



Appendix K

Performance Matrix of SAT CNS Infrastructure and Systems

State: _____ ANSP: _____ Quarter: _____ Year: _____ FIR: _____

SYSTEMS		Performance Indicators			COMMENT
		A (%)	MTBF (H)	MTTR (H)	
Communication	VHF				Separate the individual frequencies and calculate for their performance matrix
	HF				calculate the availability of all the HF frequencies that have been publish (and in total have a single Availability)
	AIDC/OLDI				AIDC should have a distinct model, as system efficiency is hard to assess.
	CPDLC				State can use the data obtain from SITA
	AFTN/AMHS				
	VCS				
Surveillance Navigation	VOR				
	DME				
	NDB				
	GNSS				
	SSR				
	ADS-C				
	ADS-B				
	MLAT				

Indicators:

A – Facility

Availability (%)

MTIS - Mean Time

Inoperative Service (Minutes)

MTBF - Mean Time Between

Service Failures (hours)

TTOS - Total Time Out

Service-: Sum of the times

that the service was

inoperative. (hours)

A – Service Availability (SA): Is the service availability during a quarter.

$$A = \frac{TT - TTOS}{TT} \times 100$$



TT: Total Time of a quarter (90 days = 2160 hours)

MTIS – Mean Time Inoperative Service (MTIS): Is the average time that the service was inoperative each time the service failure occurred. For example, if during a quarter the service is inoperative for 2 times during 20 min and 30 min, respectively, the MTIS would be 25 Min.

MTBF – Mean Time Between Failures (MTBSF): Is the average time between service failures during operation. For example, if during a quarter (90 days = 2160 hours) the service is inoperative for 3 times and the times between failures are 20 days (480 hours) and 30 days (720 hours), respectively, the MTBF are 25 Days (600 hours).

Mean time between failures (MTBF). The actual operating time of a facility divided by the total number of failures of the facility during that period of time.

$$\text{MTBF} = \frac{\text{Actual operating time}}{\text{Number of failures}} \text{ (Attachment F to *Annex X Volume 1* of the ICAO Convention)}$$

Note. — The operating time is in general chosen so as to include at least five, and preferably more, facility failures in order to give a reasonable measure of confidence in the figure derived.

TTOS – Total Time Out Service (TTOS): Sum of the times that the service was inoperative.

MTTR – Mean Time to repair = TTOS -Total Time Out Service divided by the number of failures

$$\text{MTTR} = \frac{\text{Total Time Out Service}}{\text{Number of failures}}$$

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