



INTERNATIONAL CIVIL AVIATION ORGANIZATION

A United Nations Specialized Agency

CONTRIBUTION OF OPMET TO THE ENHANCEMENT OF AIR NAVIGATION SAFETY

**ICAO WESTERN AND
CENTRAL AFRICAN OFFICE, DAKAR**

**Workshop on the mitigation of loss of Operational
messages (Flight Plans, NOTAMs & OPMETs)**

Dakar, Senegal, 12-14 May 2014

SUMMARY



- 1. Types of OPMET Exchanged in the AFI Region;**
- 2. OPMET data availability requirements;**
- 3. Time critical, non-time critical MET data;**
- 4. OPMET Exchange - AMBEX Scheme;**
- 5. OPMET Monitoring Results;**
- 6. Proposed solutions.**

1. Types of OPMET Messages Exchanged in the AFI Region



TT	Type de Message	Regular	Non-regular
SA	METAR	X	
SP	SPECI		X
FT	24/36 HR TAF	X	
WC	SIGMET for Tropical Cyclone		X
WV	SIGMET for Volcanic Ash		X
WS	SIGMET for other MET phenomena		X
UA	SPECIAL AIREP		X
FV	Volcanic Ash Advisory		X
FK	Tropical Cyclone Advisory		X

2. OPMET Data Availability Requirements



- ❑ In accordance with ICAO Annex 3, Appendix 10 para 1.1, the required transit times of AFTN MET messages and bulletins containing OPMET information should achieve transit times of **less than** :
 - **5mn** for SIGMET, VAA, TCA, SP AIREP, Amend-TAF, Amend-SIGWX and Amend-upper Wind/Temp/Humid forecasts in abbreviated plain-language and METAR/TAF/SPECI received from 0–900 km radius.
 - **10mn** for METAR/TAF/SPECI received from more than 900 km radius.

2. OPMET Data Availability Requirements



- ❑ In accordance with ICAO Annex 3, Appendix 10 para 2.1.2, the filing times of METAR and TAF bulletins are as follows:
 - **Not later than 5** minutes after the actual time of observation. For METAR; and
 - **not earlier than 1** hour prior to the beginning of TAF validity period for TAF.

3. Time Critical, Non-time Critical of MET Messages



□ TIME-CRITICAL METEOROLOGICAL MESSAGES

1. In accordance with ICAO Doc 9855, para. 4.2, the following MET information will be referred to as time-critical MET information, and it should be distributed via the AFS and received in a timely manner:
 - a) SIGMET information;
 - b) Special AIREP
 - c) *AIRMET messages (not distributed in the AFI region);*
 - d) VAA;
 - e) TCA; and
 - f) Amend-TAF.

3. Time Critical, Non-time Critical MET Messages



2. In accordance with ICAO Annex 10 — *Aeronautical Telecom, Volume II*, the above listed MET information is also classified under “flight safety messages” category.

□ NON-TIME-CRITICAL METEOROLOGICAL MESSAGES

- In accordance with ICAO Doc 9855, para. 4,3, the following MET information is considered non-time-critical:
 - a) TAF, METAR and SPECI;

3. Time Critical, Non-time Critical MET Messages



- b) SIGWX charts and Upper wind/temp/humid forecasts provided by the WAFCs;**
- c) VAG in (VAA in graphical format) provided by the VAACs;**
- d) *GAMET area forecasts (not distributed in the AFI region); and***
- e) *ROFOR (route forecasts - not distributed in the AFI region).***

4. OPMET Exchange –AMBEX Scheme



- ❑ **2 telecom. means used:**
 - ✓ **AFTN:** for ground-ground exchange; and
 - ✓ **SADIS:** for OPMET distribution by London WAFC through satellite broadcast and SADIS FTP.

- ❑ **In the AFI region, OPMET are exchanged through the AFI Meteorological Bulletin Exchange (AMBEX) scheme.**

AMBEX Scheme – Main Objectif



- ❑ **The main objective of the AMBEX Scheme is to:**
 - ✓ **effectively and economically exchanges OPMET information in the AFI and its adjacent ICAO regions to meet users needs ; and**
 - ✓ **effectively implement ICAO SARP on OPMET related to Annexes 3 and 10, and the relevant provisions in the AFI ANP (Doc 7474).**

Historical



- The AMBEX scheme was established by APIRG in August 1986;
- AMBEX scheme was initially intended only for TAF exchanges;
- AIREPs and METAR were added to the scheme in April 1998 (APIRG/11 Conc. 11/22) and June 2001 (APIRG/13, Conc. 13/66) respectively.
- Volcanic Ash Advisory (VAA) and tropical Cyclone (TCA) has been added in this edition in June 2009 during its 7^e édition.

AMBEX OPMET Data Exchange



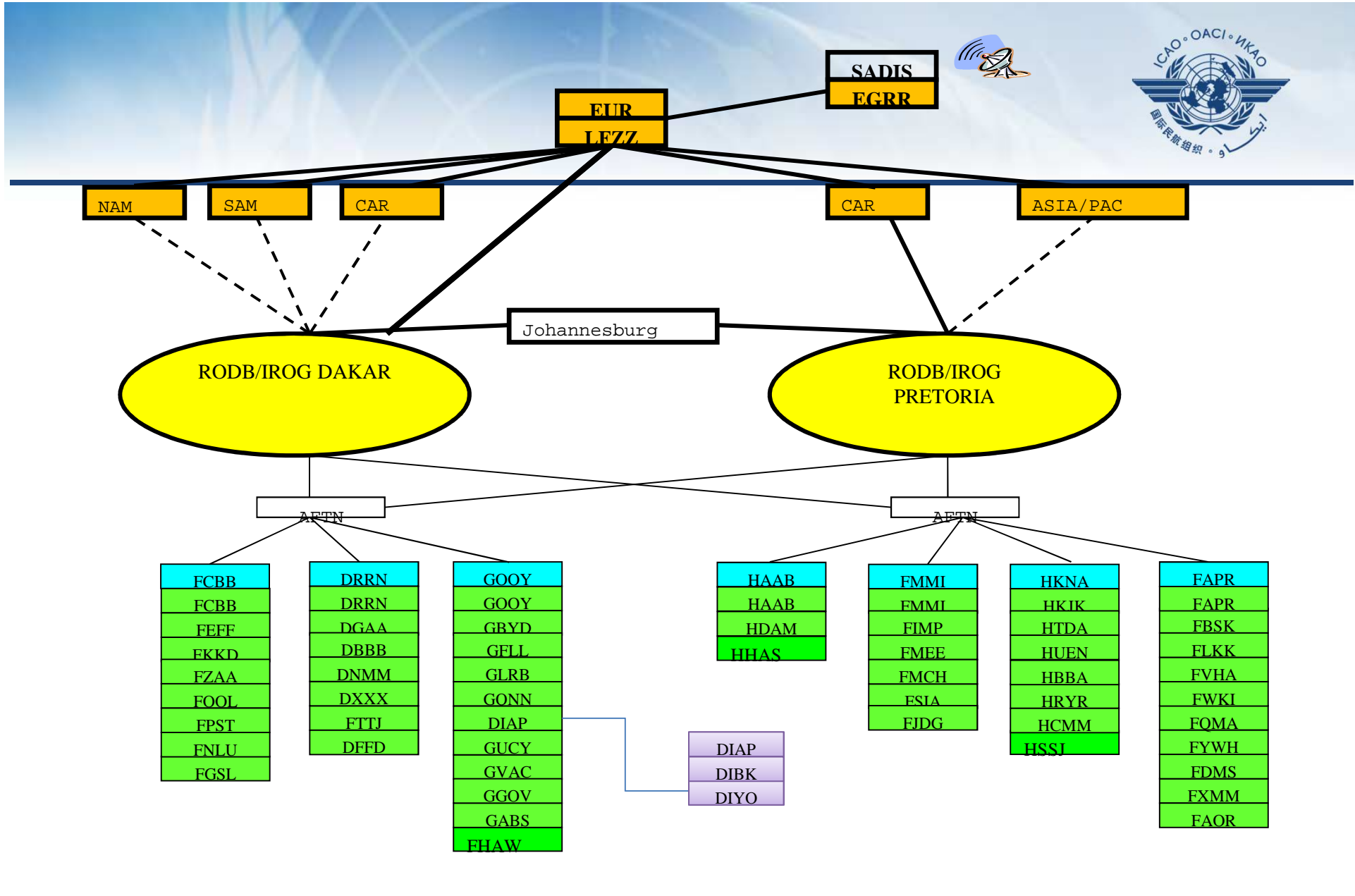
- ❑ OPMET bulletins and Individual messages are exchanged under the AMBEX Scheme.
- ❑ A bulletin contains OPMET messages of the same type.
- ❑ The format of the bulletins are described in :
 - ICAO Annex 10, for the AFTN envelope of the bulletin;
 - The WMO Guide -No.386, for the abbreviated heading of the bulletin;
 - ICAO Annex 3 and WMO Guide No.306, for the format and coding of the information included in the bulletin.

Components of the AMBEX Scheme



The AMBEX scheme involves the following operational units :

- ✓ Originating station (in national aerodromes);
- ✓ NOCs (National OPMET Centre);
- ✓ BCCs (Bulletin compiling Centre);
- ✓ RODBs (Regional OPMET Data Banks); and
- ✓ IROGs (Interregional OPMET gateway).



 AFI RODB/IROG
DRRN AFI BCC
DIAP AFI NOC

DIYO AOP/N-AOP

----- Planned

Responsibilities of the AMBEX Units



- ❑ **National aerodromes** to forward the individual OPMET message to the associated NOC;
- ❑ Associated **NOC** (48 national AFTN centres) to:
 - ✓ collect all OPMET messages generated by the originating stations in the State; and
 - ✓ send them to the responsible.
- In some States a NOC can also play the function of a BCC or an RODB .

Responsibilities of the AMBEX Units



- ❑ **BCCs (7)** are responsible for the exchange of compiled OPMET bulletins with:
 - other BCCs, according to predefined routing tables;
 - AFI RODBs (Dakar and Pretoria);
 - NOCs in the States in their area of responsibilities.

Responsibilities of the AMBEX Units



RODBs (2) are responsible for :

- ✓ the collect OPMET bulletins from the BCCs in their area of responsibility and store them in a data base;
- ✓ the provision of facilities for “request-reply” service to the authorized users;
- ✓ The maintenance of a catalogue of bulletins;
- ✓ The quality control of the incoming bulletins and inform the BCCs concerned of any discrepancies or shortfalls; and
- ✓ the monitoring of the OPMET traffic by carrying out regular tests on the availability and timeliness of the bulletins; and report to the ICAO Regional Office on the results.

Responsibilities of the AMBEX Units



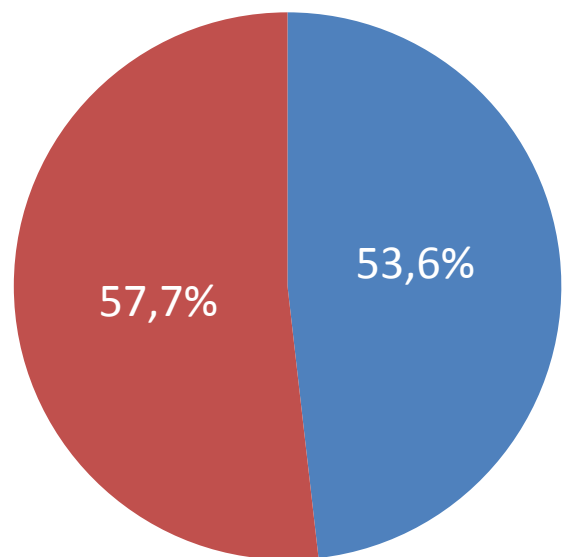
- ❑ AFI RODBs also given the responsibilities of AFI **IROGs**.
- ❑ IROGs are responsible for OPMET exchanges between AFI region and adjacent ICAO Regions.
- ❑ Responsibilities IROGs AFI:

RESPONSABILITES	IROG/DAKAR	IROG/PRETORIA
Incoming Messages	Rio de Janeiro, Djeddah, Toulouse	Rio de Janeiro, Djeddah, Bangkok, Toulouse
Outgoing Messages	Rio de Janeiro, Toulouse	Rio de Janeiro, Djeddah, Bangkok, Toulouse

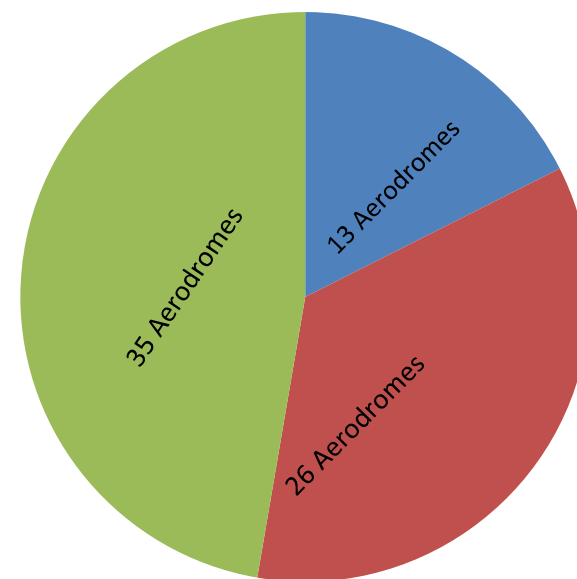
5. OPMET Monitoring Results - WACAF



AVAILABILITY OF METAR AT DAKAR RODB January to March 2014



■ METAR % H+15 ■ METAR % H+30



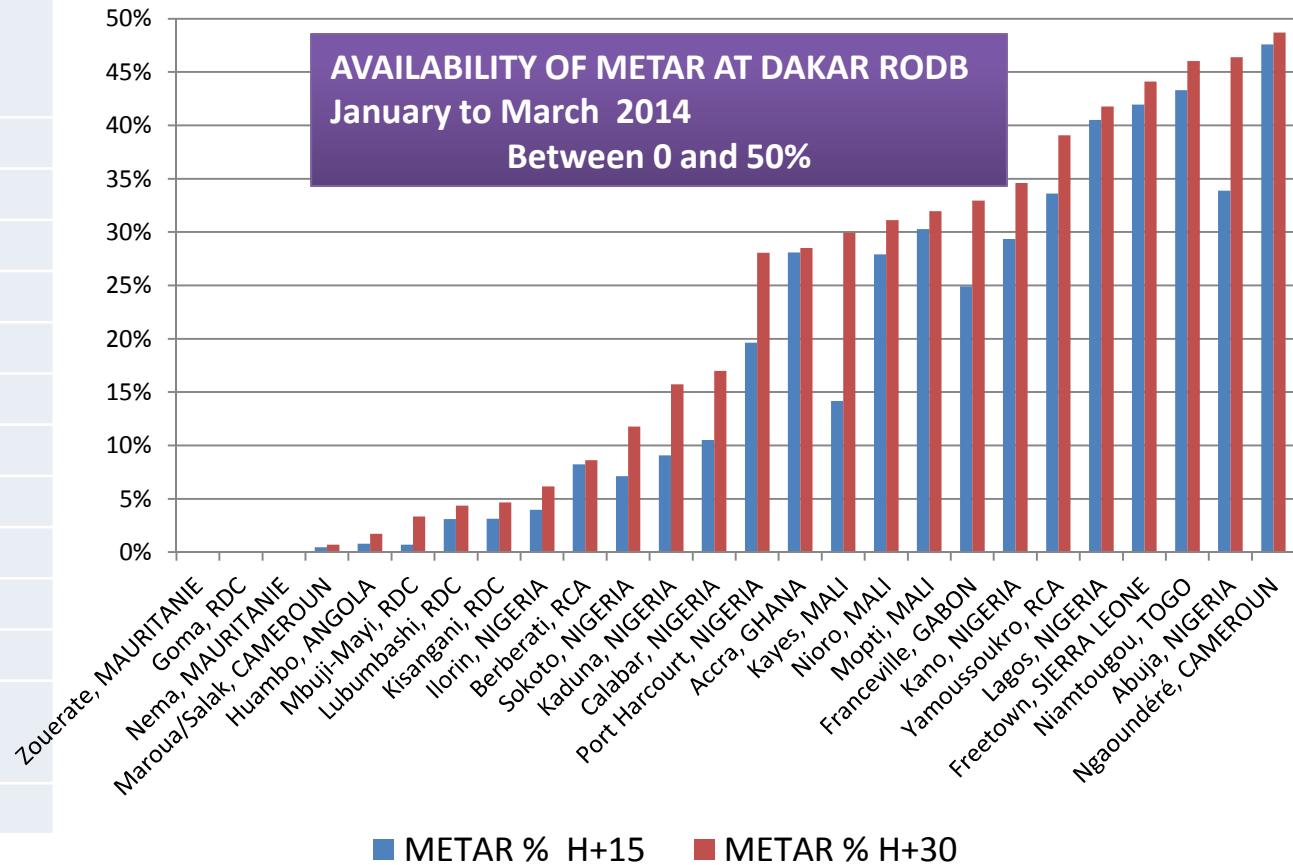
■ 0% ■ Betwen 0 and 50% ■ Between 50 and 100%

5. OPMET Monitoring Results - WACAF



Aerodromes with 0% availability (13)

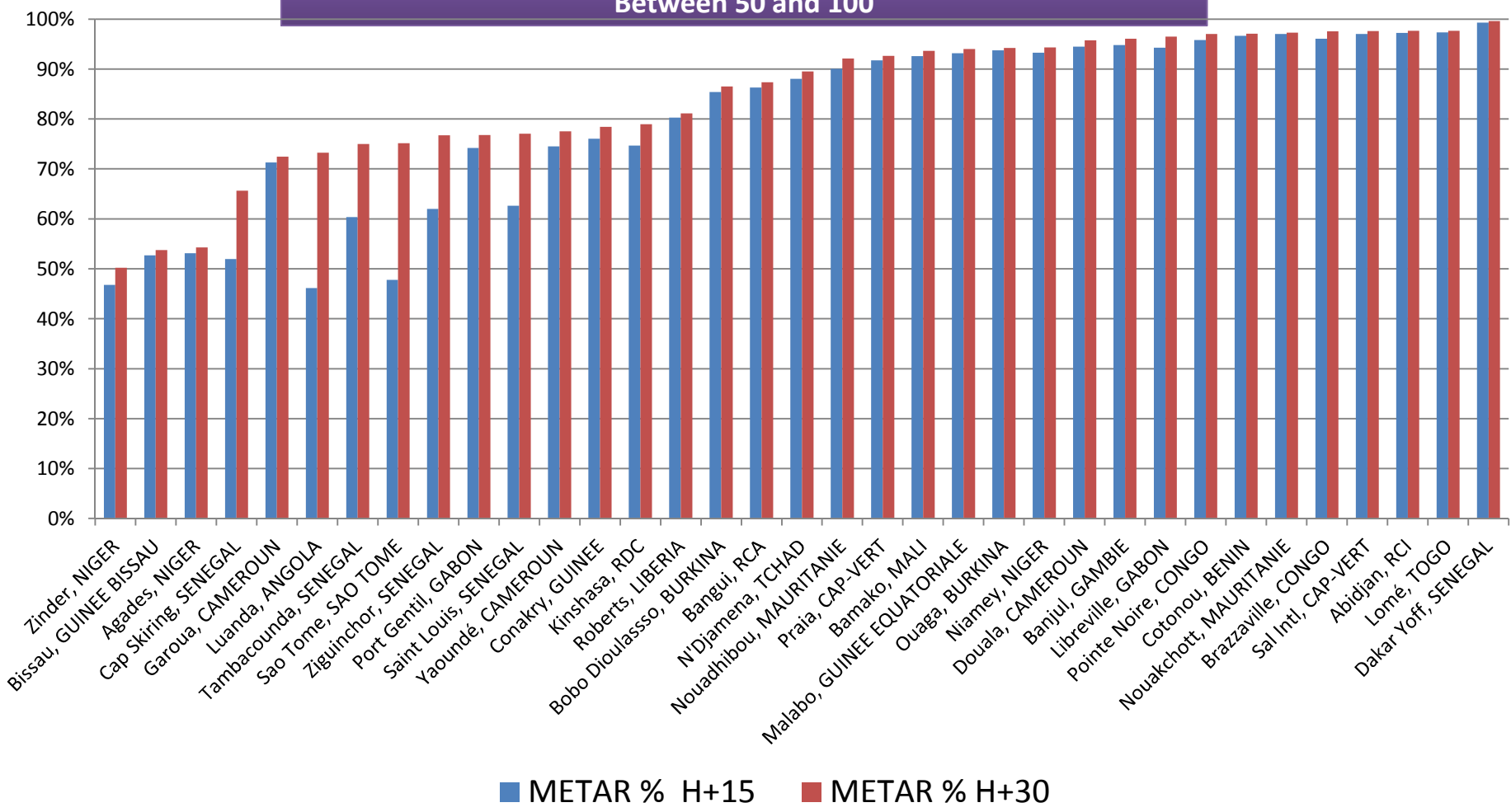
- Bouaké, RCI
- Tamale, GHANA
- Kumasi, GHANA
- Labe, GUINEE
- N'Zerekore, GUINEE
- Kankan, GUINEE
- Gao, MALI
- Kidal, MALI
- Tombouctou, MALI
- Atar, MAURITANIE
- Maiduguri, NIGERIA
- El Aaiun, SAHARA OCCIDENTALE
- Villacisneros, W SAHARA



5. OPMET Monitoring Results - WACAF



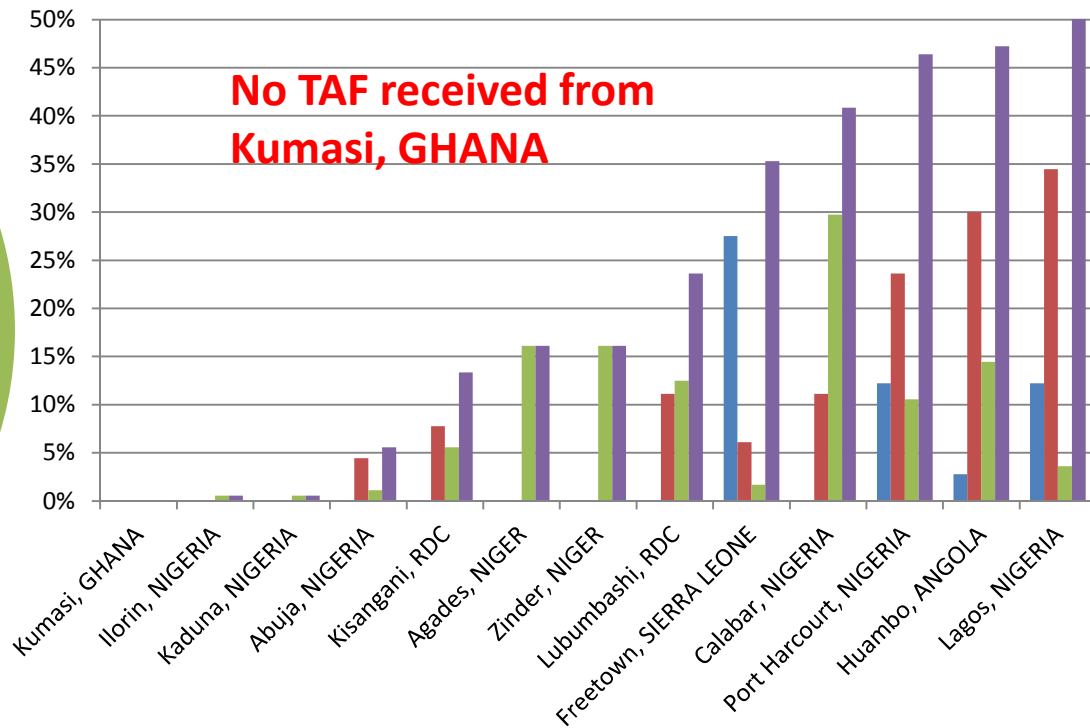
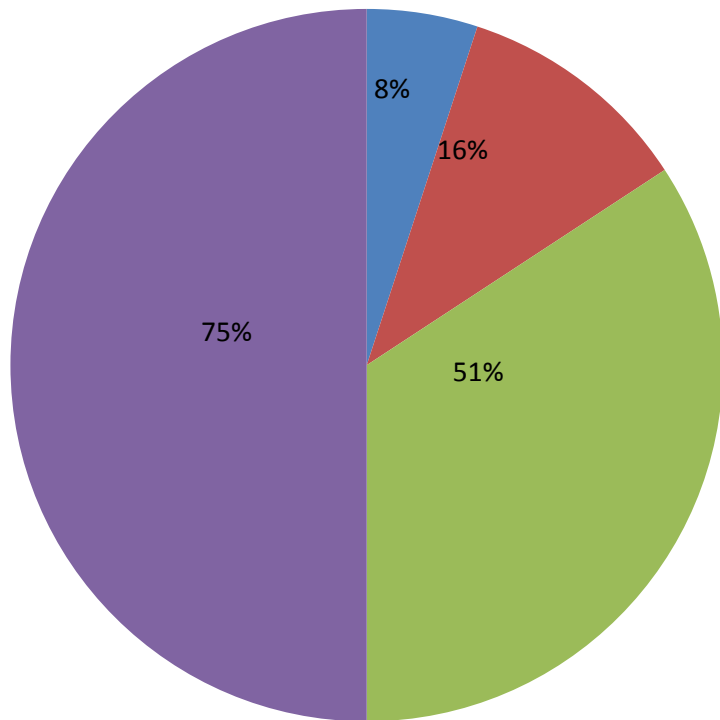
AVAILABILITY OF METAR AT DAKAR RODB January to March 2014
Between 50 and 100



5. OPMET Monitoring Results - WACAF



AVAILABILITY OF TAF AT DAKAR RODB January to March 2014

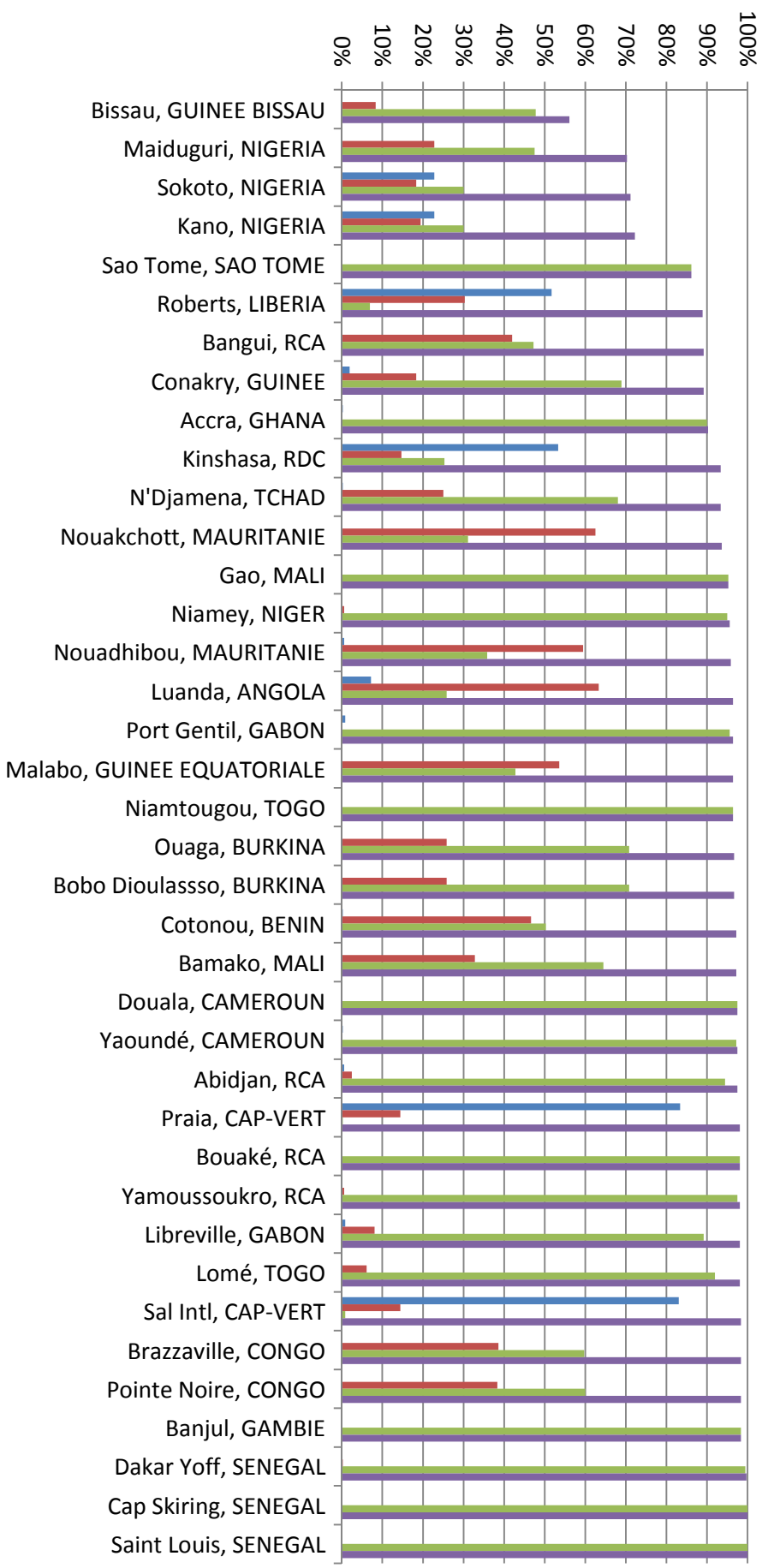


■ TAF % Before HH-60 ■ TAF % between HH-1 and HH
■ TAF % after HH ■ % total

5. OPMET Monitoring Results - WACAF



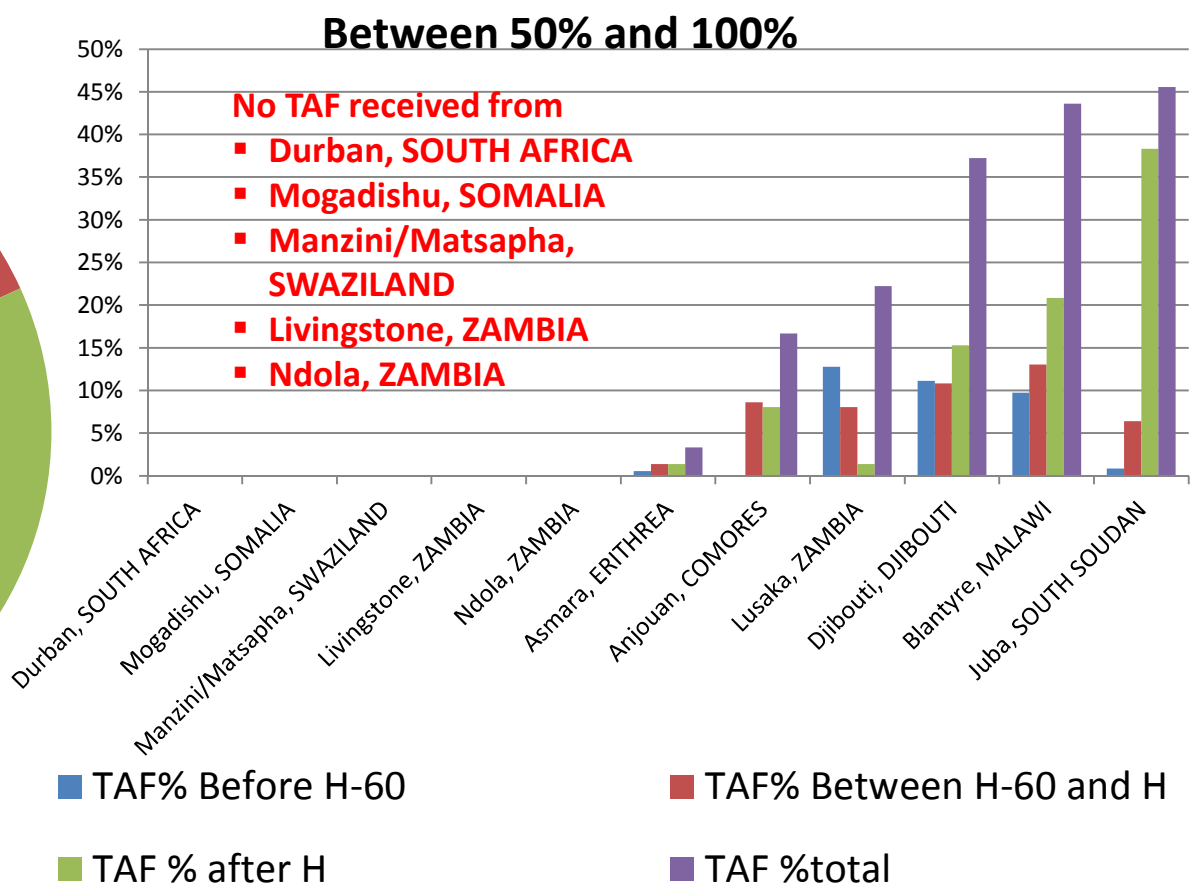
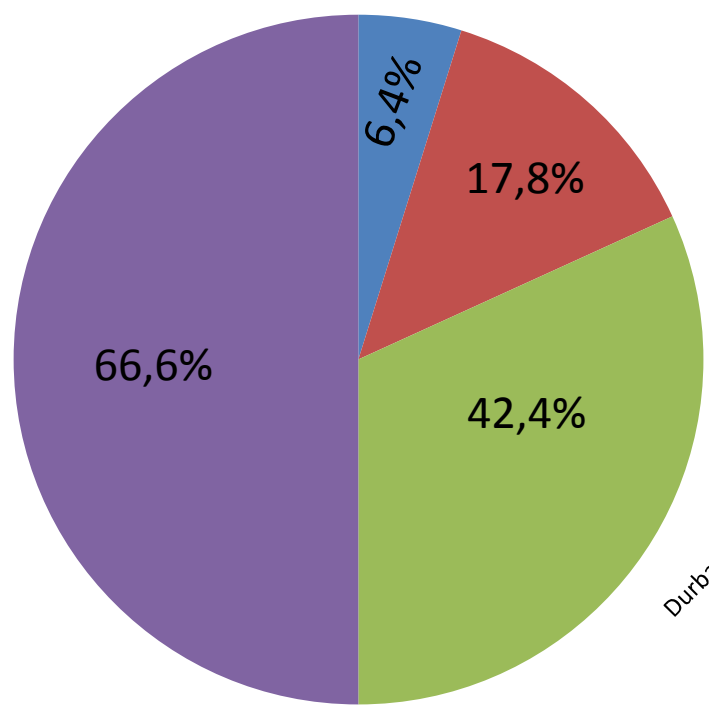
AVAILABILITY OF TAF AT DAKAR ROBB January to March 2014
Between 50 and 100



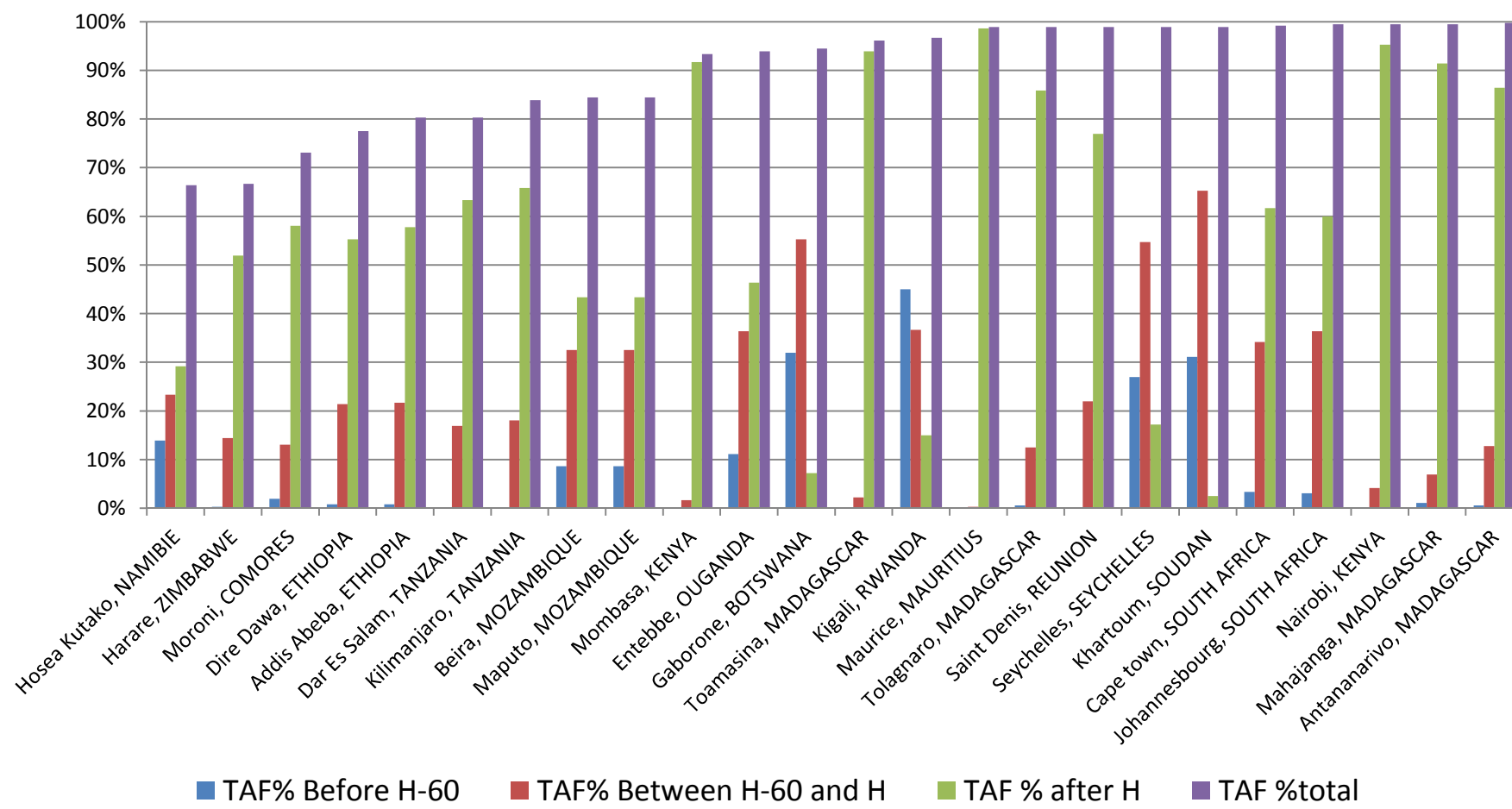
5. OPMET Monitoring Results - ESAF



AVAILABILITY OF TAF AT DAKAR RODB January to March 2014



5. OPMET Monitoring Results - ESAF



5. OPMET Monitoring Results – SIGMET TESTS



	Operational Shortcomings and Deficiencies	VAAC, TCAC, RODBs or MWOs
1	21 MWOs out of 35 in the AFI region (60%) did not issue any WV SIGMET during the Test period. An improvement of 3% compared with last year.	<p>ESAF (15): Luanda, Bujumbura, Gaborone, Addis Ababa, Asmara, Lilongwe, Maputo, Windhoek, Kigali, Mahe, Dar Es Salaam, Entebbe, Harare, Tripoli*, Khartoum*</p> <p>WACAF (6): Accra, Alger*, Gran Canaria*, *Monrovia, Tunis*, Casablanca*.</p>
2	24 MWOs out of 35 in the AFI region (69%) did not issue WS SIGMET during the Test period. This is a decline of 17 % compared to last year's results.	<p>ESAF (15): Luanda, Gaborone, Bujumbura, Addis Ababa, Nairobi, Lilongwe, Windhoek, Kigali, Seychelles, Mogadishu*, Dar Es Salaam, Entebbe, Lusaka, Harare, Maputo.</p> <p>WACAF (9): Alger, Grand Canari*, Sal, N'Djamena, Monrovia, Tunis*, Casablanca* Tripoli, Cairo</p>
3	6 MWOs out of 9 expected to respond in the AFI region (78 %) did not issue any WC SIGMET during the Test	Dar Es Salaam, Gaborone, Harare, Lilongwe Maputo. Mauritius.

5. OPMET Monitoring Results – SIGMET TESTS



4	The listed 12 MWOs (34%) have never issued any SIGMET during AFI SIGMET Tests. This is an improvement of one MWO compared to last year	ESAF (9) Luanda, Bujumbura, Addis Ababa, Tripoli, , Windhoek, Kigali, Dar Es Salaam, Lusaka, Harare. WACAF (3): Alger, Gran Canarias* Monrovia
5	2 MWOs did not use FF priority indicator to disseminate WS SIGMET .	Brazzaville, Dakar
6	1 MWO did not use FF priority to disseminate WV SIGMET	Dakar.
7	1 MWOs issued a WC SIGMET while it was not required	Asmara
	1 MWO issued WC SIGMET before advisory was received	Asmara
8	WC SIGMETs from 2 MWOs were received late at the RODBs, more than 10 mn after the advisory was issued by FMEE.	Antananarivo, Johannesburg,

5. OPMET Monitoring Results – SIGMET TESTS



9	WV SIGMETs from 7 MWOs were received late at the RODBs, more than 10 mn after the advisory was issued by LFPW	Monrovia, Kano, Johannesburg, Mauritius, Mogadishu, Asmara, Lilongwe
10	3 MWO issued WS SIGMETs with an incorrect weather phenomena description or no weather phenomenon when there should have been	Kano, Johannesburg, Mauritius.
	3 MWOS issued SIGMETs before receiving WV advisory	Antananarivo, Asmara, Casablanca,
11	Five (5) MWOs issued SIGMET test messages without including a line of 12 “TEST” at the end of the SIGMET message	Dakar, Kano, Johannesburg , Asmara Lilongwe
12	The trigger WC SIGMET sent 20 minutes late	La Reunion.



*Merci de votre attention et
bon séjour à Dakar*

Questions???