

**SADIS COST RECOVERY & ADMINISTRATIVE GROUP (SCRAG)
NINETEENTH MEETING**

(Gatwick, UK, 27th November 2019)

Agenda Item 3: Review of actual SADIS costs and cost shares for the period 1 January to 31 December 2018

SADIS Gateway COSTS

(Presented by the SADIS Gateway Manager)

REFERENCES

SCRAG19WP5, SCRAG19WP10 and SCRAG19WP12.

1. Introduction

This paper was originally written as requested at SCRAG/18 to provide an overview of the functions carried out by the SADIS Gateway. This paper has been updated with figures relevant for SCRAG/20

2. Roles

2.1 Air Traffic Services Asst. / Operational Staff

Operational Staff relates to the H24 function in ROC LONDON. The H24 team monitor, validate, record & report on issues raised through the SADIS Gateway operation. Section 3 gives a breakdown of the main elements and tasks associated with this role.

2.2 Maintenance Engineer / Engineering Staff

Engineering Staff have now been amalgamated into one reference in the costings. This includes the duties carried out by the Engineering Day support team and an H24 element. Section 4 gives a breakdown of the duties carried out by the Engineers for SADIS.

2.3 Administration Officer / Administration Staff

The Administration Office carries out the documentation creation and amendments, adaptation changes, investigations and meeting attendance of the SADIS Gateway operation. All changes are reviewed and verified independently to ensure quality control. Section 5 gives a breakdown of the duties carried out by the Administration Office.

2.4 Communications

This relates to line rental costs. This will be removed from future papers as there is now no cost to SADIS associated with line rental as per the 2018 Actual and 2019 FOO.

2.5 Maintenance

The Maintenance element of the costing refers to the apportionment of the costing to the system manufacturer contract and sustainment budget.

2.6 T&RE

This is the cost attributable to offsite dealings for SADIS. The actual value will be related to the location and number of meetings associated with SADIS.

3 Air Traffic Services Asst. / Operational Staff Tasks

3.1 Monitored Stations

All Station Reports or Bulletins that have a requirement to be monitored are listed in Appendix C of the SADIS Gateway Operations Handbook “Online monitoring lists _ Routine aerodrome Data Monitoring and Routine Bulletin Monitoring” this is included as Table A below.

When a Report or Bulletin is not received within the required issue time window, the threshold is breached, and an alarm is triggered. The Operational Staff are advised of Reports or Bulletins not received via SVC (Service) Message to their console, with separate monitoring for SA or FT.

On receipt of the SVC Message, the Operational Staff check whether the Report or Bulletin has been received by Coremet with the expected WMO Bulletin Header. If it has, they will confirm that it is routed to SADIS.

If the Bulletin is routed to SADIS, they will check to confirm if the filing time is outside the parameters specified in Coremet.

If the expected Bulletin has been received, but the Station Report is missing, an SVC is sent to the appropriate Originator, ROC or OPMET Gateway (as per Table B of this paper) advising of a missing Report for the Station and to request investigation. The time the SVC message is sent and the date/time group of the last received report is recorded in an excel spreadsheet.

If the expected Bulletin has not been received, the Operational Staff will check the aeronautical message switch (AMS-UK) to ensure that there are no communication issues between the UK Com Centre and the RODEX/Distribution Station.

If there are no problems identified with the messaging network, an SVC message will be sent as per the paragraph above and recorded in the excel spreadsheet accordingly.

When the investigating station responds with the results of their investigation, a message is sent on SADIS advising SADIS users of the issue.

When a Station is no longer alarming the time when the Bulletin was received is recorded.

Attachment A of this paper shows the Reports covering the period from January 1st (including roll over from December 2018) to the morning of November 11th.

The Reports cover times from hours to days - for long periods many Reports (hourly or half hourly) are processed by the Operational Staff for the station recorded.

Monthly Individual Reports (as per SCRAG19 WP)

| Month | 2019 reports | 2018 reports |
|-------------------------------------|--------------|--------------------------------------|
| January | -396 | 375 |
| February | -377 | 343 |
| March | -493 | 378 |
| April | -388 | 365 |
| May | -401 | 481 |
| June | -374 | 337 |
| July | -390 | 341 |
| August | -426 | 325 |
| September | -429 | 66 (recorded up to 6 th) |
| October | -448 | |
| November up to the 11 th | -132 | |

Table A - Routine Aerodrome Data Monitoring

| Location Indicator | Aerodrome Name | SA | FC | FT |
|--------------------|------------------------------------|----|----|----|
| CYVR | VANCOUVER INTL, BC | X | | X |
| CYYZ | TORONTO/LESTER B. PEARSON INTL, ON | X | | X |
| DAAG | ALGER/HOUARI BOUMEDIENE | X | | X |
| DNAA | ABUJA/NNAMDI AZIKIWE | X | | X |
| EBBR | BRUSSELS/BRUSSELS-NATIONAL | X | | X |
| EDDF | FRANKFURT/MAIN | X | | X |
| EDDL | DUESSELDORF | X | | X |

| | | | | |
|------|--|---|--|---|
| EDDM | MUENCHEN | X | | X |
| EDDT | BERLIN-TEGEL | X | | X |
| EGCC | MANCHESTER | X | | X |
| EGKK | LONDON GATWICK | X | | X |
| EGLL | LONDON HEATHROW | X | | X |
| EHAM | AMSTERDAM/SCHIPHOL | X | | X |
| EIDW | DUBLIN | X | | X |
| EKCH | KOBENHAVN/KASTRUP | X | | X |
| ENGM | OSLO/GARDERMOEN | X | | X |
| ESSA | STOCKHOLM/ARLANDA | X | | X |
| FACT | CAPE TOWN (CAPE TOWN INTERNATIONAL AIRPORT) | X | | X |
| FAOR | JOHANNESBURG INTERNATIONAL AIRPORT | X | | X |
| FLKK | KENNETH KAUNDA | X | | X |
| GOOY | DAKAR/YOFF | X | | X |
| HKJK | NAIROBI/JOMO KENYATTA INTL. TWR/APP/NOF/MET/CIVIL AIRLINES | X | | X |
| KATL | HARTSFIELD - JACKSON ATLANTA INTERNATIONAL, GA. | X | | X |
| KBOS | BOSTON/GENERAL EDWARD LAWRENCE LOGAN INTERNATIONAL, MA. | X | | X |
| KDEN | DENVER INTERNATIONAL | X | | X |
| KDFW | DALLAS-FORT WORTH INTERNATIONAL, TX. | X | | X |
| KDTW | DETROIT METROPOLITAN WAYNE COUNTY, MI. | X | | X |
| KEWR | NEWARK LIBERTY INTERNATIONAL, NJ. | X | | X |
| KFLL | FORT LAUDERDALE/HOLLYWOOD INTERNATIONAL, FL. | X | | X |
| KIAD | WASHINGTON DULLES INTERNATIONAL, DC. | X | | X |
| KIAH | GEORGE BUSH INTERCONTINENTAL/HOUSTON, TX. | X | | X |
| KJFK | NEW YORK/JOHN F. KENNEDY INTERNATIONAL, NY. | X | | X |
| KLAS | LAS VEGAS/MCCARRAN INTERNATIONAL, NV. | X | | X |
| KLAX | LOS ANGELES INTERNATIONAL, CA. | X | | X |
| KLGA | NEW YORK/LA GUARDIA, NY. | X | | X |
| KMCO | ORLANDO INTERNATIONAL, FL. | X | | X |
| KMDW | CHICAGO/CHICAGO MIDWAY,IL. | X | | X |
| KMIA | MIAMI INTERNATIONAL, FL. | X | | X |

| | | | | |
|------|--|---|--|---|
| KMSP | MINNEAPOLIS-ST. PAUL INTERNATIONAL (WOLD CHAMBERLAIN), MN. | X | | X |
| KORD | CHICAGO - O'HARE INTERNATIONAL, IL. | X | | X |
| KPHL | PHILADELPHIA INTERNATIONAL, PA. | X | | X |
| KPHX | PHOENIX SKY HARBOR INTERNATIONAL, AZ. | X | | X |
| KSAN | SAN DIEGO INTERNATIONAL, CA. | X | | X |
| KSEA | SEATTLE/SEATTLE-TACOMA INTERNATIONAL, WA. | X | | X |
| KSFO | SAN FRANCISCO/INTL,CA. | X | | X |
| KSLC | SALT LAKE CITY INTERNATIONAL, UT. | X | | X |

| | | | | |
|------|---|---|--|---|
| KTPA | TAMPA INTERNATIONAL, FL. | X | | X |
| LEBL | BARCELONA/EL PRAT | X | | X |
| LEMD | MADRID/BARAJAS | X | | X |
| LEPA | PALMA DE MALLORCA | X | | X |
| LFPG | PARIS-CHARLES DE GAULLE | X | | X |
| LFPO | PARIS-ORLY | X | | X |
| LGAV | ATHINAI/ELEFThERIOS VENIZELOS | X | | X |
| LIMC | MILANO/MALPENSA | X | | X |
| LIRF | ROMA/FIUMICINO | X | | X |
| LOWW | WIEN-SCHWECHAT | X | | X |
| LPPT | LISBOA | X | | X |
| LSZH | ZURICH | X | | X |
| LTAI | ANTALYA (MIL-CIV) | X | | X |
| LTBA | ISTANBUL/ATATURK | X | | X |
| MKJP | KINGSTON/NORMAN MANLEY | X | | X |
| MMMX | MEXICO CITY | X | | X |
| MPTO | PANAMA/TOCUMEN | X | | X |
| NZAA | AUCKLAND INTL | X | | X |
| OEJN | JEDDAH/KING ABDULAZIZ INTERNATIONAL | X | | X |
| OIII | TEHRAN/MEHRABAD INTL | X | | X |
| OMDB | DUBAI INTERNATIONAL | X | | X |
| OTHH | HAMAD INTERNATIONAL/DOHA | X | | X |
| PHNL | HONOLULU INTERNATIONAL, OAHU, HI. | X | | X |
| RCTP | TAIBEI CITY/TAIBEI INTL AP | X | | X |
| RJAA | NARITA INTL/TOKYO | X | | X |
| RJCC | SAPPORO/NEW CHITOSE | X | | X |
| RJFF | FUKUOKA | X | | X |
| RJTT | TOKYO INTL | X | | X |
| RKSI | INCHEON INTL/SEOUL | X | | X |
| RPLL | MANILA/NINOY AQUINO INTL | X | | X |
| SAEZ | EZEIZA MINISTRO PISTARINI, INTL. (BA) | X | | X |
| SBGL | RIO DE JANEIRO/GALEAO-ANTONIO CARLOS JOBIM, RJ | X | | X |
| SBGR | SAO PAULO/GUARULHOS, GOVERNADOR ANDRE FRANCO MONTORO, SP | X | | X |

| | | | | |
|------|-------------------------------|---|--|---|
| SKBO | BOGOTA INTL/CUNDINAMARCA | X | | X |
| SPIM | LIMA-CALLAO/INTL JORGE CHAVEZ | X | | X |
| TBPB | GRANTLEY ADAMS, BARBADOS | X | | X |
| UDD | MOSCOW/DOMODEDOVO | X | | X |
| UUEE | MOSCOW/SHEREMETYEVO | X | | X |
| VABB | MUMBAI | X | | X |
| VHHH | HONG KONG/INTERNATIONAL | X | | X |

| | | | | |
|------|--------------------------------------|---|--|---|
| VIDP | DELHI (IGI) | X | | X |
| VTBS | BANGKOK/SUVARNABHUMI INTL AIRPORT | X | | X |
| WIII | JAKARTA INTL/SOEKARNO-HATTA | X | | X |
| WMKK | SEPANG/KL INTERNATIONAL AIRPORT | X | | X |
| WSSS | SINGAPORE/CHANGI | X | | X |
| YBBN | BRISBANE/BRISBANE INTL | X | | X |
| YMML | MELBOURNE/MELBOURNE INTL | X | | X |
| YSSY | SYDNEY/SYDNEY (KINGSFORD SMITH) INTL | X | | X |
| ZBAA | BEIJING/CAPITAL | X | | X |
| ZGGG | GUANGZHOU/BAIYUN | X | | X |
| ZGSZ | SHENZHEN/BAOAN | X | | X |
| ZSPD | SHANGHAI/PUDONG | X | | X |
| ZUUU | CHENGDU/SHUANGLIU | X | | X |

Table B - Monitored Stations

| <u>Station</u> | <u>SA Header</u> | <u>FT Header</u> | <u>SVC</u> | <u>Station</u> | <u>SA Header</u> | <u>FT Header</u> | <u>SVC</u> | |
|----------------|------------------|------------------|------------|----------------|------------------|------------------|------------|------|
| CYVR | CN62 | CN31 CWA0 | CWA0 | LFPG | FR31 | FR31 LFPW | LFPW | |
| CYYZ | CN62 | CN35 CWA0 | CWA0 | LFPO | FR31 | FR31 LFPW | | |
| DAAG | AL31 | AL31 DAAA | LFPW | LGAV | GR34 | GR31 LGAT | LOWM | |
| DNAA | AO21 | AO20 DRNN | | LIMC | IY31 | IY31 LIIB | LFPW | |
| EBBR | BX31 | BX31 EBBR | EBBR | LIRF | IY31 | IY31 LIIB | | |
| EDDF | DL31 | DL31 EDZO | EDZO | LOWW | OS31 | OS31 LOWM | LOWM | |
| EDDL | DL31 | DL31 EDZO | EDZO | LPPT | PO31 | PO31 LPMG | LFPW | |
| EDDM | DL31 | DL31 EDZO | EDZO | LSZH | SW31 | SW31 LSSW | LOWM | |
| EDDT | DL31 | DL32 EDZO | EDZO | LTAI | TU31 | TU31 LTAA | | |
| EGCC | UK31 | UK31 EGRR | EGRR/EGCC | LTBA | TU31 | TU31 LTAA | | |
| EGKK | UK31 | UK31 EGRR | EGRR/EGKK | MKJP | JM31 | JM31 MKJP | MKJP | |
| EGLL | UK31 | UK31 EGRR | EGRR/EGLL | MMMXX | MX31 | MX31 MMMXX | MMMXX | |
| EHAM | NL31 | NL31 EHDB | EHDB | MPTO | PM31 | PM31 MPTO | MPTO | |
| EIDW | IE31 | IE31 EIDB | EIDB | NZAA | NZ31 | NZ31 NZKL | WSSS | |
| EKCH | DN31 | DN31 EKCH | EKCH | OEJN | SD31 | SD31 OEJD | LOWM | |
| ENGM | NO31 | NO31 ENMI | ENMI | OIII | IR31 | IR31 OIII | | |
| ESSA | SN32 | SN31 ESWI | ESWI | OMDB | BN32 | BN32 OBBI | | |
| FACT | ZA31 | ZA31 FAPR | LFPW | OTHH | QT20 | QT11 OTHH | WSSS | |
| FAOR | ZA31 | ZA31 FAPR | | PHNL | US25 | US25 KWBC | | KWBC |
| FLKK | AP35 | AP32 FAPR | | RCTP | HK31 | HK31 VHHH | | |
| GOOY | SG21 | AO30 GOOY | | RJAA | JP31 | JP31 RJTD | | |
| HKJK | KN20 | EA32 HKNA | RJCC | JP32 | JP32 RJTD | | | |
| KATL | US23 | US23 KWBC | KWBC | RJFF | JP32 | JP32 RJTD | | |
| KBOS | US23 | US21 KWBC | | RJTT | JP31 | JP31 RJTD | | |
| KDEN | US22 | US22 KWBC | | RKSI | KO31 | KO31 RKSI | | |
| KDFW | US23 | US23 KWBC | | RPLL | HK31 | HK31 VHHH | | |
| KDTW | US22 | US22 KWBC | | SAEZ | AG05 | AG05 SABM | | SABM |
| KEWR | US21 | US21 KWBC | | SBGL | BZ21 | BZ22 SBGL | SBGL | |
| KFLL | US23 | US23 KWBC | | SBGR | BZ18 | BZ18 SBGR | SBGR | |
| KIAD | US21 | US21 KWBC | | SKBO | CO20 | CO20 SKBO | SKBO | |
| KIAH | US23 | US23 KWBC | | SPJC | PR82 | PR88 SPIM | SPIM | |
| KJFK | US21 | US21 KWBC | | TBPB | BR31 | BR31 TBPB | TBPB | |
| KLAS | US24 | US24 KWBC | UDD | RS33 | RS33 RUMS | LOWM | | |

| | | | | | | | | |
|------|------|-----------|------|------|------|-----------|--|------|
| KLAX | US24 | US24 KWBC | | UUEE | RS33 | RS33 RUMS | | |
| KLGA | US21 | US21 KWBC | | VABB | IN31 | IN31 VABB | | WSSS |
| KMCO | US23 | US23 KWBC | | VHHH | HK31 | HK31 VHHH | | |
| KMDW | US22 | US22 KWBC | | VIDP | IN31 | IN31 VIDP | | |
| KMIA | US23 | US23 KWBC | | VTBS | AE31 | AE31 VTBB | | |
| KMSP | US22 | US22 KWBC | | WIII | ID31 | ID31 WIII | | |
| KORD | US22 | US22 KWBC | | WMKK | MS31 | SR32 WSSS | | |
| KPHL | US21 | US21 KWBC | | WSSS | SR31 | SR31 WSSS | | |
| KPHX | US24 | US24 KWBC | | YBBN | AU31 | AU31 YBBN | | |
| KSAN | US24 | US24 KWBC | | YMML | AU31 | AU31 YBBN | | |
| KSEA | US24 | US24 KWBC | | YSSY | AU31 | AU31 YBBN | | |
| KSFO | US24 | US24 KWBC | | ZBAA | CI31 | CI31 ZBBB | | |
| KSLC | US24 | US24 KWBC | | ZGGG | CI31 | CI31 ZBBB | | |
| KTPA | US23 | US23 KWBC | | ZGSZ | CI32 | CI32 ZBBB | | |
| LEBL | SP31 | SP31 LEMM | | ZSPD | CI31 | CI31 ZBBB | | |
| LEMD | SP31 | SP31 LEMM | | ZUUU | CI32 | CI32 ZBBB | | |
| LEPA | SP31 | SP31 LEMM | LFPW | | | | | |

| | | | | |
|-------|----------|----------|----------|----------|
| OTHER | LFPW | WSSS | LOWN | KWBC |
| <C | LFPWYMYX | WSSSYMYX | LOZZMSVC | KWBCYMYX |

3.2 Validation and correction of messages

All messages which are to be disseminated over SADIS are subject to validation as per section 2 of the SADIS Gateway Operations Handbook:

OPMET Validation

WMO Header Validation

METAR Validation TAF

Validation

SIGMET Validation

AIRMET Validation

Correction procedures are carried out as per section 3 of the SADIS Gateway Operations Handbook when applicable. If the Operational Staff cannot apply any of the corrections the message is dropped.

For a 24hr period the number of error Queue messages repaired and dumped was recorded by the Operational Staff. The results are shown in Table C.

Table C - SADIS Error Queue 24Hrs (11th – 12th November)

| UTC | Repaired | Dropped | Hourly |
|--------------|-----------------|----------------|---------------|
| 15-16 | 21 | 12 | 33 |
| 16-17 | 26 | 6 | 32 |
| 17-18 | 27 | 16 | 43 |
| 18-19 | 14 | 12 | 36 |
| 19-20 | 16 | 15 | 31 |
| 20-21 | 17 | 6 | 23 |
| 21-22 | 14 | 15 | 29 |
| 22-23 | 27 | 12 | 39 |
| 23-24 | 20 | 13 | 33 |
| 00-01 | 24 | 10 | 34 |
| 01-02 | 10 | 8 | 18 |
| 02-03 | 32 | 18 | 50 |
| 03-04 | 28 | 9 | 37 |
| 04-05 | 20 | 15 | 35 |
| 05-06 | 25 | 6 | 31 |
| 06-07 | 20 | 19 | 39 |
| 07-08 | 19 | 13 | 32 |
| 08-09 | 20 | 8 | 28 |
| 09-10 | 15 | 15 | 30 |
| 10-11 | 24 | 6 | 30 |
| 11-12 | 28 | 19 | 47 |
| 12-13 | 28 | 5 | 33 |
| 13-14 | 32 | 10 | 42 |
| 14-15 | 25 | 9 | 34 |
| Total | 512 | 277 | 789 |

It should be noted that if a centre has an issue or is offline for a length of time a 'data dump' is received at ROC London. These can range up to 370 messages being received in one hit. During a data dump most messages must be dropped by the Operational Staff as they are stale and therefore not disseminated over SADIS. However, as the messages are not sent or received in any order, each message must be manually checked.

3.4 Validation of Location Indicators

When a message is rejected because a location Indicator contained within a Bulletin is not currently in the Coremet adaptation, the following steps are followed.

The location is checked against the ICAO DOC 7910.

If the location is registered in the 7910 then receipt of the Location Indicator is monitored to ensure it is not a mis-type or one-off addition and that it will continue to be present in the Bulletin. Once confirmed as a permanent addition, a change request is raised for the Administration Officer to add the location to the Coremet adaptation.

If the location is not in the DOC 7910 an SVC message is sent to the compiling ROC or IROG requesting information on the unknown location.

- If a response is received this will be added to a change request to have the location added to the system adaptation by the Administration Officer.
- If no response is received the issue is passed to the Administration Officer to investigate.

4. Maintenance Engineer / Engineering Staff Tasks

The Maintenance Engineer performs the following specific support tasks. The costs apportioned to SADIS are a small fraction of the actual engineering costs which are shared with other assets and services maintained by the same engineering team.

- 24-hour system support including on call.
- Second/ third level fault investigation and manufacturer liaison.
- Integration support with other customer systems.
- Support to Data Services for more customer focussed system issues.
- System upgrades and security fixes.
- Daily, weekly and monthly maintenance including backups and passwords management.
- System health monitoring and system load analysis.

5. Administration Officer / Administration Staff Tasks

5.1 Bulletin Changes

Bulletin changes arise from METNOs and observations from rejections and queries. The list below shows the changes which have been made through change orders raised against SADIS since January 2019.

| | |
|-----------|-----|
| January | -19 |
| February | -2 |
| March | -6 |
| April | -0 |
| May | -36 |
| June | -9 |
| July | -9 |
| August | -0 |
| September | -48 |
| October | -7 |

5.2 Station and Bulletin requests from SADIS customers

When SADIS customers raise an observation to the SADIS manager regarding Stations or Bulletins data not being available on SADIS an investigation is conducted by the Administration Officer. Firstly a check is performed to determine if the data been available on SADIS recently.

- If not, time is spent contacting the relevant NOC, ROC and/or IROG to try and get the data disseminated to the SADIS Gateway.
- If the data has been available on SADIS, an investigation is carried out to find out the last time it was present. The relevant NOC, ROC or IROG may be contacted to try and find out what has happened to the data and try to resolve the issue.

The following Stations and bulletins have been investigated in the last year, often involving interregional coordination.

FTID33 WAHS, FTID32 WICC, FTID34 WIMM, SAID32 WICC, SAID31 WIMM, SAID34 WITT, WVAK03 PAWU, FTAH80 EGRR, FTXX69 EGRR, SAXX69 EGRR, FTTU31 LTAA, SATU31 LTAA, FNXX01 KW

HRYR, HTDA, HTKJ, OAKN, KQAL, KQXH, KQTA, KQPH, KQAJ, ZSLY, RPVE, RPVF, RPVI, WICC, ZSLY, ZSWX, ZSWZ, KWXA, KVBG, LTAI

5.3 Location Indicators

On receipt of a change request from the Operational Staff, the details are checked and verified and added to the Coremet adaptation. The following locations have been added in the last year following monitoring and investigation by the Operational Staff.

UACN, SBTD, OAIX, KQTA, KQXH, ZBAD, EKRS, DNAS, GMSL, HABB, LFOZ, WAVV, ZUZY, UACN, HECF, USTV, SVCO, ESOH, WIMN, WIME, WAHU.

5.4 Meetings and Documentation

Attendance to the SCRAG, MOG and the creation of WPs, IPS and amendment of existing document is carried out by the SADIS Gateway Manager. The WPs, IPs and documentation are reviewed by other SADIS Gateway staff.

6 Action

6.1 The SCRAG is invited to:

- a) Note the contents of the paper.
- b) Ask questions to clear any observations that have been made.

END