that it had formulated Conclusion 6/13 calling for training for decoding WAFS data in the BUFR and GRIB code forms and that similar conclusions had been made by all the PIRGs concerned (APANPIRG Conclusion 12/22, APIRG Conclusion 13/63, EANPG Conclusion 43/24 and MIDANPIRG Conclusion 7/32 refer). The group was pleased to note that a series of GRIB-BUFR workshops had been organized by the SADIS Provider State, in coordination with WMO and ICAO, and that all the regions served by SADIS were expected to be covered by the end of 2003, the MID Region being the last with a seminar planned to take place in Oman in December 2003. The group concurred that any additional training required would have to be organized by the SADIS users themselves, with the assistance of software vendors concerned.

4.2.3 Furthermore, it had been considered essential by the SADISOPSG/7 Meeting that all the SADIS users be informed about the need to update their software to be able to receive WAFS forecasts in the BUFR and GRIB code forms. Therefore, the ICAO Secretariat had been tasked to remind the SADIS users that the users should obtain the latest versions of the GRIB and BUFR visualisation software from the software vendors concerned (SADISOPSG Conclusion 7/13 refers). The corresponding letter had been sent to all the SADIS users in February 2003. It was noted with some concern that, in view of the complexity of the encoding/decoding software, some of the software vendors had not yet completed their development of visualisation software for the BUFR-coded SIGWX forecasts.

4.2.4 With regard to the testing of SADIS workstation software, the group recalled that at the SADISOPSG/6 Meeting it had endorsed a list of the "SADIS software functionalities for testing" and agreed that this list would be placed on the SADIS Provider State's Web site. The group noted that the original list had to be slightly amended to take account of the fact that it had proved impossible for the software packages to

be able to produce a SIGWX chart from the corresponding BUFR messages or a wind-temperature chart from the corresponding GRIB messages that would be *identical* to the equivalent T4 product. It was proposed that different presentations would have to meet Annex 3 provisions while they would differ subtly from the equivalent T4 products as far as the non-meteorological features were concerned. The group shared these views in principle but felt that the issue was rather complex and required further study by the WAFSOPSG. The group agreed nevertheless that the functionalities 2 and 3 appearing on the initial list of the “SADIS software functionalities for testing” would be slightly amended. It also concurred that a further assessment of all the software packages should be carried out by the SADIS Provider State against the refined criteria 2 and 3.

4.2.5 The group formulated the following conclusion:

Conclusion 8/10 — Refined criteria for, and assessment of, visualisation software

That

- a) the SADISOPSG approve the refined criteria 2 and 3 as given in Appendix I;
- b) the SADIS Provider State be invited to carry out a further assessment of all the software packages against the refined criteria 2 and 3; and
- c) the WAFSOPSG be invited to consider developing criteria related to the depiction of meteorological and other features on forecast in chart form derived from the BUFR and GRIB data.

4.3 Use of SADIS to carry AIS information

4.3.1 The group recalled that all four PIRGs concerned (MIDANPIRG, APANPIRG, APIRG and EANPG) had endorsed the SADISOPSG/3 draft conclusion proposing that the study of the use of SADIS to carry AIS information be discontinued pending the statement of an operational requirement by one of the PIRGs. The group agreed that the issue of AIS information would continue to be included in the SADISOPSG terms of reference but would remain dormant until such time as one of the PIRGs concerned stated a requirement for AIS information on the SADIS broadcast and indicated the type of information to be carried.

4.4 Additional supplier of the SADIS receive-only hardware

4.4.1 At the SADISOPSG/7 Meeting, the group had been informed by the SADIS Provider State about its negotiations of an additional supplier of SADIS one-way VSAT station. Good progress had been made; however, the negotiations had not yet been completed. This development had been welcome by the group since an additional supplier would break the monopoly of Astrium, which would encourage market forces, impact on the price of SADIS hardware and resolve the unsatisfactory quality of Astrium equipment, identified by a number of SADIS users.

4.4.2 The SADIS Provider State indicated that the Bradford University Remote Sensing Ltd. was about to commence business in the SADIS hardware market shortly and that the equipment was expected to be available in about two month's time. The group was pleased to note that the new receiver would be compatible with the complementary second SADIS carrier (i.e. the SADIS Second Generation prototype (SADIS 2G)). The new VSAT station would be cost-effective, since it was estimated to cost less than £ 11 000

which compared favourably with the price of the present-generation Astrium VSAT (now exceeding £ 15 000). Furthermore, the new VSAT included a remote facility for identifying and dealing with problems encountered by users.

4.5 Obsolete equipment

4.5.1 The group had recognized at the SADISOPSG/7 Meeting that, some of the older SADIS receiving stations had become, or would soon become obsolete. Since some of the components of the obsolete equipment could not be repaired, this had been a matter of concern to which States' attention should be drawn. Therefore, ICAO, based on the technical information to be received from the SADIS Provider State, had been tasked to inform SADIS users and focal points about the types of SADIS receiving stations which had become, or would soon become, obsolete (SADISOPSG Conclusion 7/15 refers). This action had been completed by a letter sent to all those concerned.

4.6 SADIS cost recovery

4.6.1 The group was aware that the ICAO Council had decided that from 1 January 2001 the recovery of the costs of the SADIS from users of the service should be mandatory. Exceptions had been made for the least developed States. Subsequently, user VSATs in States which did not wish to receive SADIS have been "switched off". In this context, the SADISOPSG/7 had been informed that, reluctantly, in accordance with the decisions made by the relevant ICAO bodies, the Provider State would make arrangements to switch off the SADIS service in July 2002 in the States whose cost shares for 2001 had remained unpaid. The group noted that this action had been completed and that the affected States had been so informed. Furthermore, the Chairman of the SADISOPSG had been instructed to inform the Chairman of the SCRAG that it would be the responsibility of the State concerned to ensure that alternative arrangements for obtaining the necessary data and products were adequate within the State concerned (SADISOPSG Conclusion 7/16 refers). The corresponding memo had been sent to the Chairman of the SCRAG in July 2002.

4.7 Maintenance and repair of SADIS receiving equipment

4.7.1 The group recalled that the SADIS Provider State had addressed the issues related to maintenance and the associated training requirements with Astrium. They had come to the conclusion that training courses would be very costly in view of the limited number of technicians who would be likely to attend these events, which would have to be organized on a commercial basis and fully funded by the participating SADIS user States. The States interested in training should approach Astrium directly, with the understanding that training would have to be organized on a commercial basis and fully funded by participating States. However, training local technicians for equipment which would in any case soon become obsolete had been considered rather meaningless.

4.8 Internet-based FTP service for back-up

4.8.1 The group was aware that the SADIS Provider State offered a fully operational SADIS internet-based FTP service to all users authorized to receive SADIS or ISCS since May 2002. The FTP service had been introduced in response to SADISOPSG Conclusion 6/16 calling for the SADIS Provider State to implement the SADIS internet-based FTP service as a back-up to the SADIS broadcast. The service was provided from a password protected Web site to States and users authorized to receive SADIS or ISCS broadcasts and no additional costs were involved. In order to extract products from the Internet, standard visualization software was required to achieve a seamless transition between the SADIS receiver and the Internet. The group noted that the commercial HTTP service, initially planned, had since been discontinued.

4.8.2 Currently, the Internet service could only be considered as a back-up since, in accordance with ICAO provisions, the WAFS data and products were to be disseminated through the ICAO Aeronautical Fixed Service (AFS) using SADIS and ISCS. It may be noted that the use of the Internet as a back-up to internationally agreed circuits had been endorsed by the MET Divisional Meeting (2002) (Recommendation 4/5 refers).

4.8.3 The group was pleased to note that the Internet based FTP service had been provided as an operational backup service to an increasing number of users during the past year.

4.9 Bulk purchasing of workstation software

4.9.1 The SADIS Provider State presented a proposal to the group related to the bulk purchasing of future workstation software, i.e. a collective tender process to procure new SADIS software. It was emphasized that there would be multiple software upgrades in the future years that tended to be very costly and in some cases prohibitive to SADIS users, particularly for those in developing States. The group realized that the costs related to these software upgrades could be recovered from aviation users; however, some States did not have the cost recovery mechanism in place and would therefore face major difficulties in performing these upgrades. Furthermore, a few software vendors were offering substantial reductions (up to 50 per cent) if bulk purchasing was applied. Moreover, additional savings could be realized through reduced maintenance costs. It was pointed out that the purpose of the proposal to use bulk purchasing was not to limit healthy competition; it was firmly believed that the bulk purchasing would not lead to a market with a single vendor in a monopoly position. Some concerns were nevertheless expressed concerning the lack of competition which could result from bulk purchasing, if applied in a large scale.

4.9.2 The group agreed that bulk purchasing merited further study and agreed that it should be addressed by a new SADISOPSG task team called the SADISOPSG Workstation Software Team. The team should seek solutions as how to facilitate software and service upgrades in those SADIS user States which are included in the United Nations list of least developed countries (LDC). In that context, possibilities of using the SADIS cost recovery mechanism and the WMO Voluntary Cooperation Programme should be investigated. However, a cautious approach was called for by the group, in particular as far as the use of the SADIS cost recovery was concerned; there was a real risk that contributions of the SADIS user States could increase markedly if the software upgrades were included in the SADIS inventory. Furthermore, concerns raised by a number of members concerning the reduced competition which may result from bulk purchasing would be taken into account by the team.

4.9.3 The group formulated the following conclusion:

Conclusion 8/11 — Involvement of States in collective software tender process

That:

- a) the ICAO regional offices consult the SADIS users within their area to ascertain whether they wish to be involved in a collective tender process to procure new SADIS software, with the option for on-going maintenance, support and software upgrades, and as necessary, on-site installation and training; and
- b) a SADISOPSG Workstation Software Team that will liaise with all of the regions and refine the procurement process be established, with the membership as shown in the terms of reference of the group at Appendix K.

4.10 Complementary second SADIS carrier (SADIS Second Generation prototype (SADIS 2G))

4.10.1 The group recalled that SADISOPSG/7 Meeting had endorsed (Conclusion 7/14 refers) the proposal by the SADIS Provider State that a complementary second SADIS carrier (called hereafter “SADIS second-generation broadcast (SADIS 2G)”) would be uplinked from Whitehill using a combination of a new-type modulation (i.e. Quad Phase Shift Key (QPSK)) and Viterbi or Turbo coding. This could reduce the future cost of leased bandwidth and standardize that receiving hardware. The group had also supported the proposal that a short trial with two test sites towards the end of 2002 would take place, to confirm the effectiveness of SADIS 2G broadcast in a real-time environment using operational data.

4.10.2 A report on the high-level SADIS 2G trials was presented to the group by the SADIS Provider State. The group was pleased to note that the initial results were promising and that the data loss experienced initially in the X25 data tests during busy periods had since been eliminated. However, the trials had not yet been completed and three outstanding issues would have to be addressed:

- a) Radyne DMD 2401L Modem: problems with this L-band receiver;
- b) IP data tests: configuration to be completed and tests to be carried out; and
- c) reception test in a remote location: pending on the resolution of a) and b) above.

4.10.3 With regard to the remote location, the group recalled that it had initially recommended at its seventh meeting that these tests should take place in Ukraine; however, in view of the serious time constraints stemming from the Met Office move to Exeter, the group felt that these tests should now be organized in a location which would require a minimum effort from the SADIS Provider State. In this regard, the group noted that Switzerland could participate in these tests with little pre-warning and preparation; therefore the group agreed that the remote site for these tests should be in Switzerland, rather than in Ukraine and that the trials should be completed as soon as possible. The group further agreed that all the outstanding issues listed above should be resolved and that after their resolution, the SADISOPSG Technical Developments Team would be tasked to declare the trial complete. It was noted that the choice of service protocol would be made at a later stage, though the group had a preference for WMO IP sockets protocol which the SADIS Provider State agreed to study for overall acceptability.

4.10.4 With regard to the implementation, the group agreed, in principle, that the SADIS 2G should be implemented in view of its undeniable benefits, i.e. an improvement in satellite performance; a future reduction in required bandwidth and cost; a wider market for the supply of cost-effective receiving equipment. It was realized that the SADIS 2G implementation would mean that all the VSAT stations would have to be changed over the next few years; therefore, it was essential that endorsement for this proposal be sought from all the PIRGs concerned. Furthermore, there would be cost implications at the system level, mainly related to the establishment of an operational infrastructure. Therefore, the SCRAG would have to be involved as of this year. As soon as the SADIS 2G has been endorsed by the PIRGs concerned, it would be implemented. The SADIS Provider State estimated that the system could be operational by the SADISOPSG/9 Meeting, though stated that this depended on the available time left between the PIRGs and the SADISOPSG/9 Meetings.

4.10.5 In this context, the meeting formulated the following draft conclusion:

Conclusion 8/12 — Completion of the SADIS second-generation broadcast (SADIS 2G) trials

That

- a) the SADIS Provider State be invited to complete the SADIS 2G trial resolving the outstanding issues, including the reception tests to be undertaken in Switzerland;
- b) the SADISOPSG Technical Developments Team be tasked to declare the trials complete following resolution of the outstanding issues; and
- c) on completion of the endorsement by the APANPIRG, APIRG, EANPG and MIDANPIRG,
 - 1) the Chairman of the SADISOPSG inform the SADIS Cost Recovery Administrative Group (SCRAG) accordingly; and
 - 2) the SADIS Provider State be invited to implement the SADIS 2G as specified above.

(Draft) Conclusion .../... — Implementation of the SADIS second-generation system (SADIS 2G)

That, subject to the successful completion of the trials, the APANPIRG, APIRG, EANPG and MIDANPIRG be invited to endorse the implementation of the SADIS second-generation broadcast (SADIS 2G).

4.11 Enhanced two-way capability

Background

4.11.1 The group recalled that the proposal concerning the enhanced two-way capability had been developed by the SADISOPSG/1 Meeting and resulted in European Air Navigation Planning Group (EANPG) Conclusion 38/19 – SADIS Two-way VSATs, which had been duly noted by ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG), AFI Planning and Implementation Regional Group (APIRG) and Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG). By SADISOPSG Decision 2/10, the group had created a SADISOPSG Two-way Operational Clearance Team. It was noted that the SADIS Cost Recovery Administrative Group (SCRAG) at its second meeting (November 2001) had taken account of the enhancement to the SADIS two-way capability in the SADIS inventory.

Status of the current two-way programme

4.11.2 The Rapporteur of the SADIS Two-way Operational Clearance Team provided a report concerning, in particular, the latest situation regarding the installation of a SADIS two-way VSAT in Dakar and the operation of the two-way VSATs in Dakar, Pretoria and Zurich. The group recalled that, on the completion of the analysis of the two-way trials which took place in May 2002, the SADIS Two-way Clearance Team had been authorized to declare the two-way system operational (SADISOPSG Conclusion 7/10 refers). However, the Team considered that it was not in a position to make such a declaration due to the continuing problem of erroneous extra space characters being inserted into a significant number of the OPMET bulletins originating from Dakar and Zurich. It was noted that the extra spaces rendered the bulletins unacceptable to the Met Office message switch (“FROST”). There had been attempts by the SADIS Provider State and ASECNA to identify at what point the extra spaces were inserted but the issue remained outstanding at the time of the meeting. The group agreed to the point of view expressed by the SADISOPSG Two-way Clearance Team that the resolution of this issue was required before the two-way system could be declared fully operational. ASECNA had also raised additional issues (i.e. necessary technical support; necessary VSAT spare parts; and provision of a transmission operational unit to monitor the outflow of OPMET data) which were, however, considered to be outside the scope of the tasks to be undertaken by the SADISOPSG Two-way Clearance Team. The group concurred that these were largely commercial issues and should be dealt with directly between ASECNA and the manufacturer.

4.11.3 Furthermore, ICAO had been invited to make every effort with the Kenyan authorities in view of the implementation of the fifth VSAT station in Nairobi by December 2002 (SADISOPSG Conclusion 7/11 refers). In spite of numerous attempts by the ICAO Regional office concerned, the implementation of the VSAT station in Nairobi had proved to be impossible. Therefore, in accordance with the instructions of the SADISOPSG/7 Meeting, the station would soon be shipped to Dakar for use as spare parts for the two-way station already installed.

Discontinuation of the current two-way programme

4.11.4 With regard to the future action regarding the SADIS two-way programme, the SADIS Provider State suggested that the existing two-way programme was unable to meet the requirements of increasing the quantity of OPMET data available for SADIS uplink, or improving its timeliness of availability in a cost-effective manner. It was felt that one of the reasons for this failure was the long lead-time between the project conception and its operational implementation; during this period technologies had evolved, and more cost-effective solutions were available. The SADIS Provider State was of the view that the proprietary nature of the current two-way programme was no longer a viable way forward. The group largely shared the points of view expressed and agreed that the first-generation two-way programme should be discontinued. The substantial efforts made by ASECNA to establish an operational two-way station in Dakar were acknowledged

by the group, and it regretted that ASECNA had not had the opportunity to take part in a truly operational phase of the two-way programme. However, in view of the disappointing results obtained, the group was of the opinion that it would not be justified to allocate any additional resources to this programme. The group formulated the following decision and draft conclusion for consideration by the PIRGs concerned:

Decision 8/13 — Disbandment of the SADISOPSG Operational Two-way Clearance Team

That, the SADISOPSG Operational Two-way Clearance Team be disbanded.

(Draft) Conclusion .../... — Discontinuation of the current first-generation SADIS two-way VSAT programme

That, the APANPIRG, APIRG, EANPG and MIDANPIRG be invited to note the plan to discontinue the current SADIS two-way VSAT programme as of 1 January 2004.

Note. — On completion of the endorsement of all the PIRGs concerned, the Chairman of the SADISOPSG will inform the SADIS Cost Recovery Administrative Group (SCRAG) accordingly.

Second generation two-way programme (SADIS 2G+)

4.11.5 The Rapporteur of the SADISOPSG Technical Developments Team presented a proposal to organize a trial of an Intelsat approved two-way VSAT system to be carried out in 2003/2004 based on considerations of a range of two-way technologies highlighted by an independent satellite expert, who had been contracted by the SADIS Provider State to provide the group with a short consultancy service. The proposed trial was envisaged to involve two locations: the United Kingdom (Whitehill and Exeter) and Bangkok (subject to an agreement of the Thai Civil Aviation Authority/National Meteorological Service). The SADISOPSG Technical Developments Team had expressed the opinion that the trial should be implemented as soon as practicable.

4.11.6 The group congratulated the rapporteur for providing an excellent report on the subject that would have a profound impact on the future of SADIS. IATA indicated that it was in favour of the proposals made in the report.

4.11.7 With regard to the two-way programme in general, the group considered that the SADIS second-generation two-way programme (hereafter referred to as “SADIS 2G+”) would be a step forward in resolving the long-standing issue of missing OPMET data. The group realized that the SADIS 2G+ would be quite different from the current two-way programme, the discontinuation of which the group had earlier endorsed. It was emphasized in this regard that the first-generation two-way programme had failed mainly for economic reasons and a lack of implementation — the programme had been developed from scratch — while the SADIS 2G+ would rely on well-proven, off-the-shelf technology which would render maintenance easy and fairly inexpensive. The SADIS 2G+ was considered to be attractive based on the following arguments:

- a) *price of the VSAT (at current market prices less than £ 10 000).* It would be only marginally more expensive than the second-generation one-way system (the difference being in the order of £ 2 to 3 000) and in any case lower than a present-generation one-

way VSAT. This would make its widespread deployment amongst the vast majority of SADIS users a realistic option;

- b) *compatible with BUFR-coded OPMET data.* The SADIS 2G+ could accommodate METAR, SPECI and TAF encoded in the BUFR code form. This could therefore be an alternative for those States and regions which could not upgrade the AFTN in time for the migration to the use of the BUFR code form; and
- c) *compatible with BUFR-coded SWL and SWM forecasts.* States could use the SADIS 2G+ to transmit their non-WAFS, BUFR coded regional or national SWL and SWM forecasts to the SADIS uplink station for further dissemination to other States and users.

4.11.8 In view of its far-reaching consequences, the group felt that a number of issues should be addressed before any decision could be taken concerning the SADIS 2G+. This was considered particularly important in view of the failure of the first-generation two-way programme. It was considered that the fundamental prerequisite was the existence of a genuine operational requirement. Furthermore, an assessment of the impact of SADIS 2G+ on the OPMET traffic and operating costs should be undertaken. It was also emphasized that the difference between this proposal and the first-generation two-way programme should be highlighted to the PIRGs which would eventually have to endorse the SADIS 2G+; otherwise they could be tempted to turn it down in view of the meagre results obtained from the first-generation two-way configuration. It was also argued that the encoding of OPMET data in the BUFR code form was still years away and that, when implemented, the proposed solution could well rely on obsolete technology. Moreover, the future role of the Internet in the OPMET exchange could change the situation; therefore, the results from the work to be undertaken by the CNS study group on the Internet during the years 2003/2004 should be closely monitored. Finally, it was pointed out that the SADIS 2G+ could have a profound influence on the regional telecommunications networks and that therefore, adverse reactions could be expected from the CNS community which could see the SADIS 2G+ as a threat to the development of the ATN. Therefore, the group agreed that a clear operational concept for the SADIS 2G+ would have to be developed as a first step. The concept should include a plan with the proposed scale of implementation of the SADIS 2G+. The development of the concept should be undertaken by an *ad-hoc* drafting group consisting of the SADISOPSG Members from the United Kingdom, WMO and IATA. The users' input through IATA was considered particularly important. Furthermore, the operational concept should address issues customarily included in business plans, i.e. costs, benefits (for airlines and other users) and related risks. The group would work principally by correspondence and a meeting would be convened in London only if necessary. It was expected that the results of the work of the drafting group would be presented for consideration by the SADISOPSG/9 Meeting. Pending on the endorsement by the SADISOPSG/9 Meeting, the implementation plan of the SADIS 2G+ would be circulated to the SCRAG (November 2004) and to all the PIRGs concerned (second half of 2004) for final endorsement.

4.11.9 With regard to the need for the proposed trial, which would involve, if undertaken as suggested, some substantial financial resources (£ 100 000). It was therefore suggested that to reduce costs, the trial should be carried out in the United Kingdom. Other views were expressed questioning the need for a trial since the SADIS 2G+ would be based on proven technology used routinely by a number of industries. The group agreed that no separate trial was necessary and that a pre-operational phase would take place some time in 2005 provided that the concept was first endorsed by all the parties concerned.

4.11.10 With regard to two-way programmes under the footprint of the ISCS, the group was informed that, there was no two-way function currently used for OPMET data (WMO basic meteorological data was collected from the CAR Region using a two-way system). However, there were tentative plans to use a two-way system over the Pacific Region for collecting OPMET data and ATC messages, which would eliminate the need for maintaining expensive and unreliable AFTN circuits. There were also tentative plans to expand the use of the two-system to the SAM Region.

4.11.11 The group concluded that the SADIS 2G+ was a potentially viable solution for the future and formulated the following decision:

Decision 8/14 — Development of the operational concept for the second-generation SADIS two-way system based on approved VSAT technology

That the *ad hoc* working group consisting of the members from the United Kingdom, IATA and WMO, with Mr. N. Gait, the advisor from the United Kingdom, as a rapporteur, develop a proposal for the operational concept for the second-generation SADIS two-way system in time for the SADISOPSG/9 Meeting.

4.12 SADIS gateway function

4.12.1 The group was aware that the SADIS gateway function had originally been proposed by the EANPG Conclusion 38/33 which had invited the United Kingdom to implement the gateway function. The conclusion had been subsequently noted by the other PIRGs concerned and approved by the ICAO Council. At SADISOPSG/1, a SADISOPSG Gateway Working Group had been formed which had made its first report to SADISOPSG/2. Based on this report, the SADISOPSG had developed a set of high-level technical requirements. The group recalled that it had reviewed the SADIS gateway high-level technical requirements and made substantial amendments to the SADIS Gateway Operations Handbook at its seventh meeting.

4.12.2 The Rapporteur of the SADISOPSG Gateway Working Group reported to the group on the latest progress in the implementation of the SADIS gateway function. The group was pleased to note that the SADIS Gateway Working Group had essentially completed its work with respect to the production of a specification for the SADIS gateway function and that the SADIS Gateway Operations Handbook had been amended as instructed by the SADISOPSG/7 Meeting.

4.12.3 The group reviewed the final version of the handbook. The only issues of substance raised were :

- a) a concern related to the potential safety implications to amend a date/time value in a report if it was inconsistent with other reports in the bulletin and the current date/time. The group agreed nevertheless to maintain the procedure; however, the SADIS Provider State would investigate these rogue METARs and assess whether the proposed procedure was appropriate; and
- b) real-time monitoring on a sub-set of reports and bulletins defined in the SADIS Gateway Operations Handbook to be carried out by the SADIS Provider State. It was noted that this subset would be published on the SADIS Provider State's Web site. A few additional editorials were identified, in particular related to the acronyms which would be rectified by the SADIS Provider State using the PANS-ABC (Doc 8400). Otherwise, the group expressed its satisfaction with the handbook.

4.12.4 The group was pleased to note that the system was now fully operational, apart from the real-time monitoring, and that a corresponding administrative message had been issued to all SADIS users. Real-time monitoring would be implemented by the 31 July 2003. The group acknowledged the important work undertaken by the SADIS Gateway Working Group and agreed that the SADIS Gateway Operations Handbook should be placed on the SADISOPSG and SADIS Provider State's Web sites. Since the scope of future work

in this area would change, the group agreed that the working group should be converted into a SADISOPSG task team. The group formulated the following conclusion and decision:

Conclusion 8/15 — SADIS Gateway Operations Handbook

That, ICAO place the SADIS Gateway Operations Handbook on the SADISOPSG Web site.

Decision 8/16 — Converting the SADIS Gateway Working Group into a SADISOPSG Gateway Development Team

That, the SADIS Gateway Working Group be converted into the SADISOPSG Gateway Development Team with revised terms of reference, in view of the change in the nature of the future tasks.

Note. — The terms of reference of all the task teams are at Appendix K to this report.

4.13 Strategic assessment of SADIS requirements

4.13.1 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. On completion of this review, the group 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. The group noted that the format of the tables would change in view of the discontinuation of T4 SIGWX charts and the inclusion of tropical cyclone and volcanic ash advisories and AIRMET and GAMET forecasts on the SADIS broadcast. The group formulated the following conclusion:

Conclusion 8/17 — SADIS Strategic Assessment Tables

That the completed SADIS strategic assessment tables provided in Appendix J to this report form the basis for the future development of the SADIS to serve the regions concerned.

Note 1.— Any firm planning done by the SADISOPSG in respect of future improvements to the SADIS will be based on recommendations made by the relevant PIRGs, and approved, as necessary, by the ANC and Council.

Note 2.— Completed SADIS strategic assessment tables are provided by ICAO regional offices to the group following consideration at appropriate meetings of the PIRGs concerned.

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Agenda Item 5: The SADIS User Guide and amendment process

5.1 Under this agenda item the group reviewed the current status of the SADIS User Guide and the amendment process. It was recalled that the first edition of the SADIS User Guide (SUG) had been distributed to States in May 1997 and, since that time, two amendments had been issued dated 11 June 1997 and 5 February 1998, respectively. The group recalled that the second edition of the SUG had been published in December 2001 in English and that all the language versions had been distributed to States in 2002. It was noted that the SUG was also available on the ICAO Web site at: <http://www.icao.int/icao/en/anb/met>.

5.2 The SADIS User Guide

Amendments

5.2.1 The group realized that the textual parts of the SUG (i.e. Chapters 1 to 7 and Appendices A to M) had not been subject to any major revisions since 1997. Therefore, they would become increasingly outdated in the light of substantial changes which were expected to take place, inter alia, as a result of Amendment 73 to Annex 3. Annexes 1 to 4 to the SUG underwent regular revisions and could therefore be considered to be up-to-date. Under these circumstances, the group agreed that the SADIS Provider State should prepare, in coordination with the ICAO Secretariat, an amendment to the textual part of the SUG (using the read-line/strike-out markings) to be ready for review by the SADISOPSG/9 Meeting in 2004. The amendment to the SUG should incorporate all the changes that had taken place including those related to Amendment 73 to Annex 3 (expected to be adopted by the ICAO Council in March 2004). It would also include a chapter related to the SADIS 2G which would be completed once the system was operational.

5.2.2 The group concurred that, to expedite the publication of the SUG, the new edition should be placed on the Web site as soon as it has been completed. The group felt that the production of hard copies, which would take more time, should not slow down the distribution of this important information on the ICAO Web site. In this regard, the group formulated the following conclusion:

Conclusion 8/18 — Update of the SADIS User Guide (Chapters 1 to 7 and Appendices A to M)

That,

- a) the SADIS Provider State, in coordination with ICAO, prepare a draft amendment to update Chapters 1 to 7 and Appendices A to M to the SADIS User Guide;
- b) the SADISOPSG/9 Meeting review the updated draft guide in 2004; and
- c) on the completion of the revision, the Secretary place the third edition on the ICAO Web site before the hard copies of all the language versions become available.

5.3 **Amendment process**

5.3.1 The group noted that no changes had been made to the amendment process agreed by SADISOPSG/3, Decision 3/15.

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Agenda Item 6: Future work programme

6.1 Under this agenda item the group reviewed its work programme. In addition to the work programme, the following elements were updated:

- a) executive summaries for each task;
- b) terms of reference of the group; and
- c) terms of reference of the following working groups/teams:
 - 1) SADISOPSG Gateway Development Team;
 - 2) SADISOPSG Strategic Assessment Team;
 - 3) SADISOPSG Technical Developments Team; and
 - 4) SADISOPSG Workstation Software Team (a new team).

6.1.1 The terms of reference for the SADISOPSG Two-way Operational Clearance Team were deleted since the team was disbanded by the group. With regard to the SADISOPSG Gateway Development Team, its composition was revised to introduce new members from the unrepresented AFI and ASIA/PAC Regions by adding ASECNA and China to the membership. It was suggested that the member from China should liaise with the OPMET data centres in the ASIA/PAC Regions, as necessary. Furthermore, the EUR Region membership was revised: Austria and Switzerland were no longer SADISOPSG members and were therefore replaced by Germany.

6.1.2 The updated work programme is at Appendix K.

6.2 Composition of the SADISOPSG

6.2.1 The group recalled that it had formulated a draft conclusion calling for the PIRGs concerned to review the composition of the SADISOPSG in view of the introduction of the mandatory cost recovery scheme. All of the PIRGs had considered the draft conclusion and had reviewed their nominated members of the SADISOPSG. The Council had subsequently noted the conclusions.

Ex-officio membership of the BMG in the SADISOPSG

6.2.2 The group was aware that the Meteorology Communications Group (MOTNEG) of the European Air Navigation Planning Group (EANPG) had been dissolved and that responsibilities had been transferred to the Meteorology Group (METG) of the EANPG. The group recalled that, in view of the close relationship of the work carried out by the MOTNEG and SADISOPSG in the field of OPMET message exchange, the ICAO Regional Director, Paris had been invited to make arrangements for the chairman of the MOTNEG to be invited to attend the SADISOPSG Meetings as an *ex-officio* member (SADISOPSG Conclusion 1/3 refers). Due to the fact that the tasks related to the OPMET message exchange had been taken over by the EUR Bulletin Management Group (BMG), all the SADISOPSG Meetings since the dissolution of the MOTNEG had been attended by the Chairman of the BMG or his alternate. To formalize this practice, the group formulated the following conclusion:

**Conclusion 8/19 — *Ex-officio* membership of the Chairman of the EUR
BMG in the SADISOPSG**

That, in order to foster effective coordination between the SADISOPSG and the EUR BMG to support planning for the dissemination of OPMET messages on SADIS, arrangements should be made by the ICAO Regional Director, Paris for the Chairman of the EUR BMG to be invited to attend the SADISOPSG meetings as an *ex-officio* member of the SADISOPSG.

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Agenda Item 7: Other business**7.1 SADISOPSG/9 Meeting**

7.1.1 The group reconfirmed that it continued to be necessary to schedule annual meetings of the group for the foreseeable future. Regarding the venue for the next meeting in 2004, it was noted that the group had so far managed to hold a meeting in all ICAO regions served by SADIS and that the last three meetings had been held in Paris (2001), Cairo (2002) and Bangkok (2003). To encourage the participation of the SADISOPSG members from the AFI Region, the group was of the view that the SADISOPSG/9 Meeting should be held in Africa and that the Secretary should investigate the possibility of holding the next meeting in the ICAO Western and Central African Office, Dakar. It was proposed that the SADISOPSG/9 Meeting should be held during the first two weeks of June 2004.

7.2 Future form of correspondence

7.2.1 To align the nomenclature used by the ICAO Secretariat in correspondence in general, the group agreed that the future correspondence would be in the form of *memoranda* and the *circulars* used so far would be discontinued. This change was considered a step forward since the memorandum format included a line which indicated the subject of the correspondence, which was not the case with circulars.

7.3 Change of the SADISOPSG Web site

7.3.1 The group noted that the address of the ICAO SADISOPSG Web site would be changed during the week 14 to 18 July 2003 from “SADISOP” to “SADISOPSG” to harmonize it with the other operations group.

7.4 Update of the SADISOPSG address list

7.4.1 The group was informed that the SADISOPSG address list currently included an exceptionally large number of advisors. Furthermore, there were a number of entries without e-mail addresses. The group noted that the Secretariat had a plan to update the list of advisors based on advice received from the members. If no reply were received to the Secretary’s memorandum in this regard, the advisors currently included would be eliminated from the distribution list.

7.5 Election of the Vice Chairman

7.5.1 In view of the imminent retirement of the Vice-Chairman, Mr. W. van Dijk, the group had to elect a new Vice-Chairman. The group felt that Ukraine would be a good choice; however, due to the absence of the Ukrainian delegation from this meeting, the formal election would have to be postponed to the SADISOPSG/9 Meeting. In the mean time, it would be investigated whether the current Vice Chairman could be acting until the SCRAG Meeting and attend that meeting, as necessary.

7.6 Acknowledgements

7.6.1 The group took the opportunity to express its appreciation to the SADIS Provider State, and Mr. R. Orrell in particular, for the vital support both during the year and at the SADISOPSG Meeting. The value of the wide range of outstanding documentation provided to the group by Richard was acknowledged by the group as an important factor for the success of this meeting.

7.6.2 Special tribute was also paid to Mr. Wil van Dijk, the Vice-Chairman of the group who had chaired this meeting very successfully and who was about to retire. His contribution to the SADIS programme

from the very beginning was highly valued by the whole SADIS community. The group wished him well for his well deserved retirement.
