

SADIS COST RECOVERY ADMINISTRATIVE GROUP

TWENTY-FIRST MEETING

(Virtual Meeting, 1st December 2020)

ESTIMATED SADIS COSTS : 2 to 5 YEARS

(Presented by the United Kingdom)

REFERENCES

SADIS Agreement
SCRAG Reports 1-20
METP WG-MOG/3 Report
METP WG-MOG/4 Report
METP WG-MOG/6 Report
METP WG-MOG/10 Report
METP WG-MOG/13 Report

1. INTRODUCTION

1.1 The medium term (two to five years) forecast of the expected costs of operating the SADIS Services are provided in this Working Paper. Resource requirements will vary due to changing demand and these have been anticipated where possible and identified in the tables presented. Where the METP WG-MOG/9 has identified potential changes to the SADIS inventory, these will be reflected as appropriate.

2. DISCUSSION

2.1 The attached Table 1 and 2 identifies expected budgets for the years 2021 to 2024 based on expected trends for expenditure by the Met Office and NATS. 2019 actual costs and 2020 forecast costs are provided for comparison, as requested by the SCRAG/12 meeting.

2.2 An additional increase in staff day-rates is expected in the coming years so increases have been included for years 2022 onwards.

2.3 Costs attributable to the development of a next generation SADIS system (to come into operation by November 2023) are not included in these projections, as development and operating costs have not yet been determined. Note: the delivery date for the next generation SADIS has been delayed by a year due to COVID-19 and the change in the ICAO Annex 3 amendment schedule.

2.4 The following notes should be read in conjunction with Table 1 which is contained in the Appendix to this WP, and relates to Met Office costs.

a. Met Office to NATS link

Communications costs between the SADIS Gateway, operated by NATS, and the Met Office.

b. Message Switch

These charges relate to the routing of WAFS gridded data and OPMET data through into SADIS FTP.

c. Retired services

The migration of SADIS to a cloud-based provider in November 2019 and the revision of support costs has streamlined and reduced SADIS operating costs.

d. AWS server running costs

The cost of operating SADIS FTP using Amazon Web Services (AWS) cloud computing reflects all the individual elements that make up SADIS. Costs are expected to increase during 2021 due to the provision of 0.25 degree WAFS hazard data sets, and IWXXM data.

AWS Server Operating costs – this is proportional to the amount of data held on the servers and the specification of server chosen, and has been optimised to minimise costs
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AWS data egress charges - this cost is directly proportional to the volume of data being downloaded by the SADIS users
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AWS Cloud operations expertise = This cost enables SADIS to benefit from the provision of AWS cloud operations experts who are able to provide oversight and guidance in the operation of SADIS

e. WAFS 0.25 degree and IWXXM set up costs

This was a one off cost that relates to the addition of the new 0.25 degree WAFS hazard data sets and IWXXM data sets in November 2020.

f. Next Generation SADIS costs

The next generation SADIS system will become fully operational in November 2023, and as yet operating costs for the AWS infrastructure it will use are unknown.

g. First Line Support Costs

This includes 24x7 incident handling functions (call and e-mail) provided by the Met Office Service Desk. For each year the initial estimate is as shown in the table below, but the exact figure will relate to the number of incidents handled.

Description	Value 4,800 GBP
Incident Handling (initial call, follow up etc), 62 incidents per year	950
Incident Handling training – 2 hours per FTE year	1,850
Service Management – 8 hours per year	2,000

h. Second Line Support

This includes 24x7 system monitoring and incident handling functions to ensure the timely resolution of any SADIS operating problems. For each year the initial estimate is as shown in the table below, but the exact figure will relate to the number of incidents handled.

Description	Value GBP 20,500
Incident Handling (investigation, communication, resolution, documentation), 100 incidents per year	5,800
Monitoring costs, 9205 alerts	8,800
Incident Handling training – 4 hours per year per FTE	2,500
Service Management – 15 hours per year	3,400

i. Third and Fourth Line Support

This includes incident investigation and resolution provide by the Message Switching department, as well as the administration of SADIS user accounts and data routing. Fourth line support provides technical assistance in the AWS environment that SADIS is operating in. For each year the initial estimate is as shown in the table below, but the exact figure will relate to the number of incidents handled.

Description	Value 15,000 GBP
Message Switching Manager	5,000
Message Switching Staff	5,000
AWS technical support	5,000

j. Cost recovery and administration

Support is primarily provided by the SADIS Manager in the day to day operation of SADIS, management of user accounts, liaison with users, invoicing and planning and development work within the remit of the METP-WG/MOG (SADIS). Procurement and Finance support is required to implement the SADIS Cost Recovery process (SCRAG)

- k. Travel Costs**
Travel and subsistence costs for Met Office staff to attend appropriate Meteorological Panel Working Groups (Meteorological Operations Group, WG-MOG, in relation to SADIS) and SCRAG meetings are included here.
- l. Cost of Capital**
Cost of capital for future years has been estimated using the revised methodology applied in 2008 and described in SCRAG/10 WP/13.
- m. Administrative costs (bank charges, couriered invoices etc)**
Following SCRAG Conclusion 14/7, this item includes costs relating to the processing of invoices (usually when administration charges reduce the amount actually received by the SADIS Provider by a small amount), or the cost of couriered invoices where normal surface mail is unreliable.

2.5 Notes on SADIS Gateway costs.

- n. NATS gateway costs**
The NATS SADIS Gateway Costs are as described in SCRAG19-WP/16 and were simplified for future NATS gateways costs. They are all reflected in Table 2 which is contained in the appendix to this paper. Communication costs have been removed as these are now null.

Capital Investments

The final payment for the Capital Investments were made in the 2019 payment and are for the future are null and will be removed from all future SCRAG papers.

- o. Travel Costs**
Travel and subsistence costs for NATS staff to attend appropriate Meteorological Panel Working Groups (Meteorological Operations Group, WG-MOG, in relation to SADIS) and SCRAG meetings are included here. For the 2020 MOG-SADIS and SCRAG these values are zero, as all meetings were held online during the current COVID 19 pandemic.

2.6 Notes on CAA and ICAO costs

- p. CAA Administration costs**
This encompasses Met Authority Regulatory oversight and travel costs that relate to the WG-MOG SADIS and SCRAG meetings.
- q. ICAO Administration costs are detailed in WP/8**

3. CONCLUSIONS

3.1 A substantial review of the SADIS operating support costs by the UKMO has led to a significant reduction in costs for 2020 onwards.

3.2 Moving SADIS FTP from an on-premise system to the Amazon Web Services (AWS) cloud also brings a significant change in the way operating costs are calculated as well as a significant increase in system speed and resilience. The annual running costs for AWS will vary from year to year, based on the volume of data hosted on the servers and the number of SADIS users. This is because the “data egress” part of the operating costs is proportional to the amount of data being downloaded by the SADIS users. .

3.3 These figures should therefore be treated as an initial estimate of costs for the planning period and are subject to change. Operating costs for the next generation SADIS system (due to become operational at the end of 2023) are not included on these projections.

4. ACTION

4.1 The SCRAG/21 is requested to note these provisional figures for the SADIS Costs.

TABLE 1: UKMO Cost and manpower resource projections until year 2024 (at 2020 prices)

INVENTORY REF:			Actual 2019	FOO 2020	Est 2021	Est 2022	Est 2023	Est 2024
Note	DESCRIPTION							
UK MET OFFICE COSTS								
1. Equipment								
Principally procured for SADIS								
	comms link SADIS Gateway & Met Office	a	3,340	7,000	6,000	4,000	4,500	4,500
Not procured principally for SADIS								
	message switch	b	4,000	4,000	5,000	5,000	5,000	5,000
	internet bandwidth (FTP)	c	8,021	0	0	0	0	0
	FTP equipment running costs	c	24,246	0	0	0	0	0
	AWS Servers	d	0	36,000	45,000	45,000	45,000	30,000
	Service Desk Equipment Costs	c	10,307	0	0	0	0	0
	Equipment sub total		49,914	47,000	56,000	54,000	54,500	39,500
2. Next Generation SADIS service provision								
	WAFS 0.25 degree and IWXXM data set up.	e	0	7,000				
	IWXXM OPMET API	f		0	0	0	tbd	tbd
	Gridded data API	f		0	0	0	tbd	tbd
	SIGWX API	f		0	0	0	tbd	tbd
	Development sub total		0	7,000	0	0	0	0
3. Annual Staff Requirements								
Operating Support								
	Help Desk 0.3%	c	4,845	0	0	0	0	0
	Technical Team Leader 3.5%	c	12,998	0	0	0	0	0
	Network Systems Supervisor 7%	c	25,996	0	0	0	0	0
	First Line Support	g		4,500	4,800	5,000	5,000	5,000
	Second Line Support	h		20,000	20,500	20,500	20,500	20,500
	Third and Fourth Line Support	i		3,500	15,000	15,000	15,000	15,000
Additional Support								
	Systems Integration Team	c	5,499	0	0	0	0	0
	Message Switching Manager	c	5,499	0	0	0	0	0
	Data Traffic	c	2,171	0	0	0	0	0
	Message Switching Team	c	5,645	0	0	0	0	0
	Administrator	j	65,734	64,235	65,000	66,000	66,000	66,000
	International Aviation Management	j	8,073	7,665	8,000	8,500	8,500	8,500
	Contract Procurement and Management	j	1,737	1,560	1,600	1,600	1,800	1,800
	Invoice Administration	j	12,852	14,465	14,500	15,000	15,000	15,000
Travel Costs								
	METP-WG/MOG meetings & SCRAG	k	919	75	400	1,200	1,200	1,200
	Staff Requirement and travel sub total		151,968	116,000	129,800	132,800	133,000	133,000
Administrative costs								
	Cost of Capital	l	19,754	20,000	21,000	21,000	21,000	21,000
	Admin charges	m	311	250	650	650	650	650
Total UKMO Costs			221,947	190,250	207,450	208,450	209,150	194,150

TABLE 2: NATS and other SADIS Cost Projections until 2024 (at 2020 prices)

			Actual	FOO	Est	Est	Est	Est
			2019	2020	2021	2022	2023	2024
INVENTORY REF:	Note	DESCRIPTION						
NATS Gateway Costs								
Staff Costs								
	n	Air Traffic Services Asst.	215,000	225,000	229,000	235,000	241,000	245,000
		Engineering Staff	7,052	7,000	7,200	7,300	7,400	7,500
		Administration Staff	26,946	27,800	28,500	29,300	30,000	30,900
		Staff Costs sub total	248,998	259,800	264,700	271,600	278,400	283,400
		Maintenance	9,600	9,700	9,700	9,700	9,700	9,700
	o	T&RE	1,000	0	1,500	1,600	1,700	1,800
Cost of Depreciated Capital		Capital Investments	37,466	0	N/A	N/A	N/A	N/A
		Interest at 5.88%	2,197	0	N/A	N/A	N/A	N/A
		Total NATS Gateway Costs	299,261	269,500	275,900	282,900	289,800	294,900
CAA Administration Costs	p		4,003	1,000	1,000	1,000	1,000	1,000
ICAO Administration Costs	q		39,304	41,000	38,600	42,500	43,500	44,000
		TOTAL SADIS COSTS	564,515	501,750	522,950	534,850	543,450	534,050