



Agenda Item 3: Performance framework for Regional Air Navigation Planning and Implementation

3.1 Global, inter-regional and intra-regional activities concerning air navigation systems in the CAR/SAM Regions

AUTOMATED SYSTEM FOR METEOROLOGICAL OBSERVATION MANAGEMENT AND RECORD (WEBMET)

(Note presented by Brazil)

SUMMARY

This information paper aims to present the Automated System for Meteorological Observation Management and Record (WEBMET), used by meteorological stations in Brazil.

1. Introduction

1.1 The Automated System for Meteorological Observation Management and Record (WEBMET) aims to automate the recording of data observed at the Surface and Altitude Weather Stations, increasing the availability of data stored at the Climatological and International OPMET Data Base in Brasilia and in the Neural Network.

1.2 The main feature of WEBMET is to minimize records and formats errors of meteorological messages sent to the Climatological and International OPMET Data Base in Brasilia by applying the rules given in the WMO 306 and by the Standards established in the ICAO Annex 3.

1.3 The WEBMET System was developed by Atech, a Brazilian company that participates, together with DECEA, in the project for the evolution of the current systems to the new Global ATM Operational Concept.

2. Purpose

2.1 The WEBMET System provides an automated, secure and fast transmission of meteorological data collected at the Surface and Altitude Weather Stations to the Climatological Data Bank (BDC).

2.2 It generates from the data recorded in the Surface Weather Stations a XML format for the Artificial Neural Network destined to the tendency forecast for visibility and ceiling in the selected airports.

2.3 From the data collected at the Surface Weather Stations, the METAR, SPECI and SYNOP meteorological messages are generated automatically to be complemented and sent to the Operational Meteorological (OPMET) Information Databank..

Fig. 1 - Surface Weather Observation Record

2.4 The system can import TEMP and PILOT messages from the radiosonde stations and send them to the Brasilia OPMET Bank.

Fig 2 - Import screen for TEMP and PILOT

2.6 The WEBMET System works on a hardware platform consisting of Web servers that provide services for interfacing with the end users, and application servers that are responsible for the data handling following the rules for observation and meteorological messages codification.

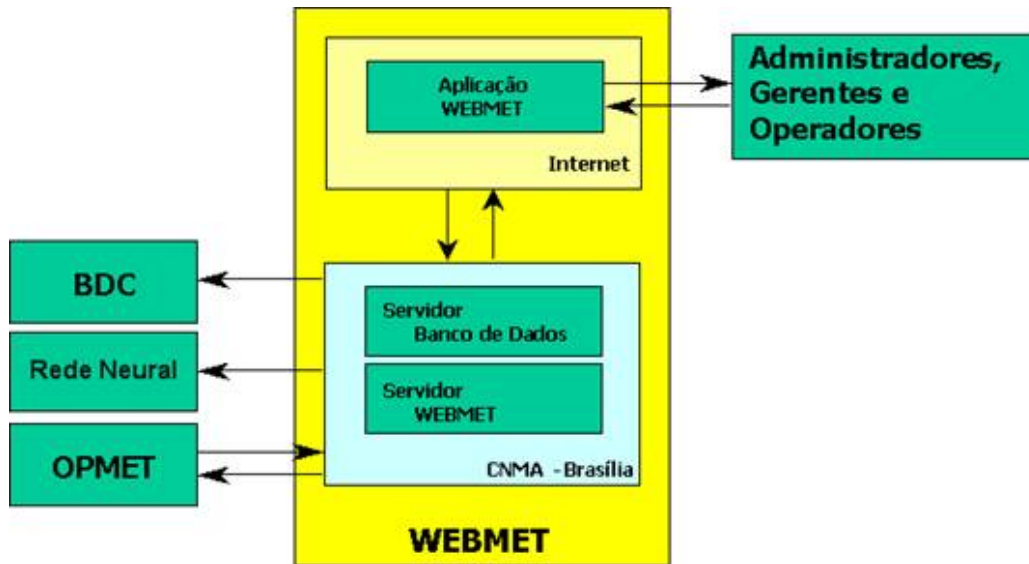


Fig 3 - WEBMET System Context Diagram

2.7 Access to the WEBMET System can be done through any Surface and Altitude Weather Station connected to the Internet and with the facilities of an Internet browser, if previously enrolled in the Management Server to access the system.



Fig 4 - WEBMET System Access Screen

3. Operational Description

3.1 The WEBMET was developed in an environment compatible with the Internet, has easy operation and features for viewing, editing and transmitting data, creating graphics, searching files and standard screens.

3.2 A tool that can work as means of communication between the meteorological units, that may provide high availability of operation, create a user-friendly environment, allow the extraction of backup, issue statistical reports and provide security for the registry and transmission of meteorological data.

3.3 WEBMET System Screens.

3.4



The screenshot shows a web browser window titled "Vento" with a close button in the top right corner. The main content area is titled "Registro de Observações de Vento" and contains a form with the following fields:

- Pista: A dropdown menu with the value "10" selected.
- Direção: An empty text input field.
- Velocidade: A text input field followed by the unit "Kt".
- Rajada: A text input field followed by the unit "Kt".
- Vento Variável: A checked checkbox.
- VNT VND: Two text input fields separated by a forward slash.

At the bottom of the form are two buttons: "Gravar" (Save) and "Cancelar" (Cancel).

Fig 5 - Record of Wind Observations.

Cadastro de Estação EMS			
Indicador da Localidade:	SBGL		
Número Sinótico:	83746		
Indicador de Área:	21		
Nome da Localidade:	GALEAO		
Estado:	RJ		
Instituição:	DECEA		
Status:	<input checked="" type="radio"/> Ativada <input type="radio"/> Desativada		
Regional DECEA:	Grupo Dacta SJC	Selecionar	
Regional INFRAERO:	Grupo Infra SJC	Selecionar	
Tipos Meteorológicos:	Nome	Selecionar	
	METAR	Remover	
	SPECI	Remover	
	SYNOP	Remover	
Latitude:	22°48'S	Longitude:	043°15'W
Altitude da Estação:	9 Metros	Declinação Magnética:	10°W
Converter UTC somam-se:	4 Horas	H24:	<input checked="" type="checkbox"/>
Hora local Correspondente ao Meridiano:	45°W	Tipo Funcionamento:	Cabeçeira
Hora de Abertura:	0000 Horas	Hora de Fechamento:	2359 Horas
Pressão Mínima:	900.0 hPa	Pressão Máxima:	1099.0 hPa
Mínimos Operacionais Visibilidade abaixo de:	0400 Metros	Mínimos Operacionais Teto Abaixo de:	030 Metros
Classe:	1		
Tipo de equipamento para medir precipitação:	Pluviógrafo		
Pista:	Descrição	Pista Principal	Adicionar
	10	Sim	Visualizar Remover
	28	Não	Visualizar Remover
Tipo Nuvem:	Tipo Nuvem	Adicionar	
	BAIXA	Visualizar	Remover
	MEDIA	Visualizar	Remover
	ALTA	Visualizar	Remover
<input type="button" value="Remover"/> <input type="button" value="Gravar"/> <input type="button" value="Cancelar"/>			

Fig. 6 - Surface Meteorological Observation Register

Pista X

Pista Principal?:

Descrição:

Temperatura

Temperatura

Máxima: °C Mínima: °C

Bulbo Seco

Máximo: °C Mínimo: °C

Bulbo Úmido

Máximo: °C Mínimo: °C

Informar quando a temperatura variar mais de: °C

Velocidade

Velocidade Máxima do Vento: Kt Rajada máxima do Vento: Kt

RVR

Valor Mínimo do RVR: Metros Valor Máximo do RVR: Metros

Posição do RVR:

Fig. 7 – Register of Equipments on the Runways with Surface Weather Observation Station

Cadastro de Estação EMA

Indicador da Localidade:

Número Sinótico:

Nome da Localidade:

Indicador de Área:

Estado:

Instituição:

Status: Ativada Desativada

Regional:

Infraero:

Latitude: Longitude:

Altitude da Estação: Metros

Tipo Meteorológico:

Nome	Selecionar
TEMP	<input type="button" value="Remover"/>
PILOT	<input type="button" value="Remover"/>

Fig. 8 - Register of Altitude Weather Station

4. Conclusion

With the deployment of the WEBMET System for the Brazilian Aeronautical Meteorological Service, it was obtained a significant improvement in the integration process of climatological data in the BDC, resulting in increased reliability and availability of OPMET information to users, allowing, thus, a great progress in the quality when providing the surface and altitude observations services.

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