

## APPENDIX K

### WORK PROGRAMME, EXECUTIVE SUMMARIES AND TERMS OF REFERENCE OF SADISOPSG AND ITS WORKING GROUPS AND TEAMS

#### WORK PROGRAMME

10 July 2003

No.	Task	Progress and estimated completion date	Source
1.	Develop and maintain the SADIS broadcast content, schedule and priorities, including WAFS products and OPMET messages and any other data agreed for transmission.	<ul style="list-style-type: none"> <li>– content published in the SADIS User Guide</li> <li>– routine task R1</li> </ul>	T.O.R.
2.	Organize the flow of OPMET message traffic through SADIS gateway to SADIS node based on OPMET exchange systems in the AFI, ASIA, EUR and MID Regions and OPMET message traffic relayed from the ISCS broadcast. (In coordination with EANPG, APANPIRG, APIRG and MIDANPIRG CNS/MET sub-groups).	<ul style="list-style-type: none"> <li>– routine task R2</li> </ul>	T.O.R.  MOTNEG/1 paragraph 2.18 METG/5 Appendix A to Agenda Item 5.
3.	Establish monitoring of OPMET data broadcast on the SADIS and back-up functions for the SADIS (In coordination with the BMG).	<ul style="list-style-type: none"> <li>– routine task R3</li> </ul>	T.O.R. SADISOPSG Conclusion 5/8 Conclusion 6/16
4.	Maintain, update and extend, as necessary, the SADIS User Guide including the SADIS OPMET message requirement table in Annex 1 (in coordination with the BMG <i>ex-officio</i> Member and SADIS Provider State concerning Annexes 2 and 3)	<ul style="list-style-type: none"> <li>– routine task R4</li> <li>– first edition in 1997</li> <li>– second edition in 2001</li> <li>– placed on the ICAO Web site</li> <li>– update procedure of Annexes completed in June 2001</li> </ul>	EANPG Conclusion 37/20 SADISOPSG Decisions 3/15; 4/1 Conclusions 4/2; 4/7; 4/17; 6/8
5.	Issue an annual management report and a statement of SADIS operational efficacy and update the SADIS inventory (SADISOPSG Operational Efficacy Assessment Team in coordination with the SADIS Provider State for submission to the SCRAG)	<ul style="list-style-type: none"> <li>– routine task R5</li> <li>– Efficacy Questionnaire and Management Report to include data related to the past two years</li> </ul>	SADISOPSG Conclusions 1/6; 1/8; 2/2; 2/3; 2/5; 3/7; 4/5; 4/6; 5/5; 5/7; 6/3; 6/5; 6/6; 6/7; 7/4; 7/5; 8/4, 8/5.
6.	Collect and distribute AIS information on SADIS	<ul style="list-style-type: none"> <li>– routine task R6</li> <li>– feasibility established</li> <li>– no requirement stated</li> <li>– to be activated only if operational req. stated</li> </ul>	SADISOPSG Decision 2/18 SADISOPSG/3 Draft conclusion endorsed by the PIRGs
7.	Monitor, report on and propose action on technological developments having an impact on the SADIS (SADISOPSG Technological Developments Team)	<ul style="list-style-type: none"> <li>– routine task R7</li> </ul>	SADISOPSG Decisions 3/13; 4/12; 8/14 Conclusions 7/14

No.	Task	Progress and estimated completion date	Source
8.	Develop SADIS Gateway Function (SADISOPSG Gateway Working Group, in co-ordination with the BMG).	<ul style="list-style-type: none"> <li>– <i>ad hoc</i> task A1</li> <li>– fully implemented in 2003.</li> </ul>	SADISOPSG Decision 1/1. EANPG Conclusion 38/33 endorsed by the PIRGs approved by the ICAO Council. SADISOPSG/4 Appendix M, SADISOPSG Conclusion 5/15; 8/15.
9.	Include non-WAFS SWL and SWM forecasts in the SADIS broadcast	<ul style="list-style-type: none"> <li>– <i>ad hoc</i> task A2</li> <li>– decision made not to include non-WAFS SIGWX in T4</li> <li>– to be reconsidered in 2005 after the implementation of the BUFR code form.</li> </ul>	METG Conclusion 5/2; WAFSSG; SADISOPSG/2 draft conclusion endorsed by relevant PIRGs SADISOPSG/3 paragraph 3.5
10.	Develop the SADIS second-generation broadcast (SADIS 2G)	<ul style="list-style-type: none"> <li>– <i>ad hoc</i> task A3</li> <li>– Provider State complete SADIS 2G trials with two test sites</li> </ul>	SADISOPSG Conclusions 7/14 SADISOPSG/8 Draft conclusion to be endorsed by the PIRGs
11.	Update the SADIS Strategic Assessment Tables including a 5-year outlook (SADISOPSG Strategic Assessment Team)	<ul style="list-style-type: none"> <li>– ongoing</li> <li>– all PIRGs concerned agreed to update the tables annually</li> </ul>	SADISOPSG Decision 2/9.
12.	Develop the operational concept for the second-generation SADIS two-way system (SADIS 2G+) based on approved VSAT technology	<ul style="list-style-type: none"> <li>– new task</li> </ul>	SADISOPSG Decision 8/14
13.	Review the composition of the SADISOPSG	<ul style="list-style-type: none"> <li>– reviewed by all the PIRGs</li> <li>– to be re-activated, as necessary</li> </ul>	SADISOPSG/6 para 6.4 and (draft) Conclusion
14.	Coordinate, as necessary, with SADIS Cost Recovery and Allocation Administrative Group (SCRAG)	<ul style="list-style-type: none"> <li>– ongoing through the Chairman and secretary</li> </ul>	T.O.R.

**SADISOPSG EXECUTIVE SUMMARIES**

**SADISOPSG Task No. R\*1:**      **Development and maintenance of the SADIS broadcast content, schedule and priorities**

**Task:**                      The data and product content of the SADIS broadcast has to be developed, maintained and updated in line with operational requirements developed by the ICAO planning and implementation regional groups

**Source:**                      Terms of reference

**Co-ordination:**      MET and CNS/MET sub-groups of APANPIRG, APIRG, EANPG and MIDANPIRG; WAFSOPSG and IAVWOPSG, as necessary

**Output:**                      Up-to-date annexes to SADIS User Guide with amendments promulgated via SADIS broadcast, via the ICAO SADISOPSG web-site and subsequently by hard copy.

**Progress:**                      OPMET information required from aerodromes to be included on the SADIS broadcast published as Annex 1 of the SADIS User Guide. The actual content of broadcast published as Annexes 2 and 3 of SADIS User Guide. SADISOPSG/4 agreed that Annexes 2 and 3 should be based on the EUR BMG OPMET tables.

**References:**                      SADISOPSG/1 Report, paragraphs 9.1 to 9.14  
SADISOPSG/3 Report, paragraphs 5.4, Conclusion 3/15  
SADISOPSG/4 Report, paragraphs 3.1 to 3.6, Conclusion 4/8  
SADISOPSG/5 Report, paragraphs 3.7 to 3.9, Conclusion 5/9  
SADISOPSG/6 Report, paragraphs 3.2 to 3.13, Conclusions 6/8 and 6/9  
SADISOPSG/7 Report, paragraphs 3.1 to 3.11, Conclusions 7/6, 7/8 and 7/9  
SADISOPSG/8 Report, Agenda Item 3, Conclusions 8/6, 8/7, 8/8 and 8/9.

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\* Routine task

**SADISOPSG Task No. R2:      Organization of flow of OPMET messages through SADIS gateway to SADIS node**

<b>Task:</b>	The flow of OPMET traffic must be organized to ensure smooth and reliable transit through the SADIS gateway at the London switch to the SADIS node for uplink on the broadcast. Pattern of flow based on the various OPMET exchange systems in existence in the AFI, ASIA, EUR and MID Regions (AMBEX, ROBEX), and the inclusion of ISCS data, as necessary, and the installation of SADIS two-way VSATs, as decided by the relevant PIRGs.
<b>Source:</b>	SADISOPSG terms of reference; MOTNEG/1 (paragraph 2.18) and METG/5, Appendix A to Agenda Item 5
<b>Co-ordination:</b>	MET and CNS/MET sub-groups of APANPIRG, APIRG, EANPG and MIDANPIRG
<b>Output:</b>	OPMET message routing table/flow diagram; SADIS Gateway High-Level Technical Requirements and SADIS Gateway Operations Handbook
<b>Progress:</b>	To be developed in step with regional planning. Technical requirements completed. Draft versions of Operations Handbook considered by SADISOPSG/3 and SADISOPSG/6. Publication of the Handbook expected in 2003.
<b>References:</b>	SADISOPSG/2 Report, Appendices H and I. SADISOPSG/6 Report, paragraph 4.12 SADISOPSG/7 Report, paragraphs 4.11 to 4.13 SADISOPSG/8 Report, paragraphs 4.12.1 to 4.12.4.
<b>Group responsible:</b>	SADISOPSG Gateway Working Group (terms of reference given in SADISOPSG/1, Appendix G) Rapporteur: Mike Williamson

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**SADISOPSG Task No. R3:      SADIS monitoring and back-up functions for the SADIS**

**Task:**                    To develop monitoring and backup functions.

**Source:**                Terms of reference

**Co-ordination:**      WAFCs London and Washington.

**Output:**                Monitoring function included in Gateway Technical Requirements; back-up function responsibility of SADIS Provider State and service provider.

**Progress:**             SADIS Gateway High-Level Technical Requirements paragraph 3.4.

**References:**          MOTNEG/2 Report Appendix C;  
SADISOPSG/2 Report, Appendix H.  
SADISOPSG/5 Conclusion 5/8 and Appendix F  
SADISOPSG/6 Conclusion 6/16  
SADISOPSG/7, paragraph 4.13 and 4.26

**SADISOPSG Task No. R4:      SADIS User Guide**

- Task:** Maintain, update and extend, as necessary, SADIS User Guide. To develop and maintain the table of METAR and TAF messages required to be broadcast on the SADIS.
- Source:** EANPG Conclusion 37/20; METG/5 paragraph 5.27
- Co-ordination:** NIL
- Output:** SADIS User Guide (in Arabic, English, French, Russian and Spanish) and amendments thereto. Annex 1 to the SADIS User Guide listing the requirements for OPMET messages and Annexes 2 and 3 listing the actual OPMET content of the broadcast.
- Progress:** Guide was circulated to States by ICAO regional offices in May 1997. Amendment 1 issued 30 May 1997 via SADIS broadcast with hard copy following 11 June 1997. Amendment 2 issued 5 February 1998. SADIS Home page introduced at: <http://www.metoffice.com/sadis/>. ICAO SADIS web-site introduced in 2000; however, Annex 1 would not be downloadable. The second edition published in 2001.
- References:** SADISOPSG/1, Decision 1/11;  
SADISOPSG/2, Decision 2/15.  
SADISOPSG/3, Decision 3/15  
SADISOPSG/4, Decision 4/1, Conclusions 4/2 and 4/17 and Appendix E  
SADISOPSG/5, paragraphs 5.1 to 5.3  
SADISOPSG/6, paragraphs 5.1 to 5.5  
SADISOPSG/7, paragraphs 5.1 to 5.5  
SADISOPSG/8, Agenda Item 5, Conclusions 8/6, 8/9 and 8/18.

**SADISOPSG Task No. R5:      Operational clearance of SADIS and SADIS inventory**

**Task:**                      Routine issuance of annual operational clearance and update of SADIS inventory for submission to SCRAG.

**Source:**                      SCRAG

**Co-ordination:**      SCRAG, WAFC London

**Output:**                      Annual management report by the Provider State.  
Annual statement of SADIS operational efficacy and updated inventory sent by the Chairman to the Chairman of SCRAG

**Progress:**                      1995/1996 operational clearance and inventory issued by SADISOPSG/1;  
1996/1997 operational clearance and updated inventory issued by SADISOPSG/2;  
1997/1998 operational clearance and inventory issued by SADISOPSG/3.  
1998/1999 operational clearance and inventory issued by SADISOPSG/4;  
1999/2000 operational clearance and inventory issued by SADISOPSG/5;  
2000/2001 operational clearance and inventory issued by SADISOPSG/6.  
2001/2002 operational clearance and inventory issued by SADISOPSG/7;  
2002/2003 operational clearance and inventory issued by SADISOPSG/8.

**References:**                      SADISOPSG/1 Report, Conclusion 1/6 and 1/8;  
SADISOPSG/2, Conclusions 2/2, 2/3 and 2/5;  
SADISOPSG/3, Conclusion 3/7  
SADISOPSG/4, Conclusions 4/5 and 4/6  
SADISOPSG/5, Conclusions 5/5 and 5/7  
SADISOPSG/6, Conclusions 6/5 and 6/6  
SADISOPSG/7, Conclusions 7/4 and 7/5  
SADISOPSG/8, Conclusions 8/4 and 8/5.

**SADISOPSG Task No. R6:      Collection and distribution of AIS information on SADIS**

**Task:** Study the use of SADIS for the collection and distribution of AIS information, initially for the EUR Region.

**Source:** EANPG/38 Conclusion 38/26 b)

**Co-ordination:** APANPIRG, APIRG, EANPG and MIDANPIRG

**Output:** Results of the study presented to EANPG/39 and other relevant PIRGs.

**Progress:** The study applied to all the ICAO Regions served by SADIS. The AIS/MAP Divisional Meeting (1998) addressed the subject and recommended that the study be brought to the attention of GREPECAS (AIS/MAP Divisional Meeting, Rec. 3/1.1). Feasibility established. PIRGs agreed to SADISOPSG/3 proposal that the study be discontinued pending statement of an operational requirement by one of the PIRGs concerned. To be re-activated only if a PIRG expresses an operational requirement for AIS data on the SADIS.

**References:** SADISOPSG/2 Decision 2/18.  
SADISOPSG/3 (Draft) Conclusion endorsed by the PIRGS discontinuing the study pending a statement of an operational requirement.



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**SADISOPSG Task No. R7:      Technological Developments**

<b>Task:</b>	Monitor, report on and propose action on technological developments having an impact on the SADIS.
<b>Source:</b>	SADISOPSG T.O.R. (Development)
<b>Coordination:</b>	SCRAG
<b>Output:</b>	Reports from time to time to SADISOPSG.
<b>Progress:</b>	SADISOPSG/4: Study of possible TPC/IP output part on SADIS VSATs. TCP/IP conversion unit developed by MMS in 2000. SADISOPSG/7: Assessment of the SADIS second-generation broadcast (SADIS 2G) using a combination of a new-type modulation (i.e. QPSK and Viterbi or Turbo coding) and new receiving equipment. SADISOPSG/8: Development of the operational concept for the second-generation SADIS two-way system based on approved VSAT technology.
<b>References:</b>	SADISOPSG/3 Dec 3/14 and Appendix I SADISOPSG/4, Dec 4/12 and Appendix J; Conclusion 4/13 SADISOPSG/5, paragraph 4.3 SADISOPSG/6, paragraph 4.18 SADISOPSG/7, paragraphs 4.23 and 4.24, Conclusion 7/14 SADISOPSG/8, paragraphs 4.11.5 to 4.11.11, Decision 8/14
<b>Group responsible:</b>	SADISOPSG Technological Developments Team Rapporteur: B. Richter

**SADISOPSG Task No. A\*1:      Development of SADIS Gateway Function**

- Task:** To develop over-all SADIS Gateway Function which is responsible for the OPMET exchange technical details.
- Source:** EANPG Conclusions 38/33 and 38/34, endorsed by APANPIRG, APIRG and MIDANPIRG. Conclusion 38/33 approved by the ICAO Council in June 1997.
- Co-ordination:** MET and CNS/MET sub-groups of APANPIRG, APIRG, EANPG and MIDANPIRG
- Output:** Gateway Technical Requirements Document  
Gateway Operations Handbook
- Progress:** High-Level Technical Requirements were developed 1996-97 by joint meetings of SADISOPSG Gateway Working Group and MOTNEG Working Group (see MOTNEG/2 Report, Appendix C), endorsed in principle by EANPG/38, with the proviso that the SADISOPSG complete outstanding details at SADISOPSG/2 and adopt final technical requirements. Work at SADISOPSG/3 comprised:
- a) assessment of peak data flows;
  - b) incorporation of ISCS(l) data/products;
  - c) operational procedures for gateway; and
  - d) quality control of inter-regional OPMET messages (including potential legal liability of automatic error correction).
- SADISOPSG/4 approved SADIS Gateway High-level Technical Requirements including automatic error correction procedures. Re-tendering for gateway function underway in 2000, results were considered by SADISOPSG/5, which delegated authority to approve technical solution to a joint meeting of the SADISOPSG Gateway Working Group and the MOTNEG Working Group.
- References:** EANPG Conclusions 38/33 and 34; Council 151/14;  
SADISOPSG/2, Conclusions 2/11, 2/12 and 2/13.  
SADISOPSG/3 Conclusion 3/13;  
SADISOPSG/4, Conclusions 4/15 and 4/16,  
SADISOPSG/5, Conclusion 5/15  
SADISOPSG/6, paragraphs 4.9 to 4.12  
SADISOPSG/7, paragraphs 4.11 to 4.13  
SADISOPSG/8, paragraphs 4.12.1 to 4.12.4
- Group responsible:** SADISOPSG Gateway Working Group  
Rapporteur: Mike Williamson

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**SADISOPSG Task No. A2:      Inclusion of non-WAFS SWM and SWL forecasts on the SADIS broadcast**

**Task:**                    If a requirement to carry SWM or SWL forecasts on the SADIS broadcast is approved, to arrange for their inclusion without adversely impacting transmission of WAFS products and OPMET messages.

**Source:**                METG/5 Conclusion 5/2 and WAFSSG

**Co-ordination:**      WAFSSG and MET and CNS/MET sub-groups of APANPIRG, APIRG, EANPG and MIDANPIRG

**Output:**                Inclusion in SADIS broadcast content, if necessary. Not before 2005.

**Progress:**            WAFSSG/6 advised that SWL SIGWX in T4 format should not be included on SADIS. This has been endorsed by the relevant PIRGs. The restriction would not necessarily apply to SWM or SWL forecasts in the BUFR code form. The issue will be re-addressed after the implementation of the BUFR code form by States.

**References:**          SADISOPSG/1 Report, paragraph 9.2;  
WAFSSG/6 Report, paragraph 6.5.1;  
SADISOPSG/2 para 3.13 and (draft) Conclusion endorsed by relevant PIRGs

**SADISOPSG Task No. A3:                    Development of the SADIS second-generation broadcast (SADIS 2G)**

**Task:**                    To assess the desirability of the operational implementation of the complementary second SADIS carrier.

**Source:**                SADISOPSG/7, Conclusion 7/14

**Co-ordination:**      SCRAG

**Output:**               Implementation of the SADIS 2G on completion of the endorsement by the PIRGs concerned.

**Progress:**            First trials involving two test sites conducted in 2002/2003; results reported to the SADISOPSG/8 Meeting.; the trials expected to be completed by 2004.

**Reference:**           SADISOPSG/7, paragraphs 4.23 to 4.24 and Conclusion 7/14;  
SADISOPSG/8, paragraphs 4.10.1 to 4.10.5

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## **TERMS OF REFERENCE OF SADISOPSG, WORKING GROUPS AND TEAMS**

### **SADIS OPERATIONS GROUP - COMPOSITION AND TERMS OF REFERENCE**

#### **1. Composition**

China, Côte d'Ivoire, Egypt, Arab Republic of, Germany, India, Kenya, Netherlands, Saudi Arabia, Senegal, South Africa, Ukraine, United Kingdom, United States, Agency for the Security of Aerial Navigation in Africa and Madagascar (ASECNA), International Air Transport Association (IATA) and World Meteorological Organization (WMO).

#### **2. Terms of Reference**

The SADIS Operations Group should keep under review the SADIS operations to ensure that the system meets agreed requirements. It should also make recommendations to ICAO for the further development of the SADIS. In its work the group should take into account the financial implications of its technical and operational decisions and conclusions. The group should:

##### **2.1 Co-ordinate with States in the area served by the system on the following:**

- a) identification of user States' requirements;
- b) content and schedule of broadcasts with the WAFC provider State based on user States' requirements identified under a) above; and
- c) necessary remedial action to overcome identified deficiencies.

##### **2.2 Organize the flow of message traffic to:**

- d) define and establish OPMET collection exchange/dissemination programmes in close co-ordination with the MET and CNS/MET Sub-groups concerned in the AFI, ASIA, EUR and MID Regions;
- e) review channelling and routing schemes; and
- f) establish transmission priorities.

##### **2.3 Ensure SADIS adherence to relevant ICAO and WMO standards, recommended practices and procedures.**

##### **2.4 Organize the monitoring of the service to ensure the service meets user requirements.**

##### **2.5 Monitor and review, as necessary, back-up procedures.**

##### **2.6 Liaise effectively with operational, and when required financial, experts in user States; other ICAO management groups; SCRAG; VAACs; TCACs; and the two WAFCs to develop recommendations, as necessary, for consideration by ICAO to ensure that the SADIS evolves to meet existing and future aeronautical requirements in harmony with developments towards implementation of the final phase of the WAFS.**

- 2.7 Co-ordinate the operational aspects of the joint ICAO/WMO use of the system as regards ICAO aeronautical requirements.
- 2.8 Study the use of SADIS for the collection and distribution of AIS information in co-operation with the EUR AFS Group and the EUROCONTROL EATMP AIS Team, APANPIRG AFS Management Task Force and ATS/AIS/SAR Sub-group, and MIDANPIRG AIS/ATM Sub-group.
- 2.9 Report regularly to the EANPG, APIRG, MIDANPIRG and APANPIRG regarding the status of SADIS and on the activities of the SADIS Operations Group (SADISOPSG).

**SADISOPSG GATEWAY DEVELOPMENT TEAM****1. Composition**

China, Germany, Netherlands, United Kingdom, United States, ASECNA, EUR BMG and IATA.

**2. Continuous tasks**

- to maintain the Technical Requirement Document for the SADIS Gateway. This will include a continuous review of requirements;
- to maintain the SADIS Gateway Operations Handbook. This will include a continuous review of validation, monitoring and procedures;
- to maintain a close liaison with the Chairman and Secretary of the SADISOPSG; and
- to report on its activities to the SADISOPSG on an annual basis.

Rapporteur: Mike Williamson

**SADISOPSG STRATEGIC ASSESSMENT TEAM****1. Composition**

Germany, Saudi Arabia, United Kingdom, ASECNA, IATA and WMO

**2. Terms of reference**

- to analyse the tables of assessed future regional requirements provided by the PIRGs concerned and develop a report, for endorsement by the SADISOPSG, on a annual basis.

Rapporteur: Richard Orrell



**SADISOPSG TECHNICAL DEVELOPMENTS TEAM****1. Composition**

Germany, Netherlands, United Kingdom, United States and IATA.

**2. Continuous tasks**

- to evaluate options for technological development in respect of the technical and financial impacts and report back to the SADISOPSG.
- to report back to the SADISOPSG if the evaluation requires funding for consideration by SCRAG.
- to coordinate any funded study/evaluation, if approved by SCRAG and report back the results to the SADISOPSG.

Rapporteur: B.Richter

**SADISOPSG OPERATIONAL EFFICACY ASSESSMENT TEAM****1. Composition**

Chairman of the SADISOPSG, *ex-officio* Member from the BMG and United Kingdom.

**2. Continuous task**

- to analyse the completed questionnaires returned by States related to the operational efficacy of the SADIS broadcast
- to report back to the SADISOPSG on a yearly basis

Rapporteur: Richard Orrell

**SADISOPSG WORKSTATION SOFTWARE TEAM****1. Composition**

China, Egypt, South Africa, United Kingdom, ASECNA, IATA and WMO

**2. Terms of Reference**

- to establish which States (i.e. least developed countries (LDC) and other States) wish to be included in a collective tender process for the supply of
  - a) new SADIS workstations;
  - b) new visualization software and subsequent upgrades;
  - c) installation;
  - d) documentation / user manual;
  - e) training (limited to keep costs down); and
  - f) maintenance and support.
- to provide an estimate of the costs of the procurement for say, 20 systems;
- to establish how the costs will be recovered, e.g. SCRAG mechanism, through the WMO Voluntary Cooperation Programme (VCP) etc; and
- to draw up a procurement process, timescale and draft tender document for bid evaluation process not adversely affecting competition
- to report back to the SADISOPSG on an annual basis

Rapporteur: Nigel Gait

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