



ICAO

UNITING AVIATION

AMBEX DATA COMMUNICATION FACILITIES



Workshop on AMBEX Scheme

AMBEX Data Communication Facilities

MET PROJECT 5: Removing Deficiencies related to the Missing OPMET Data in the AFI Region

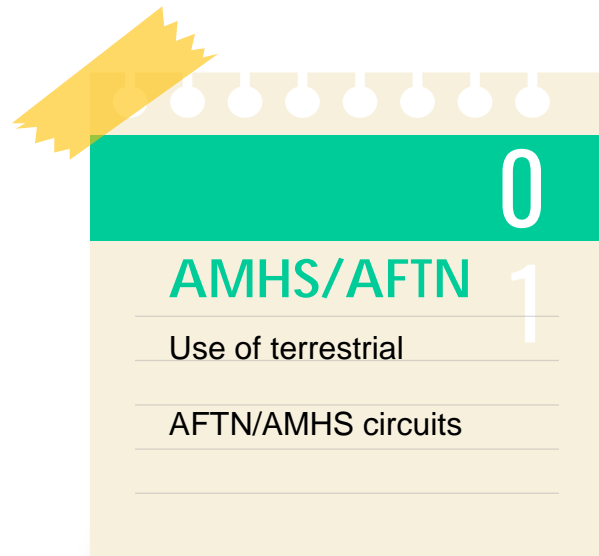
By Giscard Destin PANDZOU

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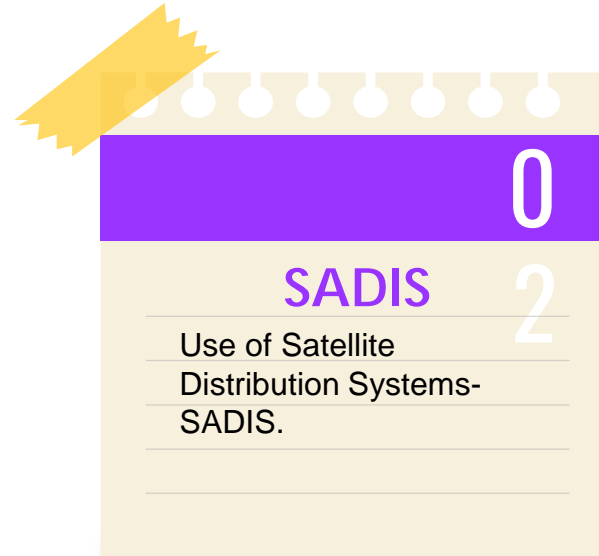


AMBEX DATA COMMUNICATION FACILITIES

According to Annex 3, 11.2, "telecommunication facilities used for the exchange of operational meteorological information should be the aeronautical fixed service". The use of the AFS (Aeronautical Fixed Service) for the OPMET exchange encompasses two components:



0
AMHS/AFTN 1
Use of terrestrial
AFTN/AMHS circuits



0
SADIS 2
Use of Satellite
Distribution Systems-
SADIS.

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AMBEX Data Communication Fac

1. Use of the AFTN/AMHS

- In the AMBEX Scheme AFTN/AMHS circuits are used for collection of the OPMET messages by the AMBEX centres and for regional and inter-regional exchanges of OPMET bulletins. The access to the regional OPMET data banks (request-reply service provided by the RODBs) is also provided through the AFTN/AMHS.
- OPMET bulletins transmitted via the AFTN/AMHS shall be encapsulated in the text part of the AFTN/AMHS message format (**Annex 3, Appendix 10, 2.1.4 of AMBEX Manual**).
- Transit times of the AFTN/AMHS messages and OPMET bulletins are specified in Annex 3, (**Appendix 10, 1.1 of AMBEX Manual**).

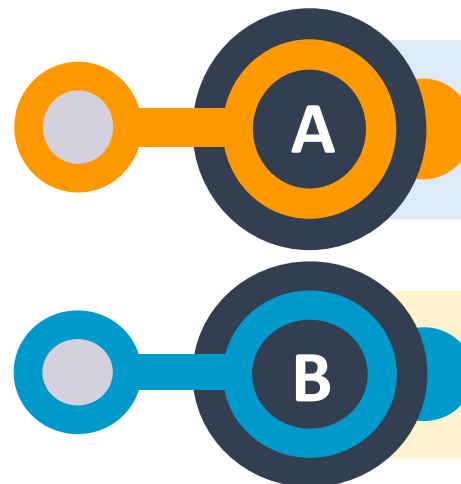
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AMBEX Data Communication Facilities

1. Use of the AFTN/AMHS

OPMET bulletins via AFTN/AMHS should use the following priority indicators :



A FF: SIGMET, AIREP SPECIAL, VAA, TCA and amended TAF (cf. Annex 10 Vol II, 4.4.1.1.3) 

B GG: TAF, METAR and SPECI (cf. Annex 10 Vol I, 4.4.1.1.4). 

Filing times of OPMET bulletins shall comply with **Annex 3, Appendix 10, 2.1.2 of AMBEX Manual**

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AMBEX Data Communication Facilities

2. Use of the Satellite Distribution System for Information relating to Air Navigation (SADIS)

- SADIS satellite broadcast is used by the authorized users in the States for receiving global OPMET Data.
- FASID Table MET 7 of the AFI regional plans contains a list of authorized users for the SADIS broadcast.

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AMBEX Data Communication Facilities

3. Use of the Internet

- Internet may be used to the dedicated internationally agreed circuits for exchange of meteorological data. An internet based secure FTP service to SADIS has been operational since 2010.
- Both RODBs provide Internet based facilities for retrieval of OPMET information.

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AMBEX Scheme's Addressing Plan

1. Management of OPMET Exchange under the AMBEX Scheme

a. OPMET Bulletins Update Procedure

Information changes brought to AMBEX bulletins shall be disseminated to all AMBEX centres and national OPMET centres (NOC) concerned well in advance in order to allow these centres to introduce the necessary changes to their message handling systems (AMHS/AFTN). In this regard, a lead time period of two months (or two AIRAC cycles) is considered appropriate.

The AMBEX centre planning the change, shall send a notification by e-mail or fax to the ICAO Office, Dakar or Nairobi, with copy to all AMBEX Focal Points. The notification shall include detailed information of the changes and the proposed time schedule. The Regional Office shall inform all other ICAO Regional Offices of the changes to be introduced and the effective date of implementation.

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AMBEX Scheme's Addressing Plan

1. Management of OPMET Exchange under the AMBEX Scheme

a. OPMET Bulletins Update Procedure

All requests by users for changes to AMBEX bulletins should be addressed to the ICAO Regional Office concerned. The Regional Office shall carry out the necessary coordination with the States and AMBEX centres concerned. The duration of the coordination process shall be minimized so that the period between the user request and the implementation of the change (if agreed) shall normally be less than 3 months.

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AMBEX Scheme's Addressing Plan

1. Management of OPMET Exchange under the AMBEX Scheme

b. Quality Management of OPMET Exchange under the AMBEX Scheme

i. Objectives and Scope

❖ Objectives :

Develop a management system that provides general guidance on procedures applied to OPMET exchange, which includes quality control aspects and introduces a non-real-time monitoring for OPMET exchange.

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AMBEX Scheme's Addressing Plan

1. Management of OPMET Exchange under the AMBEX Scheme

b. Quality Management of OPMET Exchange under the AMBEX Scheme

i. Objectives and Scope

❖ Scope :

Quality Control	Data quality control applies to OPMET validation and correction during data processing and during preparation of messages.
OPMET Monitoring	Monitor and assess the performance indicators for the scheduled OPMET data.

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AMBEX Scheme's Addressing Plan

1. Management of OPMET Exchange under the AMBEX Scheme

c. Quality Control – General Requirements

Quality control (QC) consists of examination of OPMET data at NOCs, AMBEX Centres and RODBs to check the messages for formatting and coding errors, as well as, for time and space consistency.

OPMET data shall be checked in real time or as close to it as possible, at the first point, i.e., the originator, which may be: a meteorological station, an aerodrome meteorological office or a meteorological watch office, etc. Errors may occur during coding or transcription of meteorological messages by the observer or forecaster. The originating office shall apply quality control procedures during data processing and preparation of messages, in order to eliminate the main sources of errors.

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

Each AMBEX bulletin shall have a WMO abbreviated heading in accordance with WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS. The symbolic form of the WMO abbreviated heading is as follows:

TTAAii

CCCC

YYGGgg

(BBB)

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

❖ TTAAii

- **TT:** This group is used in accordance with WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS, Attachment II-5.

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

❖ TTAAii

TT – Data type designator, used for OPMET data as follows :

Data Type	Abbreviated Name	WMO Data Type Designator TT
Aerodrome reports	METAR SPECI	SA SP
Aerodrome forecasts	TAF: 24 and 30 hour 9 and 12 hour	FT FC
SIGMET information	SIGMET SIGMET for TC SIGMET for VA	WS WC WV
Volcanic ash and tropical cyclone advisories	VAA TCA	FV FK
Air-reports	AIREP	UA
Administrative	ADMIN	NO

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

❖ TTAAii

- **AA** : Geographical designator comprising two letters. according to WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS, Attachment II-5, Table C1. The following principles shall apply:
 - ✓ For AMBEX bulletins containing OPMET data from a single State or territory, the AA designator should be chosen from Table C1, Part I – Country or territory designators;
 - ✓ For AMBEX bulletins containing OPMET data from more than one State or territory, a suitable AA designator shall be chosen from Table C1, Part II – Area Designators of **Manuel AMBEX**.

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

❖ TTAAii

OPMET messages prepared by offices other than BCCs for transmission to BCCs, the following WMO geographical designators (AA) shall be used.

In bulletins prepared by BCCs, the following geographical designators shall be used:

BCC	AA	BCC	AA
Addis Ababa	EA	Nairobi	EA
Antananarivo	IO	Niamey	AO
Brazzaville	AM	Pretoria	AP
Dakar	AO		

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

❖ TTAAii

- ii: Number used to differentiate two or more bulletins which contain data in the same code and which originate from the same geographical area and from the same originating centre. It shall be a number with a maximum of two digits. The IROGs may use numbers 36 to 38. The numbers 31 to 35 shall be used in AMBEX bulletins for purposes other than those of IROG functions. IROGs shall use numbers 36 to 39.
- ❖ **CCCC** : ICAO location indicator of the centre preparing the AMBEX bulletins (BCCs) or AMBEX messages (offices other than BCCs).

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

❖ **YYGGgg**: Date-time group. To be used as follows:

- **YY**: Day of the month
- **GGgg**: hours and minutes.
- ✓ For METAR bulletins/messages: the standard time of observation in UTC.
- ✓ For TAF bulletins: the full hour in UTC (the last two digits shall be 00) preceding the transmission time.
- ✓ For all other bulletins/messages - the time of compilation in UTC.

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

- ❖ **BBB**: Optional group indicating an amended, corrected or delayed bulletin.

An abbreviated heading defined by TTAAii CCCC YYGGgg shall be used only once. Consequently, if this abbreviated heading has to be used again for an addition, a correction or an amendment, it shall be mandatory to add an appropriate BBB indicator, which shall be added after the date-time group. The indicator BBB shall be used as defined below:

- ✓ RRX: for delayed routine meteorological messages/bulletins;
- ✓ CCX : for corrections to previously relayed messages/bulletins;
- ✓ AAX : for amendments to TAF messages/bulletins;
- ✓ Pxx : for segmenting a large set of information into several bulletins.

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

- ❖ **BBB**: Optional group indicating an amended, corrected or delayed bulletin.

Note 1:

The “x” above is an alphabetic character of A through X, indicating the sequential number of the irregular bulletin of certain type. For instance, for amended TAFs, AAA is used for the first amendment, AAB for the second, AAC for the third, etc; for delayed METARs or TAFs, RRA is used for the first delayed message, RRB for the second, etc.; and, for corrections to any OPMET bulletin, CCA is used for the first correction, CCB for the second, etc

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

a. Explanation of Symbols

❖ **BBB**: Optional group indicating an amended, corrected or delayed bulletin.

Note 2:

The use of the third letter A, B, C, etc. permits differentiation between bulletins/messages with the same type of information of the original bulletin/message. For example, assuming that a certain bulletin had the following abbreviated heading: "FTA031 DIAP 281000", a delayed bulletin containing TAF(s) which are missing from the original bulletin will bear the heading: "FTA033 DRRN 281000 RRA"; and a second delayed bulletin, containing additional missing TAF(s) will bear the heading: "FTA031 DIAP 281000 RRB".

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AMBEX Scheme's Addressing Plan

2. WMO abbreviated headings *(for use in AMBEX bulletins and messages)*

Note 3 :

The following data designators should be used by BCCs:

BCC	TAF	METAR
Addis Ababa	FTEA31 HAAB FTEA39 HAAB	SAEA31
Antananarivo	FTIO31 FMMI FTIO39 FMMI	SAIO31 SAIO34
Brazzaville	FTAM31 FCBB FTAM39 FCBB	SAAM31 SAAM34 SAAM36
Dakar	FTAO30 GOOY FTAO35 GOOY	SAAO30 SAAO31 SAAO32 SAAO33 SAAO34
Pretoria	FTAP32 FAOR FTAP38 FAOR FTAP39 FAOR	SAAP31 SAEA32 SAEA35 SAEA33 SAAP34 SAEA35 SAEA36 SAEA37
Nairobi	FTEA32 HKNA FTEA39 HKNA	SAEA32 SAEA35
Niamey	FTAO20 DRRN FTAO24 DRRN FTAO26 DRRN	SAAO20 SAAO21 SAAO22 SAAO23 SAAO24

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AFI Regional OPMET data banks and SIGMET Requirements

The AFI Regional OPMET Data Banks (RODBs) and the AFTN/AMHS addresses to be used for direct access to the banks are shown below:

BRDO	Adresse AMHS/RSFTA	Centres de Responsabilité AMBEX
Dakar	GOOYYZYZ	Brazzaville/FCBB Dakar/GOOO Niamey/DRNN
Pretoria	FAPRYMYX	Addis Ababa/HAAB, Antananarivo/FMMI, Cairo/HECA Pretoria/FAPR (Johannesburg/ (FAOR)**) Nairobi/HKNA ** BCC located at South African Weather Service HQ



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AMBEX DATA COMMUNICATION FACILITIES



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North American
Central American
and Caribbean
(NACC) Office
Mexico City

South American
(SAM) Office
Lima

ICAO
Headquarters
Montréal

Western and
Central African
(WACAF) Office
Dakar

European and
North Atlantic
(EUR/NAT) Office
Paris

Middle East
(MID) Office
Cairo

Eastern and
Southern African
(ESAF) Office
Nairobi

Asia and Pacific
(APAC) Sub-office
Beijing

Asia and Pacific
(APAC) Office
Bangkok



THANK YOU