



SIXTH MEETING

OF THE SADIS OPERATIONS GROUP (SADISOPSG/6)

(Paris, 28 May to 1 June 2001)

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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INTRODUCTION

i.1 **Place and duration**

i.1.1 The sixth meeting of the SADIS Operations Group was held in the European and North Atlantic (EUR/NAT) Regional Office, Paris.

i.1.2 The meeting was opened at 1000 hours by the Chairman, Mr. T. J. Potgieter. He introduced the new Secretary of the group, Dr. Olli M. Turpeinen (TO/MET) who had taken over the responsibilities of Secretary from Mr. T. Fox (C/MET).

i.2 **Attendance**

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

i.3 **Officers of the Secretariat**

i.3.1 The Chairman of the group, Mr. T. J. Potgieter 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 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: 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**States'/users' views on SADIS operational efficacy**

2.1 The group commenced its discussions by reviewing the questionnaire developed by the Secretariat in consultation with the Chairman of the SADISOPSG and the SADIS provider State and revised at SADISOPSG/3 (Decision 3/2 refers) and SADISOPSG/4 (Decision 4/3 refers). It noted that the completed questionnaires returned by States had been copied to the SADIS Operational Efficacy Assessment Team comprising the Chairman of the SADISOPSG, the Chairman of the MOTNEG and the SADIS provider State prior to the meeting to permit the team to analyse the responses, in accordance with SADISOPSG/4, Decision 4/4.

2.2 With regard to the format of the questionnaire, its review did not indicate any misunderstanding of the questions posed. In view of this, the group agreed that this format would continue to be used for future consultations with States concerned. Following its review of the questionnaire, the group formulated the following decision:

Decision 6/1 — SADIS efficacy questionnaire

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

2.3 The group next turned its attention to the detailed analysis of the replies received. It was noted with regret that the number of replies (50) had not markedly increased from the previous year. It was suggested that this problem could be overcome if the questionnaire were placed on the ICAO SADISOPSG web-site and also sent to the SADIS focal points in States by ICAO. In the regard, the group formulated the following conclusion:

Conclusion 6/2 — Improvement of response rate of the annual SADIS questionnaire

That, in order to improve the response rate of the annual SADIS questionnaire, ICAO place the questionnaire on its SADISOPSG web-site and send the questionnaire, in addition to States and users, also to SADIS focal points.

2.4 With regard to the format of the analysis used by the SADIS provider State the group considered that the presentation corresponded to the needs of the group and that no major changes were required. However, the group was of the opinion that the evolution of the system would be better captured if the performance statistics for the previous year were included in the detailed analysis. In this context, the group formulated the following conclusion:

Conclusion 6/3 — Presentation of the analysis of the SADIS efficacy questionnaire

That, in order to facilitate the assessment of the SADIS efficacy, the SADIS provider State include in the analysis of the questionnaire, in addition to the statistics of the current year, those related to the previous year.

2.5 Concerning the detailed results of the analysis, the group was encouraged by the fact that the number of reports of serious difficulties with SADIS very small aperture terminal (VSAT) had decreased over the past year. Nevertheless, residual problems still persisted: some receivers had to be returned to Astrium for

repairs and difficulties had been reported regarding administrative messages. The group was made aware of the fact that similar problems (e.g. lack of training and spare parts) had been identified by WMO when evaluating their Voluntary Cooperation Programme (VCP) projects related to VSAT stations. Once again, it was emphasized that local technicians should be trained to identify faults and change cards taking into account the long time required for the shipping of receivers and the operational problem generated by the lack of receivers during the repair process. With regard to administrative messages, the group felt that their availability would be improved if they were also placed on the UK MET Office SADIS web-site. Particularly those related to unplanned outages should be placed thereon. The group further agreed that e-mails via the Internet would not be suitable for this purpose. In this regard, the group formulated the following conclusion:

Conclusion 6/4 — Availability of administrative messages on the MET Office SADIS web-site

That, administrative messages, including those related to unplanned outages be placed on the UK MET Office SADIS web-site by the SADIS provider State.

2.6 Following its review of the responses from States/users the group concluded that the SADIS broadcast had continued to meet the operational requirements during the period under review. This was confirmed by the International Air Transport Association (IATA). In this regard, the group formulated the following conclusion:

Conclusion 6/5 — Annual statement of operational efficacy of SADIS 2000/2001

That,

- a) during the period 2000/2001 the SADIS had continued to meet the operational requirements; and
- b) the Chairman of the SADISOPSG inform the Chairman of the SADIS Cost Recovery Administrative Group (SCRAG) accordingly.

SADIS inventory

2.7 The group recalled that the latest inventory which formed the basis for SADIS cost recovery purposes had been developed by the SADISOPSG/5 and used by (E)SCRAG at its eighth meeting held in Paris, 13 to 14 December 2000. The group reviewed the latest inventory which took account of decommissioned items of equipment and the enhanced two-way requirements to ensure that it met the approved operational requirements. Following completion of its review, the group formulated the following conclusion:

Conclusion 6/6 — SADIS Inventory 2001/2002

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

SADIS Implementation

2.8 The group noted that the system continued to expand in 2000/2001 albeit at a slower rate, as would be expected, with ninety-two Contracting States and one other location now operating a total of 131 SADIS VSAT receivers. A further eleven Contracting States had received authorized access, some of which were in the process of installing SADIS VSAT receivers. The group noted with appreciation that the

enhancement of the existing SADIS two-way VSATs in London, Pretoria and Zurich and at the communications hub had been completed. Meanwhile it regretted the withdrawal of Australia, and France (for year 2001) from receiving SADIS. The latest situation, updated by the group, in respect of VSAT installations and authorized access is provided at **Appendix D**.

SADIS Management Report

2.9 The group reviewed the relevant parts of the SADIS Management Report issued by the SADIS provider State. The group sought clarifications on a number of details and appreciated the information provided. The group noted with some concern that the prices for receiving stations had increased substantially more than the inflation rate. It was, however, explained by the SADIS provider State that this increase could be considered justified since it could be attributed to the improved quality and enhanced reliability.

2.10 Concerning the format of representation, it was concluded that in the present format, the management report was easily accessible and understood and that therefore, no major changes to the presentation would be required for the next year. However, the group felt that to facilitate the evaluation of the system, it would be useful if the SADIS provider State could include, where appropriate, statistics for the previous year. In this regard, the group formulated the following conclusion:

Conclusion 6/7 — Format of the SADIS Management Report

That, the SADIS provider State include data related to past two years in the SADIS Management Report, as necessary, to facilitate the assessment of the evolution of SADIS.

2.11 Finally, the group was of the opinion that to avoid any potential misunderstandings, it would be important to use the official term for SADIS (i.e. satellite distribution system for information relating to air navigation) all through the Management Report.

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AGENDA ITEM 3: MAINTENANCE OF THE CURRENT SADIS BROADCAST AND ORGANIZATION OF THE FLOW OF OPMET MESSAGE TRAFFIC

3.1 Under this agenda item the group reviewed the content of the broadcast, the flow of message traffic and monitoring of the OPMET data available at the SADIS uplink station for uplink on SADIS.

Content of the SADIS broadcast

3.2 The group begun its discussions with the monitoring of OPMET data on the broadcast. It was noted that the current requirement for OPMET information to be broadcast on the SADIS was given in Annex 1 to the SADIS User Guide. The group was informed that no formal requests for additional OPMET information had been received by the Secretary from other groups for consideration by the SADISOPSG since SADISOPSG/5, hence it was assumed that no additions of substance were required and the current Annex 1 was satisfactory. It was appreciated that the nomenclature in Annexes 1, 2 and 3 had now been aligned to that used in AOP tables.

3.3 It was noted that Annexes 2 and 3 to the SADIS User Guide indicated the actual OPMET information that was currently broadcast on SADIS: Annex 3 in terms of bulletin headers and Annex 2, the inverse of Annex 3, in terms of aerodromes included in the bulletins. 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 (or not commented). Thus provision on SADIS of OPMET information additional to Annex 1 which may be included in Annexes 2 and 3, was not obligatory on the SADIS provider State. In this regard, IATA pointed out that they had additional operational requirements for information from aerodromes which were not currently included in the AOP tables and would propose a formal amendment to the relevant ICAO Air Navigation Plans at the upcoming EUR Meteorological Group (METG) Meeting (September 2001) before proposing any changes to Annex 1.

3.4 The group recalled that in SADISOPSG Conclusion 4/8, the group supported the EUR OPMET update (of requirements) procedure, in principle pending clarification of the terminology used in respect of “requirements” and the mechanism through which the SADIS broadcast content was to be changed by the SADISOPSG under its terms of reference. The OPMET update procedure had now been amended by the Meteorological Communications Group (MOTNEG). The group reviewed the flow diagram and found it satisfactory. In this context, the following conclusion was formulated by the group:

Conclusion 6/8 — EUR OPMET update procedure

That the SADISOPSG is in agreement with the EUR OPMET update/procedure, as amended by MOTNEG/6 and given in **Appendix E** to this report.

3.5 It was suggested that these procedures had proved to be efficient and that similar procedure should therefore be considered for application by the PIRGs concerned in ICAO Regions served by SADIS. In this regard, the group formulated the following draft conclusion for consideration by APANPIRG, APIRG and MIDANPIRG:

Draft Conclusion xx/xx — Application of EUR OPMET update procedure in the AFI, ASIA/PAC and MID Regions

That the APANPIRG, APIRG and MIDANPIRG give consideration to introducing the EUR OPMET update procedure in their respective regions.

3.6 The group noted that the variability of reception of OPMET data from some aerodromes had been cause for adverse comment, as mentioned in the analysis of the SADIS efficacy questionnaire. However, where such comments concerned aerodromes not listed as a requirement in Annex 1 to the SADIS User Guide, 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. It was emphasized that the 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, would continue to focus on the requirements in Annex 1 and identify aerodromes whose OPMET data was not received reliably at the SADIS uplink.

3.7 With regard to the amendment procedure to Annex 1, it was emphasized that Annex 1 was the responsibility of the SADISOPSG (in accordance with its terms of reference) and that therefore any amendment of substance would have to be approved by this group. Normally, amendment proposals would be presented at the annual SADISOPSG meetings. Under exceptional circumstances (e.g. urgent new requirements), amendment proposals could be submitted by States or users to the Secretary between the meetings; however, these proposals would have to be sent by correspondence to the members of the SADISOPSG for consultation and approval before Annex 1 could be amended. It was realized that there were also amendments of a purely editorial nature; these were quite frequent and they had been so far introduced by the ICAO Secretariat in close coordination with the SADIS provider State without involving the group. The group agreed that this practice was acceptable for efficiency and should therefore be continued.

3.8 It was agreed that Annex 1 amendments of substance would be forwarded to the BMG by the BMG focal point who regularly attended SADISOPSG meetings. This would be done on an annual basis shortly after each SADISOPSG meeting. All editorial amendments made during the year would be forwarded to the BMG focal point by the SADIS provider State.

3.9 With regard to the implementation of requirements stated in Annex 1, the BMG would continue to report to SADISOPSG on an annual basis. Progress on implementation of the requirements would be indicated using *inter alia*, performance indices and information on particular problems encountered in implementing the changes would be highlighted.

3.10 The group was informed by the Chairman of the MOTNEG on the SADIS-related activities of the MOTNEG. In this context, it was recalled that additional OPMET bulletins from the Russian Federation had been sent from Moscow to the Vienna OPMET data bank since 1200Z on 3 May 2000. With regard to the reliability of reception and content of the bulletins, and how far these went to satisfy the OPMET data requirements, it was noted that these issues would be addressed at the upcoming BMG Meeting.

3.11 With regard to NOTAMs for volcanic ash and ASHTAMs, the group was aware of the problem to address these messages to some of the volcanic ash advisory centres (VAACs). To deal with this problem, recourse had been made to the use of a dummy WMO abbreviated-header as has been used successfully for decades in the AMBEX Scheme in the AFI Region and the ROBEX Scheme in the ASIA/PAC Regions. The group noted that a series of tests had been carried out successfully in some ICAO Regions and that a second series of tests involving a wider selection of international NOTAM Offices (NOFs) sending NOTAMs for volcanic ash and ASHTAMs to all VAACs and to the London switching centre for uplink on SADIS would be conducted during summer 2001. It was noted that the tests were ready to proceed, but the go ahead from the VAAC Tokyo was awaited pending their making some changes to the software in their switching centre; the results of these tests would be communicated to the group by the Secretary. It was pointed out that when planning for these tests, it should not be forgotten that not all the end users, in particular those relying on old software, would be in a position to display these NOTAMs unless their systems were upgraded.

3.12 It was recalled that, in response to the EANPG Conclusion 41/9 — Dissemination of tropical cyclone advisories (FK) via AFS in the EUR Region, the group had agreed that tropical cyclone advisories would be disseminated by SADIS. However, the present bulletins did not include any tropical cyclone advisories (i.e. messages with the data designator FK). It did include tropical cyclone advisories intended for general use (i.e. messages with the data designator WT); however, these bulletins were not an aviation requirement and should only be transmitted if their inclusion would neither interfere with aviation products, nor increase the costs. In this regard, the group formulated the following conclusion:

Conclusion 6/9 — Inclusion of tropical cyclone advisories (with the data designator FK) in SADIS

That the SADIS provider State include on the SADIS broadcast, as a matter of urgency, the tropical cyclone advisories issued by the tropical cyclone advisory centres (TCAC), with the data designator FK.

3.13 With regard to T4 facsimile charts, the group noted that the number of world area forecast system (WAFS) charts issued in T4 format listed in Annex 4 to the SADIS User Guide, Second Edition had continued to increase as new areas of coverage were stated as requirements, and as SIGWX responsibility was transferred from regional area forecast centres (RAFCs) to WAFCs in accordance with phased transfer plans developed by the planning and implementation regional groups (PIRGs). The former included areas J and K over the Antarctic and area L to cover the new polar air routes. It was emphasized that a confirmation was required from the PIRGs regarding the medium-level significant weather (SIGWX) requirements in their respective regions. It was pointed out that care had to be exercised in this regard because extensive medium-level SIGWX requirements could translate into substantial demands on available bandwidth.

SADIS operational focal points

3.14 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 so far is given in **Appendix F**. The group agreed that these focal points would provide useful contacts for the SADIS provider State and the ICAO regional offices who had occasion to contact States regarding missing or incorrectly formatted messages and headers etc.

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AGENDA ITEM 4: DEVELOPMENT OF THE SADIS

4.1 Under this agenda item, the group heard reports from the Rapporteurs of its Two-way Operational Clearance Team, Gateway Working Group and Strategic Assessment Team.

Enhanced two-way capability

4.2 The group recalled that the proposal for enhanced two-way capability was developed at SADISOPSG/1 and resulted in European Air Navigation Planning Group (EANPG), Conclusion 38/19 – SADIS Two-way VSATs, which was 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). At SADISOPSG/2, by Decision 2/10 the group created a SADISOPSG Two-way Operational Clearance Team. This approach was modelled on the procedures used successfully to deal with the original operational clearance of the SADIS.

4.3 It was recalled that the (E)SCRAG at its fourth meeting (Norrköping, 2 to 3 September 1997) had taken account of the enhancement to the SADIS two-way capability in the SADIS inventory.

4.4 The group reviewed the report of the Two-way Operational Clearance Team. It noted the results from the interim trials with “old” type two-way VSATs. The results showed that the timeliness of the reception of OPMET data had improved. The group noted that the initial tests for the two-way SADIS VSATs had been conducted in a developed technical environment and had not revealed any functional problems. The demonstrated improvements in timeliness of OPMET data transmission were not surprising when compared to the existing store-and-forward transmissions. The group agreed that tests in a less developed technical environment could be more conclusive both with regard to timeliness and quantity of OPMET data received from the regions concerned. It noted in this context that the success of data collection would critically depend on: a) the national collection of OPMET data in the States concerned; and b) the regional OPMET data collection by the State operating the two-way uplink station. The hope was expressed that substantial improvements of timeliness and quantity of OPMET data could be demonstrated which would fully justify the expenses required for the SADIS two-way capability.

4.5 It was noted that the three original SADIS two-way VSAT sites (London, Pretoria and Zurich) involved in the interim trials had since been upgraded to “enhanced” capability and these stations would be prepared for the final trials called for by SADISOPSG Conclusion 5/13. The SADIS provider State indicated that the final trials should be completed by April 2002 at the latest; the Met Office would move to Exeter shortly thereafter and the London two-way station would not be available any more. The reinstallation of that station in Exeter was not considered desirable due to the substantial costs involved. As the station could not be made fully operational in another location, it was agreed that, at the completion of the two-way trials, the SADIS provider State could dismantle the station and offer the components as spare parts for existing two-way stations in Pretoria and Zurich. In this regard, the group formulated the following conclusion:

Conclusion 6/10 — Final two-way VSAT trials

That, in view of the move of the UK MET Office to Exeter in 2002, the SADIS provider State

- a) arrange for the final two-way trials called for by Conclusion 5/13 to be completed by April 2002 at the latest, with the participation of all the operational two-way VSATs with “enhanced” capability installed by this time; and
- b) on conclusion of these two-way trials, offer the components of its two-way station as

spare parts for the existing two-way stations in Pretoria and Zurich.

4.6 It was recalled that, in accordance with Conclusion 5/13, it had been intended that Dakar would take part in these trials. This led to a discussion regarding the status of the fourth two-way VSAT station to be installed in Dakar, in accordance with the SADISOPSG Conclusion 5/12. The group noted with some concern that in spite of considerable efforts by the SADIS provider State, little progress had been made and that the initial quotation provided by Astrium in July 2000 would no longer be valid. ASECNA indicated that a new quotation would be sought as a matter of urgency and that every effort would be made to start the installation before December 2001 for completion in time for the final two-way trials planned for early 2002. The group welcomed this information, as the participation of Dakar would indeed be essential to enhance the value of the results to be extracted from these trials.

4.7 With regard to the fifth available SADIS two-way VSAT station, the group was informed that APIRG, in response to the SADISOPSG Conclusion 5/14 — Allocation of fifth SADIS enhanced two-way VSAT, calling for the regional COM/MET planning sub-groups concerned to consider a site for the installation of the fifth enhanced SADIS two-way VSAT for use operationally, had proposed Nairobi as a location. In this regard, it had been thought initially that this station would be installed only following the SADIS enhanced two-way VSAT trials. However, in view of the delays of these final trials, the group was of the opinion that the fifth VSAT station, if implemented by that time, could also take part in these trials. However, there was the more fundamental question about the suitability of the site proposed. It was noted that any State hosting the two-way station should be in a position to satisfy the same criteria placed on the Moscow site by the EANPG in its Conclusion 41/22 and to confirm the availability of financing for the installation and operation of the two-way VSAT. The VSAT and receiver would be at no cost to the State concerned; however, installation and operation of the two-way VSAT would have to be paid for by the State. Kenya proposed that the fifth two-way VSAT should be sited in Nairobi and provided the required supporting information. The group felt that the offer would have to be studied in detail. Therefore, an *ad-hoc* working group was formed with the participation of the Vice Chairman (Rapporteur), Kenya, IATA, the SADIS provider State and the Chairman of the MOTNEG group, to examine Kenya's proposal. The *ad-hoc* working group concluded that if the fifth two-way VSAT station were installed in Nairobi,

- a) the dissemination of OPMET data from Kenya would be improved with regard to timeliness compared to the use of the existing AFTN links;
- b) no improvement would be foreseen for the WAFS data;
- c) the dissemination of OPMET data to the EUR Region would be significantly improved regarding both its availability and timeliness; and
- d) no technical difficulties would be foreseen concerning the installation of a two-way VSAT.

The SADISOPSG Member from Kenya assured the group that the installation would be carried out with the understanding that his administration would be responsible for the transportation and installation costs.

4.8 Under these circumstances, the group formulated the following conclusion:

Conclusion 6/11 — Installation of the fifth two-way VSAT in Nairobi

That, considering information provided by Kenya, the fifth two-way VSAT station be installed in Nairobi with the understanding that Kenya would be responsible for the costs resulting from the transportation and installation of the two-way VSAT station in Nairobi.

SADIS Gateway Function

4.9 The group was aware that the SADIS Gateway Function had been originally proposed by the EANPG (Conclusion 38/33), noted by the other PIRGs concerned and approved by the ICAO Council. The group recalled that the main purpose of the Gateway function was to monitor the OPMET data and to improve its quality using an automatic correction scheme.

4.10 The group recalled that 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 (draft) high-level Technical Requirements. The ICAO Council had subsequently approved EANPG Conclusion 38/33 and the United Kingdom had been invited to implement the gateway function. The Rapporteur of the SADISOPSG Gateway Working Group reported to the group on progress in the letting of contract and implementation of the SADIS gateway function. It was indicated that the provisional dates for acceptance testing and operational service were January 2002 and October 2002, respectively.

4.11 It was noted that the SADIS gateway high-level technical requirements had been developed in coordination with the MOTNEG and METG, with the SADISOPSG authorized by the EANPG to approve the final version. This action had been completed by Conclusion 4/16 of SADISOPSG/4. The latest version had been used as the basis for the procurement specifications by the SADIS provider State, in accordance with SADISOPSG/3, Conclusion 3/12.

4.12 The group was briefed by the Rapporteur of the SADISOPSG Gateway Working Group on the recent progress of work in the group and on the development of the SADIS Gateway Operations Handbook. An overview of the draft version of the handbook was presented to the group. It was noted that the handbook would not be completed until the contract for the gateway function had been awarded and that, as soon as completed, the final version would be presented to the group for information. The group expressed satisfaction with the guide; however, it was pointed out that the automatic correction scheme would have to be revised as far as the criteria used for checking the validity period of a TAF was concerned.

Strategic assessment of SADIS requirements

4.13 The Rapporteur of the SADISOPSG Strategic Assessment Team provided a report on the activities of the team. The report consisted of a series of tables updated on an annual bases. The group reviewed the content and format of tables as presented by the Rapporteur. 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. In this regard, the group formulated the following conclusion:

Conclusion 6/12 — SADIS Strategic Assessment Tables

That the completed SADIS strategic assessment tables provided in **Appendix G** 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.

Phased transfer of RAFC responsibilities to the WAFCs

4.14 The group was aware that, as part of the progress to the final phase of the WAFS, plans had been developed by the PIRGs for the phased transfer of RAFC responsibilities to the WAFCs. These plans continued to be of interest to the SADISOPSG owing to the fact that the two WAFCs were gradually assuming responsibility for the production of an increasing number of SIGWX charts in T4 facsimile format. The current situation was described in the management report and the United Kingdom member briefed the group on the latest and near-term future situation in this regard. The latest procedural development had been that the APANPIRG/11 had recommended transfer of the WAFS responsibilities of RAFCs Melbourne, New Delhi, Tokyo and Wellington to the two WAFCs from 1 March 2001.

4.15 A related matter raised concerned the use of the WMO BUFR and GRIB code forms for the transmission of WAFS SIGWX and wind/temperature forecasts in numerical format. The group was aware that the GRIB code form was already in use since a number of years, while transmissions by the BUFR code form were only being tested. The tests carried out so far indicated that no reports of system failures or truncated messages had occurred. The near-term development would involve the coding of icing included in the mid-level SIGWX forecasts in the BUFR code form for ICAO regions where a formal requirement for this data had already been stated by the PIRG concerned. The group felt that from the SADIS point of view this development was of considerable interest because of its potential for releasing substantial bandwidth which could be utilized for other purposes, as necessary. The group also noted that regional GRIB and BUFR task forces were being formed under the MET sub-groups and questionnaires were being sent out to States to assess their readiness to decode the GRIB and BUFR data and possible training requirements. The importance of training in this area was emphasized. In this context, the group formulated the following draft conclusion:

Conclusion 6/13 — Training for decoding WAFS data in the GRIB and BUFR code forms

That, the SADIS provider State be invited to consider organizing, in coordination with WMO, ASECNA and ICAO, seminars on decoding WAFS data disseminated in the GRIB and BUFR code forms.

4.16 With regard to the use of GRIB and BUFR, the group was reminded that WMO was developing plans for migration from all traditional alpha-numeric meteorological code forms to table-driven code forms (BUFR, CREX). In this context, the aeronautical meteorological codes (e.g. METAR/SPECI and TAF) would also have to be considered. The group was pleased to learn that a new task on this very issue had been recently introduced to the Technical Work Programme of ICAO by the ANC and that the issue would be progressed by ICAO, in close coordination with the relevant WMO bodies. It was expected that the matter would also be considered by the planned MET Divisional Meeting (2002).

Use of SADIS to carry AIS information

4.17 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 aeronautical information service (AIS) information be discontinued pending the statement of an operational requirement by one of the PIRGs. The study 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 SADIS and indicated the type of information to be carried. The group noted that the need for such a requirement remained under discussion in the APIRG.

Technical developments

4.18 The group recalled 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. The Rapporteur of the SADISOPSG Technical Developments Team had indicated that at the present time there were no such developments and that the issue would be addressed next at the SADISOPSG/7 Meeting.

4.19 The SADIS provider State informed the group that a number of system improvements had been made during the last 12 months and the group was pleased to note that these significant improvements were starting to be reflected in improved performance figures.

SADIS cost recovery

4.20 The group noted 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 States identified by the United Nations as “least developed countries (LDC)”, and proposals for the exact mechanism for the cost recovery had been developed by a study group and approved by the Council. It was hoped that it would not prove necessary for a user VSAT to be “switched off” by the master station due to lack of payment under the SADIS agreement. However, the group noted that, in case the procedure had to be invoked in the future, from the technical point of view, it would be feasible to switch off any VSAT since each station had a unique serial number.

4.21 A specific related issue was raised, i.e. how to avoid that a VSAT station dealing with the development of software for SADIS and located in a State which has decided not to participate in the cost recovery would not be switched off. This situation could occur in France which, as indicated under agenda item 2, would cease receiving SADIS for at least in year 2001. The group felt that the French companies which received SADIS had significantly contributed to the overall development of the SADIS system and that therefore, it would be detrimental if the stations which were exclusively used for development work would have to be switched off. The group was of the opinion that this issue should be brought to the attention of the Chairman of the SCRAG by the Chairman of the SADISOPSG. In this context, the group formulated the following conclusion:

Conclusion 6/14 — VSAT stations involved in the technical development of SADIS

That the Chairman of the SADISOPSG bring to the attention of the Chairman of the SCRAG the importance of the continued operation of VSAT stations used exclusively for the technical development of SADIS, no matter whether the State participates in the cost recovery scheme.

Testing of SADIS workstation software

4.22 The group recalled that at the SADISOPSG/5 Meeting a conclusion had been formulated calling for the SADIS provider State to study the possibility, and estimated cost of, developing a facility for offering software testing to manufactures of SADIS workstations (Conclusion 5/4 refers). A list of SADIS software functionalities which had been developed for testing was reviewed by the group. The substantial work undertaken by the SADIS provider State was recognized and it was concluded that the list developed met the intent of Conclusion 5/4. Only two minor amendments to the list were made by the group:

- a) a prompt function of SIGMETs and SPECIs would be added; and
- b) bulletins with the data designator “WT” (general tropical cyclone warnings) would be replaced by those with the data designator “FK” (tropical cyclone advisories for aviation).

The revised list of SADIS software functionalities for testing is at **Attachment H**.

4.23 The group agreed that this list, and the results of the final assessment, would be placed on the UK MET Office SADIS web-site and that the focal points would be informed accordingly.

Maintenance and repair of SADIS receiving equipment

4.24 The SADISOPSG/5 Meeting had formulated Conclusion 5/2 calling for the SADIS provider State, in consultation with Astrium, to investigate the feasibility of organizing training courses, and developing a manual, on first-line maintenance and repair of SADIS receiving equipment for technicians responsible for SADIS equipment. The SADIS provider State had addressed these issues 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 commercial bases. Therefore, preference had been given to written guidance focussing on fault finding and, in particular, on the FRAD card integration guidelines, as the FRAD card had been the source of problems encountered most frequently. It was emphasized that although the guidance was available for any SADIS user accessing the UK MET Office SADIS web-site, it was primarily intended for workstation manufactures and ASECNA who would be the only ones authorized to carry out tests in a controlled manner. Furthermore, a dedicated Astrium help line telephone number had been established. The group welcomed these developments. However, it felt that the group authorized to carry out these tests was too restricted and that the guidance should be addressed to a wider audience, including skilled technicians in a larger number of SADIS user States. In this respect, the SADIS provider State emphasized that it was up to Astrium to decide who would be officially allowed to perform the diagnostics and that, in accordance with normal commercial practice, any maintenance and repair by unauthorized personnel would be at the State's own risk and could result in substantial additional damage and cost. To avoid unauthorized interventions, the group felt that the SADIS provider State should approach Astrium to find out whether the list of authorized maintenance personnel could be expanded to cover a number of skilled technicians in SADIS user States. The SADIS provider State indicated its willingness to follow-up this matter; however, it cautioned the group that it would be highly unlikely that Astrium would grant this authorization to all SADIS user States.

4.25 With regard to training, it was understood that Astrium would organize these events on a commercial basis and that any event would have to be fully funded by the participating SADIS user States. Nevertheless, the group was of the opinion that it would be worthwhile that the SADIS provider State investigated with Astrium the costs involved if a training event were to be organized, for example, in the AFI Region. In this respect, the group recognized the kind offer by Kenya to host such an event if deemed feasible.

4.26 The group formulated the following conclusion:

Conclusion 6/15 — Maintenance of SADIS receiving equipment

That the SADIS provider State be invited to approach Astrium to:

- a) investigate whether consideration could be given to expanding the list of authorized personnel to undertake maintenance to include skilled technicians in selected SADIS user States; and taking into account the conclusions from the investigations
- b) study the possibility of organizing training events on the maintenance of SADIS receiving equipment for skilled technicians in the AFI Region and assess the costs involved.

SADIS internet-based FTP/HTTP service for back-up

4.27 The SADIS provider State informed the group of a SADIS internet-based FTP/HTTP service which was already available for the SADIS users in the United Kingdom. This service would be offered to all

users authorized to receive SADIS or ISCS towards the end of the year 2001. It was emphasized that 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. The web-site would be password protected to prevent the unauthorized access to this data. The group noted that there would be two types of services: a standard service (FTP) which would be offered free of charge for authorized SADIS and ISCS users and a value-added premium service (HTTP) which would be available on a commercial basis to these authorized users. The premium service (HTTP) could, however, be offered free of charge to authorized users for a limited test period (e.g. one month).

4.28 The group welcomed the development of internet-based back-up service. It, however, prompted a number of queries and comments. In particular, the following issues were raised:

- a) **access to the SADIS FTP server.** A query was made whether a State not participating in the SADIS cost recovery scheme and not receiving the SADIS data would still be authorized to access the SADIS internet-based FTP server. It was noted that such a State would not have access the SADIS internet-based FTP server; however, if that State was already authorized to receive the ISCS data, it would be another matter: the State could also access the FTP server. A view was expressed that ISCS users should not be granted access to this service as it was thought that such access without participation of the SADIS cost recovery scheme could erode the whole system. However, it was pointed out that authorized ISCS users were already receiving the WAFS and OPMET data free of charge and that an access to the internet server would not change the current situation;
- b) **financing of the development of the FTP server.** A concern was voiced that this service could result in increases of the costs recovered from SADIS users. However, the SADIS provider State ensured that the development of this service had been entirely financed by the United Kingdom and would not therefore influence the costs recovered from SADIS user States contributing to the mandatory cost recovery scheme; and
- c) **responsibility of the quality of products offered from the server.** It was agreed that this issue was becoming increasingly important; however, the problem posed with the SADIS FTP server would not be any different from that occurring with the SADIS broadcast since in both services the origin of the products and data was clearly identified.

4.29 It was suggested that the time period covered by the FTP service was far too short and that in fact, data from previous 18 hours were frequently needed and should therefore be included in the FTP server. The SADIS provider State indicated that the expansion of the time would not pose any technical problems and that the time over which data would be available from the server would therefore be expanded to cover the previous 18 hours.

4.30 As a more general comment, it was suggested that the internet could in the long term perhaps replace satellite broadcasts as a more cost-effective solution. However, it was realized that at the present time there was a clearly stated requirement for these broadcasts. Furthermore, the internet could not be used as a primary means since it had no official status within aeronautical telecommunications and did not form part of the AFS. In this context, it was indicated by WMO that the use of the internet to distribute aeronautical meteorological data had also been addressed by the WMO Executive Council which had expressed serious concerns in this regard; subsequently, a letter had been sent to ICAO calling for this issue to be addressed. In view of the foregoing, it was felt that the use of the internet for transmitting aeronautical data needed further study and should therefore be addressed by ICAO as a matter of urgency. Indeed, there was currently no guidance within ICAO provisions related to the use of the internet; however, this topic was proposed to be included in the agenda of the worldwide MET Divisional Meeting, planned to be held in September 2002.

4.31 The group concluded discussions on this item by formulating the following conclusion:

Conclusion 6/16 — SADIS internet-based FTP service

That, the SADIS provider State be invited to implement the SADIS internet-based FTP service as a back-up to the SADIS broadcast with the understanding that this service would be provided

- a) only to States and users authorized to receive SADIS or ISCS broadcasts; and
- b) without any additional cost to States.

Back-up link for alphanumeric data on SADIS

4.32 The group recalled that there had been a back-up link for OPMET messages between Bruxelles and Bracknell to be used in case the Heathrow AFTN switch became non-operational. The back-up circuit had been removed on 1 April 2001 as a result of changes which had taken place in Belgium. It was noted that about half of the data broadcast on SADIS originated from the AFTN and this portion of the data could be made available during an outage at Heathrow if a back-up link were retained

4.33 A number of options were considered by the group. It was first suggested that some type of back-up would be desirable. However, in view of the very low likelihood of failures at the Heathrow switching centre which had been refurbished with the new AFTN/CIDIN message switch, the group concluded that the establishment of a back-up link would not be justified. In this regard, the group formulated the following decision:

Decision 6/17 — Back-up link for alphanumeric OPMET messages on SADIS

That, there is no need to establish a back-up link for obtaining alphanumeric OPMET messages for SADIS uplink from centres other than the Heathrow AFTN switch.

4.34 The group was informed by the member from the United States that, following approval by the WAFSSG of a request by APANPIRG, a new area of coverage “M” had been added to the list of high-level SIGWX charts to be produced within WAFS. The area “M”, shown in **Appendix I**, would be produced by WAFC Washington beginning 9 July 2001. It was agreed that this product would be included in the SADIS broadcast.

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AGENDA ITEM 5: SADIS USER GUIDE AND AMENDMENT PROCESS

5.1 The group noted that the first edition of the SADIS User Guide 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.

5.2 It was noted that the second edition of the guide minus new Annexes 2 and 3 (BMG tables) had been placed on the ICAO SADISOPSG web-site. In the meantime there was a hyperlink on the ICAO SADISOPSG web-site (SADIS) to the United Kingdom MET Office SADIS web-site for access to Annexes 2 and 3. The hard copy of the second edition of the guide including Annexes 2 and 3 would be issued shortly, and the ICAO SADISOPSG web-site would also be updated to include Annexes 2 and 3 at that time.

5.3 So far, no changes have been made to the amendment process agreed by SADISOPSG/3, Decision 3/15.

5.4 The group reviewed and approved the proposed amendments to the Second Edition of the SADIS User Guide. Furthermore, it was noted that there would be consequential and additional amendments of a purely editorial nature (e.g. change of MMS to Astrium). The group agreed that those amendments would be forwarded to the Secretary by 31 July 2001 at the latest for incorporation in the User Guide.

5.5 The group was also informed about the changes in the UK MET Office SADIS web-site. The introduction of a semi-automated way of updating Annex 2 and 3 was highlighted. The efforts by the SADIS provider State and Belgocontrol in this regard were acknowledged by the group.

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AGENDA ITEM 6: FUTURE WORK PROGRAMME

6.1 Under this agenda item the group reviewed its work programme and related executive summaries to take account of its decisions/conclusions developed at this meeting.

6.2 With regard to the MOTNEG involvement in the SADISOPSG Gateway Working Group, the group recalled that the Chairman of the MOTNEG in his *ex officio* capacity represented MOTNEG interests on the group. In addition, a number of members of the SADISOPSG Gateway Working Group were also members of the MOTNEG.

6.3 The updated work programme, executive summaries, terms of reference and composition of working groups are given in **Appendix J**. The group agreed that the executive summaries for task were useful to members and should be continued.

6.4 In view of the introduction of the mandatory cost recovery in 2001, the group was of the opinion that the composition of the group should perhaps be reviewed. In particular, it was felt that it would not be appropriate for States not participating in the cost recovery and hence not receiving the SADIS broadcast to be members of the SADISOPSG. In this regard, the group formulated the following conclusion:

Draft Conclusion xx/xx — Composition of the SADISOPSG

That, in view of the introduction of the mandatory cost recovery scheme, the APANPIRG, APIRG, EANPG and MIDANPIRG be invited to review the composition of the SADISOPSG.

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AGENDA ITEM 7: OTHER BUSINESS

7.1 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 2002, it was noted that the group had so far managed to hold a meeting in all ICAO regions served by SADIS except the MID Region. It was, therefore, agreed that the Secretary should investigate the possibility of holding the next meeting in the MID Region, and failing that, to approach the ICAORD ASIA/PAC Regional Office, Bangkok with a view to holding the next meeting in Bangkok.

7.2 The group recognized the crucial role that the previous Secretary of the group, Mr. T. Fox had played in contributing to the development and success of the SADIS system over the last six years. It was emphasized that the task had not always been easy but that thanks to Tom's professional advice the SADISOPSG had been able to make substantial progress over the years. The group wished him well for his upcoming, well-deserved retirement.

7.3 The group also took the opportunity to thank the SADIS provider State, and Mr. R. Orrell in particular, for the vital support both during the year and at the SADISOPSG Meetings. It was felt that the wide range of outstanding documentation provided to the group by Richard had largely contributed to the success of this and past meetings.
