INTERNATIONAL CIVIL AVIATION ORGANIZATION

APIRG 13 MEETING
(Sal, 25 – 29 June 2001)

Agenda item : 4.5

Air navigation issues : CNSD/ATM planning and implementation

World Geodetic System (WGS-84) Maintenance Organization

(Presented by SENEGAL)

SUMMARY

ASECNA undertook between 1996 and 1998, the « WGS-84 » standardization of the major airports open to commercial traffic in 15 member States, and 3 associated States. The WGS-84 facility stemming therefrom is composed of 1000 points distributed across these 18 States. This paper gives a brief insight into the steps taken by ASECNA to ensure an efficient maintenance of the CNS/ATM tool, and aims at ensuring the sharing of this experience by the meeting.

I – OBJECTIVES OF WGS-84 MAINTENANCE

In line with the WGS-84 manual, the maintenance of ASECNA's WGS-84 equipment consists in ensuring on a permanent basis :

- the integrity in time of the topometric equipment in place ;
- the safeguard activities as a result of the modifications made to the facilities : deterioration, destruction, …;
- the taking into account of new facilities : measurements of new points of infrastructure, obstacles or radioelectric aid at airports already equipped with WGS-84 (evolutive maintenance) ;
- the measurements at new airports and new radioelectric aid, of new obstacles.
- The keeping and updating of the computer files of WGS-84 points;

II – MISSIONS OF WGS-84 MAINTENANCE

- To centralize, manage and file information relating to WGS-84 points;
- To define and programme upkeep and safeguard works ;
- To undertake the tracing, determination and calculation of WGS-84 coordinates ;
- To programme field interventions ;
- To update documentary information, particularly the computer file relating to WGS-84.

III– ORGANIZATION OF THE MANAGEMENT OF WGS-84 POINTS

III – 1 – Human resources

The stragegy of management in real time as well as the geographic scope of the ASECNA network to be maintained (network map in annex 1), have led to the establishment of the following organization :

- An Office responsible for WGS-84 maintenance located in DAKAR (DTTM), drawing on ASECNA's national Representations ;
- A WGS-84 maintenance team at the level of each ASECNA Representation, comprising the WGS-84 local correspondent and the Civil engineering infrastructure Departmental Chief ;
- An early warning procedure based on a rapid circulation of information transmitted by information files to be consulted and transmitted to the head office by local teams :

    1) VISITING FILES
    2) INVENTORY FILES
    3) EVENT FILES.

- An annual programme relating to the inspection of the points of each airport, and particulary support networks.

In sum, any partial or total deterioration, any change of facility or new element within an installation should be immediately updated with regard to the relevant documentary information relating to the imperatives of air navigation.

III – 2 – Computerized management facilities

Our next WGS-84 server will make it possible to centralize / manage the data bases relating to ASECNA's WGS-84 points and those of the States for which we provide some services in this regard.

IV– ACTION REQUIRED

The meeting is invited :

– Take note of the activities implemented by ASECNA within the framework of the maintenance of WGS-84 points.
– Recommend , where necessary, the adoption of the ASECNA approach to the permanent monitoring of the integrity of WGS-84 points, inter alia, the putting into practive of the three (3) maintenance files : visiting file – WGS-84 M1, Inventory file – WGS-84 M2, Event file – WGS-84 M3.
– Recommend that ASECNA's activities with regards to WGS-84 maintenance, feature in the body of the final report of this meeting in order to enlighten the aeronautical community on this type of activity which is also undertaken in the AFI region.

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FILE WGS 84 M1

COUNTRY :

WGS 84 POINTS VISITING FILE

AIRPORT: **CODE:**

I – VISUAL OBSERVATION

(support network and ground infrastructure points)

Point number						**Place of installation at airport (B.T, Runway, VOR, ...)**	
Date of visit	/ /						
Visit n°							

		yes	no				
Benchmark/Paint	Existent			State		Good condition	B
						Totally destroyed	D
Disc	Existent			State		Displaced	P
						Partially destroyed	R

II – COMMENTS

	yes	no
Does the point seem intact to you ?		

If the point does not seem intact to you, briefly describe its condition :

III - COMPOSITION OF THE TEAM CONDUCTING THE VISIT

FAMILY NAME First name	**Function**	**Signature**

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FILE WGS 84 M2

COUNTRY :

WGS 84 INVENTORY POINTS

AIRPORT: **CODE :**

POINT CODE	POINT DESIGNATION	LATITUDE WGS 84	LONGITUDE WGS 84	ALTITUDE WGS84	OBSERVATION ON THE CONDITION OF THE POINT
1	2	3	4	5	6

Key:

Column 1: Code physically registered on point WGS84
Column 2: Designation of the place where point WGS is located
Column 3: Latitude WGS 84 of the point
Column 4: Longitude WGS 84 of the point
Column 5: Altitude WGS 84 of the point
Column 6: Observation on the state of Integrity of the point

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FILE WGS 84 M3

COUNTRY

EVENT FILE

AIRPORT: **CODE:**

Date **Ref. n°**

Issue monitored by :		**Service :**	
Element concerned (Code)		**Event***	
Description of the event (written, sketch, …)			
Enclosure (Plan of airport, visiting file…) :			
Date and signature of officer-in-charge :			

1) Number the enclosures

2) ***** :

- Deterioration **A**
- Destruction **D**

Date and Signature of officer-in-charge