SADIS COST RECOVERY ADMINISTRATIVE GROUP

TWENTIETH MEETING

(Gatwick, UK, 27th November 2019)

SADIS AWS running costs
(Presented by the United Kingdom)

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

1.   INTRODUCTION

1.1.   At the end of 2019 the SADIS FTP on-premise system will be migrated to use cloud-based infrastructure. This is being carried out for several reasons: to prepare SADIS ftp for integration with the next generation SADIS system that will become operational in November 2022, to take advantage of the benefits that cloud technology brings (scalability and reliability), and in line with the SADIS Provider's own requirements that encourage the use of cloud-based technology.

1.2.   The use of Amazon Web Services (AWS) cloud computing means that there is a move away from the fixed price operating cost model that the on-premise SADIS provision offers. This paper explains the changes.

2.   DISCUSSION

2.1.   Running a service using AWS is made up of three core parts:
        a) The server running costs;
        b) The storage costs for the data held on the server; and
        c) A cost for users downloading data (data egress charges)

        Parts a) and b) are generally fixed and can be predicted. For 2020 this will amount to approx. GBP 5000 per year. This compares extremely favourably to the GPB 24,500 it costs to run SADIS on-premise.

2.2.   The cost for data downloads is currently USD 0.09 (GBP 0.07) per GB. Based on the current volumes of data of 75GB per day, this equates to approx. GBP 2000 per year, considerably less than the on-premise internet charges.

2.3.   In assessing running costs for SADIS the increase in the number of users needs to be considered to estimate the download cost in future years. A typical user downloads approx. 0.5GB a day, or 185GB a year. This equates to approx. GBP 13 in additional charges for every new user. The cost projections shown in WP10 include 6 new users joining SADIS each year, until 2023 after which user numbers will decline due to the next generation SADIS system becoming operational and users migrating across.

2.4.   In November 2020 some higher resolution hazard data sets will be added to SADIS, and these will be considerably larger than the current files. It is expected that a complete set of these new files per model run will be approx. 300MB, which is 1.2GB per day. This equates a cost of approx. GBP 32 per year.

There are 170 active users of SADIS, and it is unlikely that all users will start downloading this new data straight away. Therefore the following projections have been worked into the costs in WP10

Year	Number of users downloading new data sets	Data download costs (GBP)
2020 (2 months only)	50	270
2021	120	3,850
2022	160	5,120
2023	100*	3,200
2024	50*	1,800

* these figures reflect the migration of users across to the next generation SADIS system.

2.5.   It is worthwhile noting that even with the additional data costs described in 2.3 and 2.4, this compares favourably with the internet connection charges that were attributable to the on-premise SADIS.

Estimated download costs are as follows

- 2020: GBP 2,400
- 2021: GBP 6,000
- 2022: GBP 7,200
- 2023: GBP 5,000

2019 on-premise internet charges are anticipated to be GBP 8,050.

2.6.   Another important consideration for running SADIS on AWS is the impact that inadvertent misuse of the system would have on the data download costs. In 2018 there were several instances in which unusually high data download volumes were detected, and whilst they had no impact on the on-premise operating costs they would have had a financial implication on SADIS.   These are modelled below:

Incident description	Volume of data downloaded	What this would cost in AWS (GBP)
370GB of data downloaded in a single week, plus a couple of days to resolve issue.	475GB	33
120GB of data downloaded in a week, with problem persisting for 3 months	1500GB	105
125GB of data downloaded in a single week, plus a couple of days to resolve issue.	290GB	21

2.7.   This raises the question of whether the responsible user/state should pick up this cost, or whether it should be incorporated into the invoices of all SADIS States.

2.8.   Due to the uncertainty in SADIS download costs a 15% contingency has been included within the cost projections in WP10.

3.   CONCLUSION

3.1.   The use of AWS for SADIS provision provides a variety of benefits in the operation of SADIS, one of which is an overall reduction in operating costs in the order of GBP 20,000 per year.

3.2.   The group is invited to consider how any misuse of the SADIS system which incurs a significant additional download charges should be dealt with, as described in paragraph 2.7, and formulate an action if it is deemed to be appropriate.

4.   ACTION

4.1.   The group is invited to note and discuss the content of this paper, and if necessary, formulate an action that relates to 3.2.

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