INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF

**THE EXTRAORDINARY TWENTIETH MEETING OF THE
SADIS COST RECOVERY ADMINISTRATIVE GROUP
(SCRAG/20 EXTRAORDINARY MEETING)**

(WebEx, 25 March 2020)

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INTRODUCTION

Place and Duration

1.	The additional, Extraordinary Meeting of the Twentieth SADIS Cost Recovery Administrative Group (SCRAG) was conducted by WebEx on Wednesday, 25 March 2020.

Participation

2.	The meeting participants included one Member from the European region, Mr. Patrick Simon. Also in attendance was Mr. Magdy Reda from IATA, the Provider State participants and an ICAO representative. The list of participants is shown in Appendix A.

Agenda

3.	The following agenda was adopted:

Agenda Item 1:	Review of the SCRAG's Working Arrangements and Purpose of the Meeting

Agenda Item 2:	Consideration of issues relevant to the SCRAG's work addressed by the Meteorology Panel (METP) Working Group on Meteorological Operations Group (WG-MOG)

Agenda Item 3:	Amendments to the Annexes of the SADIS Agreement

Agenda Item 4:	Other business

AGENDA ITEM 1:   REVIEW OF SCRAG'S WORKING ARRANGEMENT AND PURPOSE OF THE MEETING

Officers and Secretariat

1.1   This Extraordinary Meeting which took place on 25 March 2020, was planned to address specific operational issues occurring subsequent to the Twentieth SCRAG Meeting which took place on 27 November 2019. As a result, Mr. Patrick Simon (France), Chairperson of the Twentieth SCRAG meeting, retained the position of Chairperson. Ms. Joanna Zorbas, Joint Financing Officer, ICAO Headquarters in Montréal, served as Secretary.

Purpose of the Meeting

1.2   The Chairperson informed the Group of the purpose of the meeting, referring to the discussion and the conclusion reached during the Twentieth SCRAG meeting (SCRAG/20, Gatwick, 27 November 2019). It had been agreed that this Extraordinary Meeting could take place in March just after the WG-MOG-13 meeting rather than in April, through a Memo sent by ICAO.

> **Excerpt from SCRAG/20 Report, paragraph 6.5 and Conclusion 20/7:**
>
> *Subsequent to the Meteorology Panel (METP) Working Group on Meteorological Operations Group (WG-MOG), METP WG-MOG/10 meeting, the SADIS infrastructure was significantly updated. It was moved from an on-premise system to one which uses Amazon Web Services infrastructure. In addition, the SADIS support staff allocation was restructured. These changes that impact both Annex I and Annex II of the Agreement will be presented to the next MOG meeting in March 2020. The Group agreed to hold an extraordinary SCRAG meeting, via teleconference, in April 2020, in order to expedite the publication of the updated Annexes.*
>
> **SCRAG Conclusion 20/7 —**
>
> *The Group agreed to hold an extraordinary meeting via teleconference in April 2020 to review the amendments to Annex I and Annex II of the SADIS Agreement, proposed by the METP WG-MOG meeting in March 2020.*

AGENDA ITEM 2:   CONSIDERATION OF ISSUES RELEVANT TO THE SCRAG'S WORK ADDRESSED BY THE METEOROLOGY PANEL (METP) WORKING GROUP ON METEOROLOGICAL OPERATIONS GROUP (WG-MOG)

2.1   The Group was informed of the content, discussions and conclusions of the Thirteenth Meeting of the Meteorology Panel (METP) Working Group on Meteorological Operations Group (WG-MOG) (METP WG-MOG/13, WebEx, 25-26 March 2020) related specifically to METP WG MOG/13/SN/05, *Amendments to the SADIS Agreement: Annexes I and II*. The information was presented by the Provider State.

2.2   The following Action relating to Annexes I and II of the SADIS Agreement, was reached during the METP WG-MOG/13 meeting as provided in METP WG MOG/13/SN/05:

MOG Action agreed 13/06: SADIS Agreement Annex I and II 2020-2021

That, the Rapporteur of the METP-WG/MOG be invited to immediately forward the updated SADIS Agreement Annex I and II inventory given in Appendix D to the Chair of SCRAG to enable an extraordinary SCRAG meeting to take place in March 2020.

Status: Complete. Annex I is shown in Appendix B and Annex II is shown in Appendix C.

AGENDA ITEM 3:   AMENDMENTS TO ANNEXES OF THE SADIS AGREEMENT

3.1   The Group reviewed the amendments to Annex I, SADIS Services, to the SADIS Agreement as proposed by the METP WG-MOG/13 and agreed upon by the United Kingdom as the SADIS Provider State. These amendments were necessary to ensure that services would continue to meet the approved operational requirements. The additions and deletions to the existing text of Annex I appear in outline and strikeout formats in Appendix B.

3.2   As a result of its review, the Group adopted the following Conclusion:

Extraordinary SCRAG Conclusion 20/1 —

> *With the consent of the United Kingdom as the SADIS Provider State, in accordance with Article XVII, paragraph 5, of the SADIS Agreement, Annex I, SADIS Services, of the SADIS Agreement is amended as indicated in Appendix B to the Extraordinary SCRAG/20 Report.*

3.3   The Group reviewed the amendments to Annex II, SADIS Inventory, to the SADIS Agreement as proposed by the METP WG-MOG/13 and agreed upon by the United Kingdom as the SADIS Provider State. These amendments were necessary to ensure that the inventory would continue to meet the approved operational requirements. The additions and deletions to the existing text of Annex II appear in outline and strikeout formats in Appendix C.

3.4   As a result of its review, the Group adopted the following Conclusion:

Extraordinary SCRAG Conclusion 20/2 —

> *With the consent of the United Kingdom as the SADIS Provider State, in accordance with Article XVII, paragraph 5, of the SADIS Agreement, Annex II, SADIS Inventory, of the SADIS Agreement is amended as indicated in Appendix C to the Extraordinary SCRAG/20 Report.*

AGENDA ITEM 4:   OTHER BUSINESS

4.1   The Group expressed their appreciation for the hard work and dedication of Mr. Colin Hord, (UK CAA, SADIS Provider and Rapporteur, METP WG-MOG) on his upcoming retirement and the SCRAG recognized the valuable contribution of Colin's expertise to the SCRAG.

4.2   The Group expressed its appreciation to the Met Office in Exeter for arranging the WebEx.

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APPENDIX A

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AMENDMENT TO ANNEX I, SADIS SERVICES, TO THE SADIS AGREEMENT

SADIS SERVICES

Editorial note. ― *Changes proposed by METP WG-MOG/13 are highlighted in tracked-change mode as* ~~deletions~~ *or* additions

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ANNEX I

SADIS SERVICES

Note.— A glossary of abbreviations as used in this Annex is provided at the end of the Annex.

1. **Internet based (FTP) service**

   ~~A summary of products~~ Products available on SADIS: ~~. Detailed descriptions are contained within the SADIS User Guide (Parts 1 and 2) of the service.~~

   a) distribution of WAFS upper-air forecasts in GRIB2 code form;

   b) distribution of WAFS SIGWX forecasts in BUFR code form;

   c) distribution of WAFS SIGWX forecasts in PNG chart form;

   d) distribution of OPMET information in alphanumeric format (METARs, TAFs, SIGMET, special AIREPs, volcanic ash ~~and~~ tropical cyclone and space weather advisories) from those regions whose OPMET information is needed to satisfy approved requirements in the regions served by SADIS;

   e) distribution of meteorological information in graphical format (e.g. Volcanic Ash Graphics).

   Note: Detailed descriptions are contained within the SADIS User Guide (Parts 1 and 2) of the service.

2. **Collection service**

   a) collection of OPMET information by the SADIS Gateway from States in accordance with approved requirements stated by PIRGs and actioned by Meteorological Operations Working Group (WG-MOG/SADIS)~~, the Working Group tasked by the Meteorology Panel (METP) to oversee the operational provision of SADIS~~;

   b) monitoring, validation and repair of data received at the SADIS Gateway to the required standards, for the provision of real-time scheduled reports and for off-line quality control analysis.

3. **Back-up service**

   The recognised back-up to failure if the SADIS FTP service is via the USA administered, WAFS Information File Service (WIFS). SADIS FTP users are encouraged to arrange back-up accounts with the WIFS provider via https://aviationweather.gov/wifs/ .

   Note 1: - Usage restrictions apply. Further information is provided in the SADIS User Guide Part 1 (Administrative)

Note 2: - It is the responsibility of the SADIS FTP user to arrange and test back-up accounts with WIFS.

4. User support service

a) 24-hour help line/faults desk;

b) dissemination of administrative messages, including amendments to bulletin headers given in the SADIS User Guide (Parts 1 and 2).

5. File transfer protocol service

Provision of facilities dedicated to establishing and receiving an FTP connection, using password protected access, to the SADIS FTP server that enables the transfer of WAFS upper-air forecasts in GRIB code, WAFS SIGWX forecasts in BUFR code, WAFS SIGWX forecasts in PNG chart form and OPMET data over the Public Internet. The FTP service implements Digital Signatures and Digital Certificates to confirm data integrity and authenticity of the data.

6. Fair Use of SADIS Products

a) The use of SADIS is continually monitored to ensure the volume of data being downloaded is not excessive and does not impede the operation of the SADIS FTP Servers;

b) A user who is responsible for >10% of the total volume of data being downloaded from SADIS FTP Server in a single week will be considered as excessive usage.

c) If users are deemed to be excessively downloading data then the SADIS Manager will contact the user with a request to the use to reduce the volume data being downloaded. The SADIS Manager may at their discretion, limit or terminate access to the SADIS FTP server without recourse to the user if the excessive use continues.

7. Security

a) The SADIS FTP server will be continually monitored for lawful security purposes.

b) Users are not permitted to share passwords and are responsible for keeping passwords secure.

c) The SADIS Manager reserves the right to suspend or terminate a user's access to the SADIS FTP Server if the users use of the system or the user has failed to observe the obligations of 7 b) has resulted or is likely to result in an increased risk to security of the SADIS FTP Server.

d) The SADIS Manager reserves the right to restrict access to the SADIS FTP Server in the event of a security threat and users acknowledge that access to the SADIS FTP Server may be restricted or unavailable until such time the security threat has been resolved.

Glossary of abbreviations

AIREP	Air report
BUFR	Binary Universal Form for the Representation of meteorological data (code)
FTP	File Transfer Protocol (Internet based)
GRIB2	Gridded binary edition 2 (code)
~~*ISDN*~~	~~Integrated Services Digital Network~~
METAR	Routine aviation weather report in code form
METP	Meteorology Panel
~~*NWSTG*~~	~~National Weather Service Telecommunications Gateway (Washington, USA)~~
OPMET	Operational meteorological (information or data)
PIRG	ICAO planning and implementation regional group
PNG	Portable Network Graphics (image format)
SADIS	Secure Aviation Data Information Service
SADIS FTP	Internet based provision of SADIS
SADIS Gateway	The United Kingdom message-handling system which receives data from the Aeronautical Fixed Service for transmission on SADIS
SADISOPSG	SADIS Operations Group~~. T~~was tasked with the oversight of SADIS until its dissolution in 2015. Superseded by Meteorological Operations Working Group (WG-MOG) under the Meteorology Panel (METP). ~~Reference retained for historical purposes.~~
SIGMET	Information of specified en-route weather phenomena which may affect the safety of aircraft operations
SIGWX	Significant weather
TAF	Aerodrome forecast in code form
WAFS	World area forecast system
WG-MOG	~~Meteorological Operations Working Group (under METP)~~ The oversight of the SADIS service is undertaken by the Meteorological Panel (METP) which has tasked Met Operations Group (WG-MOG/SADIS) to carry out this responsibility, each year they meet to ensure the service is meeting the users needs.

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APPENDIX C

AMENDMENT TO ANNEX II, SADIS INVENTORY, TO THE SADIS AGREEMENT

SADIS INVENTORY

Editorial note. — Changes proposed by METP WG-MOG/13 are highlighted in tracked-change mode as ~~deletions~~ *or* additions

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ANNEX II

SADIS INVENTORY

(2019-2020)

The inventory items identified below cover the equipment and staffing required to provide, operate and maintain the Secure Aviation Data Information Service (SADIS). The inventory includes: communications circuits, communications back-up system, procured services, and staff. It should be noted that some equipment items form part of a wider infrastructure. Costs of some individual items cannot be separated from the required infrastructure that includes a significant part of the development of the software and technical configuration. The inventory is in accordance with the SADIS User Guide.

1. EQUIPMENT

A. Key components of SADIS FTP infrastructure and communications circuits

~~1. The~~ SADIS ~~FTP hub~~ infrastructure ~~connection to the Met Office message switch (MetSwitch)~~ consists of the following: ~~a number of units installed at Exeter.~~

i) **Solely procured for SADIS (major components)**

NIL. ~~SADIS gateway function software (developed specifically for the gateway as part of the NATS CoreMet system; see items under "Not procured principally for SADIS").~~

Note: In November 2019 SADIS FTP was migrated to use Amazon Web Services infrastructure (see Section 2A) which is a procured service.

~~Dell Poweredge R900 servers to provide the SADIS FTP service (see Section 1 C).~~

~~ii)~~ ~~**Principally procured for SADIS**~~

~~a) At the Met Office;~~

~~See Section 1 C for itemized components~~

iii)   **Not procured principally for SADIS**

a)   Met Office Message switch (MetSwitch): Total investment £328K[1] of which 1.23 per cent is attributable to the SADIS FTP service usage: switching data to operational FTP service;

b)   ~~Allocated bandwidth 42 Mbit/sec bursting to 60 Mbit/sec between server and Internet Service Provider (ISP) in support of the SADIS FTP service. Individual client connections have a maximum throughput of 4098 Kbit/sec.~~

~~c~~b)   NATS SADIS gateway function software (developed specifically for the gateway as part of the NATS CoreMet system) ~~NATS Message switch (CoreMet System)~~;

   ~~Note. ─ Some elements of the CoreMet System are exclusively for the support of the SADIS gateway function.~~

~~d~~c)   ~~SADIS FTP equipment running costs;~~Met Office operational monitoring software; and

   Note. ─ This enables the ~~*comprises support and maintenance of the servers underpinning the SADIS FTP services, a share of the cost for the underlying storage capacity on which the SADIS FTP services are reliant, and*~~ *operational monitoring of the SADIS FTP service~~s by Tivoli~~ and ensures~~ing~~ problems can be identified and resolved in a timely manner.*

~~e~~d)   Met Office Service Desk equipment; ~~and~~

   Note. ─ Equates to 3.5 per cent of the total share of Met Office IT Operations equipment.

B. SADIS data back-up system

The recognised back-up ~~to failure if the~~for SADIS FTP in the event of a failure ~~service~~ is via the USA administered, WAFS Information File Service (WIFS). SADIS FTP users are encouraged to arrange back-up accounts with the WIFS provider via https://aviationweather.gov/wifs/ .

   Note 1: - Usage restrictions apply. Further information is provided in the SADIS User Guide Part 1 (Administrative)

   Note 2: - It is the responsibility of the SADIS FTP user to arrange and test back-up accounts with WIFS.

~~**C. Hub equipment and services located at Exeter and Whitehill**~~

~~*Item   Description   Quantity*~~

~~**1.   SADIS FTP service**~~

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[1] budgeted cost for providing MetSwitch service during the fiscal year ~~2017~~2018/~~2018~~2019.

1.1   ~~Dell Poweredge R900 servers with 4 Gb RAM~~   ~~2~~
1.2   ~~Dell Poweredge R900 (4 core) servers with 32 Gb RAM *~~   ~~2~~
1.3   ~~Shared Storage Arrays (analogous to hard disk storage,~~
       ~~but with dynamic upper limit)~~   ~~2~~
1.4   ~~VMWave Virtual Platform with Red Hat Linux 5.3 OS~~   ~~2~~
1.5   ~~Intel Xeon X7350, 2.93 GHz Processors~~   ~~2~~
1.6   ~~Licenses, misc. support and maintenance costs~~   ~~1~~

~~Note 1.   Item 1.2 relates to Digital Signing servers.~~
~~Note 2.   Items listed under Section 1 are located at Exeter.~~

2. PROCURED SERVICES

A.   ~~Annual maintenance of Met Office Exeter on-site equipment (SADIS FTP server); and~~ Amazon Web Services (AWS) elements used by the Met Office in the operation of SADIS FTP:

AWS Service	Specification	Quantity	What the service is used for:
EC2	t3.medium 2* vCPU *(Intel Xeon Platinum 8000 series)* 4 GiB Memory Network Bandwidth: ≤5Gbps; EBS Bandwidth ≤1.50 Gbps)	3	2* FTP Server and 1 Apps Server
S3	N/A	6	Data Storage : Ingestion; FTP Content; AuthN; Logs & Alerts.
Route53	N/A	1	DNS
Lambda	N/A	N/A	Various Serverless Functions including housekeeping, Log formatting, Alerting Management etc
Cloudwatch	N/A	N/A	Log Aggregation
NAT Gateway	N/A	1	Access
VPC	N/A	1	
Kinesis Data Stream	N/A	1	Log Entry Routing
Kinesis Firehose	N/A	2	
DynamoDB	N/A		Alert Management
Athena	N/A		

~~C~~B.   Gateway function:

    i)   Communication circuits between Met Office and NATS infrastructure site; and

    ii)   System maintenance.

3. ANNUAL STAFF REQUIREMENTS

A. ~~United Kingdom~~ **Met Office**

i) ~~Service Desk~~ **First Line Support**

~~Note.— The Service Desk acts as a first point of contact for all inquiries, including those concerning the OPMET Gateway function. Complex inquiries will be passed to a relevant expert. Experts are available either on a 24-hour rota basis, or as a daytime support with limited on-call capability.~~

Help Desk   *Skill*

1. Service desk (first point of contact)   Incident   Management   and   customer enquiries
~~2. Additional Service Desk operator   Customer Enquiries~~

~~Note. — Total support for SADIS provided by the Met Office Service Desk team equates to 0.3 per cent of the total Weather Desk budget.~~

Note.— The Service Desk acts as a first point of contact for all inquiries, including those concerning the OPMET Gateway function. Complex inquiries will be passed to a relevant expert. Experts are available either on a 24-hour rota basis, or as a daytime support with limited on-call capability.

ii) **Second Line Support**

24-hour IT Operations support   *Skill*

1. Shift Leader (ITCS)   Technical Supervisor, incident handling
2. Networks Incident Manager (NIM)   Service Continuity, system monitoring

~~Note. — Total support for SADIS provided by the Met Office IT Operations team equates to 3.5 per cent of the total IT Operations budget.~~

~~Normal working hours support   Skill~~

~~1. Change and problem manager (CPM)   Process Specialist~~

iii) **Third and Fourth Line Support**

Normal working hours support and "best endeavors"   *Skill*

1. Message Switching Manager   Incident handling, server adjustments
2. Message Switching Staff   Incident handling and account changes
3. AWS Technical Support   AWS expertise, support and guidance

~~iii~~iv) **Additional support**

Day support   *Resource*

~~1. Systems integration team   14 staff-days of~~

	~~network computer engineer~~
~~2. Message Switching Manager~~	~~15 staff-days of MSS manager~~
~~3~~1. Administrator	144 ~~140~~ staff-days of senior stakeholder relationship manager ~~executive officer~~ (SADIS manager)
~~4~~2. International aviation management ~~manager~~	14~~5~~ staff-days of aviation business head
~~5. Data traffic~~	~~5 staff-days of communications engineer~~
~~6~~3. Contract procurement and management	4 staff-days of senior procurement ~~officer~~manager
~~7. Message switching Team~~	~~15 staff-days of technical officer~~
~~8~~4. Invoice Administration	20 staff-days of ~~invoicing officer~~finance assistant and
	15 staff-days of ~~business accountant~~senior finance manager

B. NATS infrastructure site – ~~CACC~~ Data Services (OPMET Gateway function)

Note 1. — ~~The CACC~~ Data Services provide~~s~~ the OPMET Gateway function, which is provided from a single operational site, but with a full capability at an alternative site. Staff are available either on a 24-hour basis, or as a daytime support with on-call capability.

Note 2. — The resource demand ~~of 604 days required~~ to provide the SADIS Gateway service is the standard required staff days needed to provide the SADIS service. It comprises 6 watches providing the H24 element of the service.~~1 ATSA4 and 1 ATSA3 each (Operations), 1 ATCE4 (Engineering Watchkeeping) and 3 ATCE4 (Engineering Day Support) and 2 Gateway~~ and day support administrative staff. The Cost recovery NATS submits to the SCRAG will represent actual staff-days required to provide the service.

~~24 hour support~~Role and Responsibilities	*Resource*
1. ~~Air Traffic Services Assistant~~ Operational Staff - Operational Staff relates to the H24 function in ROC LONDON. Monitor, validate, record & report on issues raised through the SADIS Gateway operation.	521 staff-days per annum

~~Note.   Total support for SADIS provided by the 24 hour support for the OPMET Gateway function equates to 36 per cent of the CACC Met Service H24 support and 18 per cent of the total CACC Helpdesk budget.~~

2. ~~H24 Maintenance~~ Engineering Staff - Engineering Staff includes the duties carried out by the Engineering Day support team and an H24 engineers for the support of SADIS.	20 ~~10~~ staff-days per annum

Day Support	*Resource*
3. Administration Staff - The Administration Office carries out the documentation creation and amendments, adaptation changes, investigations and meeting attendance of the SADIS Gateway operation.	~~54~~63 staff-days per annum

4. Meeting Attendance — 6 staff days per annum
5. Staff Training and Documentation — 3 staff days per annum

6. Day Support Engineering — 10 staff days per annum

Note. Total support for SADIS provided by the day support for the OPMET Gateway function equates to 5 per cent of the total day support budget.

C. Bought-in services

Additional support and maintenance agreements with third parties are in place to provide additional third line AWS support of the SADIS FTP services.

— END —