

SADIS COST RECOVERY ADMINISTRATIVE GROUP

TWENTY-FOURTH MEETING

(Virtual Meeting, 19 December 2023)

ESTIMATED SADIS COSTS : 2 to 5 YEARS

(Presented by the United Kingdom)

REFERENCES

SADIS Agreement
SCRAG Reports 1-21
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
METP WG-MOG/15 Report
METP WG-MOG/18 Report
METP WG-MOG/22 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 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 2024 to 2027 based on expected trends for expenditure by the Met Office and NATS. 2022 actual costs and 2023 forecast costs are provided for comparison, as requested by the SCRAG/12 meeting.

2.2 Staff day-rates are expected to increase at a higher rate than in recent years, due to a higher inflation rate.

2.3 The new SADIS API is entering operation right at the end of 2023, and all three elements (OPMET, WAFS gridded data, and WAFS SIGWX data) should be fully operational by July 2024 when the WAFS SIGWX element is ready. Cost projections for the API elements are based on assumptions about exactly what different

organisations will download, and how quickly organisations will set up their systems to use the API, but it is hoped that they will give a good measure of likely costs.

2.4 It should be noted that the existing SADIS FTP system is not, and cannot be made to be SWIM compliant, something that is a fundamental requirement of the ICAO Global Air Navigation Plan (GANP) in its Aviation System Block Upgrades, in particular AMET-B2/4 and AMET-B3/4. These require meteorological information to be fully integrated into the SWIM environment by supporting request/reply or publish/subscribe access mechanisms.

2.5 It should be noted that even if had been possible to simply add the new, much larger WAFC gridded data sets to the current FTP, there would be a large increase in its annual operating costs, of similar magnitude (or larger) to the new SADIS API operating costs. The new WAFC London data sets are 200 times larger than the existing data sets (12GB compared to 0.07 GB for a full set), and in addition the system publishes the WAFC Washington data sets (so >400 times larger overall).

2.6 There will of course be a period of dual running with the old and new systems, and it is expected that costs for operating the SADIS FTP will decrease through time as users migrate to use the SADIS API.

2.7 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. Message Switch

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

b. AWS server running costs for SADIS FTP

The cost of operating SADIS FTP using Amazon Web Services (AWS) cloud computing reflects all the individual elements that make up SADIS.

The cost increased in 2023 as work was carried out to make the system more robust and to enable it to continue to operate until November 2028 when it is retired. In November 2023 the 1.25 hazard data sets were retired so the operating cost is expected to be lower in 2024.

Operating costs are expected to continue to decrease through 2025 and onward as more and more users migrate to use the newer SADIS API.

c. SADIS API running costs

The cost projections for each of the three SADIS API elements are shown separately. The SADIS provider has worked out likely user downloading profiles, and then forecast the number of users over time.

The costs relate to the user authentication part of the system (for which the cost relates to the number of requests for data made by the users) and then a background operating cost for the data distribution part of the system.

d. First Line Support Costs

This includes 24x7 incident handling functions (call and e-mail) provided by the Met Office Service Desk. A set figure is estimated for each year, but will ultimately depend on the actual number of incidents handled.

e. 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 table 1, but the exact figure will relate to the number of incidents handled.

f. Third and Fourth Line Support

This includes incident investigation and resolution provide by the development team that supports SADIS. 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. Support costs are increased in 2024 and 2025 as the SADIS API system will be operating in tandem with the existing SADIS FTP.

g. Administration support staff cost

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).

h. 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. The MOG meeting in 2024 is expected to be held in the United Kingdom, but future meetings could also be held away from the United Kingdom.

i. 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. It is increasing as the part of the cost that relates to satellite assets is increasing.

j. 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.

2.8 Notes on SADIS Gateway costs.

k. NATS gateway costs

The NATS SADIS Gateway Costs are as described in SCRAG19-WP/16 and were simplified for future NATS gateways costs.

l. 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.

2.6 Notes on CAA and ICAO costs

m. CAA Administration costs

This encompasses Met Authority Regulatory oversight and travel costs that relate to the WG-MOG SADIS and SCRAG meetings.

n. ICAO Administration costs are detailed in WP/8

3. CONCLUSIONS

3.1 Operating costs from the Met Office will increase significantly in 2024 as the new SADIS API system becomes operational. The new SADIS API system will modernise the SADIS provision making it SWIM compliant and will future proofing SADIS provision for many years to come. The upgrade is also necessary in order to have a system that can deliver the new much larger WAFS data sets that are being introduced at the same time.

3.2 It should be noted that 15 years ago the annual SADIS operating cost (when there was a satellite based SADIS and also the first SADIS FTP) reached a peak of GBP 680,000 per year, and operating costs have been decreasing ever since. Introduction of the new SADIS API system will increase the operating costs once more, but will also allow a much, much larger data WAFS gridded set to be made available to users, while giving them the ability to sub-set the data so that it suits their needs better, and it will be SWIM compliant.

4. ACTION

4.1 The SCRAG/22 is requested to note these provisional figures for the SADIS Costs.

TABLE 1: UKMO Cost and manpower resource projections until year 2027 (at 2023 prices)

			Actual 2022	Revised Estimate 2023	Est 2024	Est 2025	Est 2026	Est 2027
INVENTORY REF:	Note	DESCRIPTION						
UK MET OFFICE COSTS								
1. Equipment								
Not procured principally for SADIS								
message switch	a		3,000	3,000	3,000	3,200	3,200	3,400
AWS Server running costs for SADIS FTP	b		46,077	52,200	50,000	45,000	40,000	25,000
SADIS API OPMET running costs	c		-	-	15,000	20,000	22,000	24,000
SADIS API WAFS Gridded data running costs	c		-	500	38,000	44,000	46,000	48,000
SADIS API WAFS SIGWX running costs	c		-	-	1,000	4,000	5,000	5,000
		Equipment sub total	49,077	55,700	107,000	116,200	116,200	105,400
3. Annual Staff Requirements								
Operating Support								
	d	First Line Support	5,289	4,950	5,500	5,500	6,000	6,000
	e	Second Line Support	10,726	11,236	15,000	15,000	15,000	15,000
	f	Third and Fourth Line Support	3,394	13,643	25,000	25,000	20,000	20,000
Additional Support								
Administrator	g	Executive Officer	69,200	72,000	73,500	75,000	76,000	77,000
International Aviation Management	g	Aviation Manager	8,400	8,800	9,000	9,500	10,000	10,000
Contract Procurement and Management	g	Senior Procurement Officer	1,695	1,780	2,000	2,000	2,200	2,500
Invoice Administration	g	Finance Officer & Business Acct	12,670	13,500	14,000	14,500	15,000	15,500
Travel Costs								
	h	METP-WG/MOG meetings & SCRAG	0	2,000	500	1,200	1,200	1,200
		Staff Requirement and travel sub total	111,374	127,909	144,500	147,700	145,400	147,200
Administrative costs								
	i	Cost of Capital	19,024	19,800	20,000	21,000	22,000	22,000
	j	Admin charges	89	201	400	400	400	400
		Total UKMO Costs	179,564	203,610	271,900	285,300	284,000	275,000

2 TABLE 2: NATS and other SADIS Cost Projections until year 2027 (at 2023 prices)

			Actual 2022	Revised Estimate 2023	Est 2024	Est 2025	Est 2026	Est 2027
INVENTORY REF:	Note	DESCRIPTION						
NATS Gateway Costs								
Staff Costs								
Operational Staff	k	Air Traffic Services Asst.	235,000	256,525	261,699	276,092	279,682	283,597
Engineering Staff	k	Maintenance Engineer	7,300	8,669	8,624	9,098	9,217	9,346
Administration Staff	k	Administration Officer	29,300	35,260	36,387	38,388	38,887	39,432
		Staff Costs sub total	271,600	300,454	306,710	323,578	327,786	332,375
	k	Maintenance	9,700	10,209	10,745	11,145	11,281	11,397
	l	T&RE	0	0	1,684	1,747	1,768	1,786
		Total NATS Gateway Costs	281,300	310,663	319,139	336,470	340,835	345,558
3	m	CAA Administration Costs	980	0	1,000	1,000	1,000	1,000
4	n	ICAO Administration Costs	24,018	32,000	29,804	30,000	30,000	30,000
		TOTAL SADIS COSTS	485,862	546,273	621,843	652,770	655,835	651,558