

**APPENDIX C: AIR NAVIGATION REPORT FORM (ANRF)  
(Regional and National planning for ASBU Modules)**

| <b>1. REGIONAL /NATIONAL PERFORMANCE OBJECTIVE – B0-AMET<br/>Meteorological Information Supporting Enhanced Operational Efficiency and Safety</b>    |  |                                |  |                              |               |
|--|--|--------------------------------|--|------------------------------|---------------|
| <b>Performance Improvement Area 2: Global Interoperable Systems and Data<br/>– Through Globally Interoperable System-Wide Information Management</b> |  |                                |  |                              |               |
| <b>3. ASBU B0-AMET: Impact on Main Key Performance Areas (KPA)</b>   |  |                                |  |                              |               |
|  | <b>Access &amp; Equity</b>   | <b>Capacity</b>                | <b>Efficiency</b>  | <b>Environment</b>           | <b>Safety</b> |
| <b>Applicable</b>  | <b>N</b>   | <b>Y</b>                       | <b>Y</b>   | <b>Y</b>                     | <b>Y</b>      |
| <b>4. ASBU B0-AMET: Planning Targets and Implementation Progress</b>   |  |                                |  |                              |               |
| <b>5. Elements</b>   |  |                                | <b>6. Targets and Implementation Progress<br/>(Ground and Air)</b>   |                              |               |
| 1. Forecasts provided by WAFCs, IAVW and TCAC  |  |                                | 75% by December 2016   |                              |               |
| 2. Aerodrome warnings (AD WRNG, WS WRNG and alerts)  |  |                                | 50% by December 2016   |                              |               |
| 3. SIGMET  |  |                                | 80% by December 2016   |                              |               |
| 4. QMS/MET   |  |                                | 75% by December 2016   |                              |               |
| 5. AMBEX   |  |                                | 80% by December 2016   |                              |               |
| 6. Other OPMET Information (METAR, SPECI, TAF)   |  |                                | 80% availability by December 2016                                    |                              |               |
| <b>7. ASBU B0-AMET: Implementation Challenges</b>  |  |                                |  |                              |               |
| <b>Elements</b>  | <b>Implementation Area</b>   |                                |  |                              |               |
|  | <b>Ground System Implementation</b>                                      | <b>Avionics Implementation</b> | <b>Procedures Availability</b>                                       | <b>Operational Approvals</b> |               |
| 1. Forecasts provided by WAFCs, IAVW and TCAC  | Connection to the AFS satellite and public internet distribution systems | NIL                            | Prepare a contingency plan in case of public internet failure        | N/A                          |               |
| 2. Aerodrome warnings ((AD WRNG, WS WRNG and alerts)   | Connection to the AFTN/MHS   | NIL                            | Local arrangements for reception of aerodrome warnings               | N/A                          |               |
| 3. SIGMET  | Connection to the AFTN/MHS   | NIL                            | Prepare a contingency plan in case of AFTN/MHS systems failure       | N/A                          |               |
| 4. QMS/MET   | NIL  | NIL                            | Appropriate arrangements for establishment and implementation of QMS | Commitment of top management |               |
| 5. AMBEX   | Connection to the AFTN/MHS   | NIL                            | Prepare a contingency plan in case of AFTN/MHS systems failure       | N/A                          |               |
| 6. Other OPMET Information (METAR, SPECI, TAF)   | Connection to the AFTN/MHS   | NIL                            | Prepare a contingency plan in case of AFTN systems failure           | N/A                          |               |

| <b>8. ASBU B0-AMET: Performance Monitoring and Measurement</b>                    |   |
|---|---|
| <b>8A. ASBU B0-AMET: Implementation Monitoring</b>                                |   |
| <b>Elements</b>   | <b>Performance Indicators / Supporting Metrics</b>  |
| 1. Forecasts provided by WAFCS and IAVW<br>1.1 WAFS                               | Indicator: States implementation of SADIS 2G/secure SADIS FTP<br>Supporting metric: Number of States implementation of SADIS 2G/secure SADIS FTP  |
| 1. Forecasts provided by TCAC<br>1.2. Tropical cyclone watch                      | Indicator: Percentage of international aerodromes/MWOs with Tropical cyclone watch procedures implemented<br>Supporting metric: Number of international aerodromes/MWOs with Tropical cyclone watch             |
| 2. Aerodrome warnings (AD WRNG)<br>2.1. Aerodrome warnings                        | Indicator: Percentage of international aerodromes/AMOs with Aerodrome warnings implemented<br>Supporting metric: Number of international aerodromes/AMOs with Aerodrome warnings implemented                    |
| 2. Aerodrome warnings (WS WRNG and alerts)<br>2.2. Wind shear warnings and alerts | Indicator: Percentage of international aerodromes/AMOs with wind shear warnings procedures implemented<br>Supporting metric: Number of international aerodromes/AMOs with shear warnings and alerts implemented |
| 3. SIGMET   | Indicator: Percentage of international aerodromes/MWOs with SIGMET procedures implemented<br>Supporting metric: Number of international aerodromes/MWOs with SIGMET procedures implemented                      |
| 4. QMS/MET  | Indicator: Percentage of MET Provider States with QMS/MET established and implemented<br>Supporting metric: Number of MET Provider States with QMS/MET certificated   |
| 5 AMBEX   | Indicator: Percentage of international aerodromes/Meteorological Offices (MOs) with AMBEX procedures implemented<br>Supporting metric: Number of international aerodromes/MOs with AMBEX procedures implemented |
| 6. Other OPMET Information (METAR, SPECI, TAF)                                    | Indicator: Percentage of OPMET available at international aerodrome AMOs/MWOs<br>Supporting metric: Number of international aerodromes/MWOs issuing required OPMET information                                  |
| <b>8. ASBU B0-AMET: Performance Monitoring and Measurement</b>                    |   |
| <b>8B. ASBU B0-AMET: Performance Monitoring</b>                                   |   |
| <b>Key Performance Areas</b>  | <b>Metrics (if not, indicate qualitative benefits)</b>  |
| Access & Equity   | N/A   |
| Capacity  | Optimized usage of airspace and aerodrome capacity due to MET support   |
| Efficiency  | Reduced arrival/departure holding time, thus reduced fuel burn due to MET support   |
| Environment   | Reduced emission due to reduced fuel burn due to MET support  |
| Safety  | Reduced incidents/accidents in flight and at international aerodromes due to MET support  |

**APPENDIX D: AFI REGIONAL PERFORMANCE OBJECTIVE**

| <b>B0-AMET PFF-1: FOSTER THE IMPLEMENTATION OF SIGMET AND QMS IN THE AFI REGION</b> |  |                            |                       |               |
|---|--|----------------------------|-----------------------|---------------|
| <b>Benefits</b>   |  |                            |                       |               |
| <b>Environment</b>  | <ul style="list-style-type: none"> <li>contribution in the reduction in fuel consumption through optimized departure and arrival/ scheduling resulting in CO2 emissions reductions</li> </ul>                              |                            |                       |               |
| <b>Efficiency</b>   | <ul style="list-style-type: none"> <li>Harmonize arriving and departing air traffic will translate to eliminate or minimize holding times and thus reduce fuel burn</li> </ul>   |                            |                       |               |
| <b>Safety</b>   | <ul style="list-style-type: none"> <li>improvement of efficiency of meteorological services to aircraft in flight</li> </ul>   |                            |                       |               |
|   | <ul style="list-style-type: none"> <li>ensure timely preparation and provision to airlines of aviation warnings for en-route meteorological hazards</li> </ul>   |                            |                       |               |
|   | <ul style="list-style-type: none"> <li>ensure quality and timely provision of meteorological data for air navigation services through the quality management system (QMS) implementation</li> </ul>                        |                            |                       |               |
|   | <ul style="list-style-type: none"> <li>minimize encounters by aircraft of hazardous meteorological conditions</li> </ul>   |                            |                       |               |
| <b>Strategy</b>   |  |                            |                       |               |
| <b>ATM OC COMPONENTS</b>  | <b>TASKS</b>   | <b>TIMEFRAME START-END</b> | <b>RESPONSIBILITY</b> | <b>STATUS</b> |
| <b>AOM, DCB, AO, TS, AUO</b>  | <b>SIGMET</b>  |                            |                       |               |
| <b>AOM, DCB, AO, TS, AUO</b>  | a) assessment on the current level of implementation through periodic SIGMET trials in the AFI Region  | 2014 - 2015                | ICAO/WMO, States      | Valid         |
|   | b) establishment of an updated list of States not compliant with SIGMET format   | 2014 - 2016                |                       |               |
|   | c) provision of details guidance to States not issuing SIGMET as required  | 2016                       |                       |               |
|   | d) Establishment of an implementation project in terms of seminars through special implementation projects (SIPs) and Safety Fund-ICAO (SAFE) for Aviation Safety (IFFAS) projects for States not meeting their obligation | 2015 – 2017                | ICAO/WMO              |               |
| <b>QMS</b>  |  |                            |                       |               |
| <b>AOM, DCB, AO, TS, AUO</b>  | e) establishment of an updated list of States not implementing or partially implementing the QMS   | 2015                       | ICAO/WMO, States      | Valid         |
|   | f) Enhance the training of MET personnel in States that have not implemented QMS   | 2015 – 2017                |                       |               |
|   | g) States to be encouraged to institute mechanism for cost   | 2015                       |                       |               |

|   |  |             |                  |       |
|---|--|-------------|------------------|-------|
|   | recovery to support QMS maintenance  |             |                  |       |
|   | h) Establishment of an implementation project in terms of seminars and consultancy services through projects during the initial stages of QMS implementation for States  | 2015 – 2017 | ICAO/WMO         |       |
| <b>Removal of Air Navigation Deficiencies in the MET Field</b>  |  |             |                  |       |
| <b>AOM, DCB, AO, TS, AUO</b>  | i) Assess and confirm the current air navigation deficiencies in the MET field through State Letters and surveys in the concerned States   | 2015        | ICAO             | Valid |
|   | j) Visit the remaining AFI States not listed and establish an updated list of MET deficiencies   | 2015-2016   | ICAO             | Valid |
|   | k) Conduct specific training workshops in French and English to assist States concerned to address deficiencies related to the implementation of the AMBEX scheme and provide further advice and awareness                       | 2015-2018   | ICAO             |       |
|   | l) establishment of an updated list of deficiencies of States not compliant with SIGMET format   | 2014 - 2016 | ICAO/WMO, States |       |
|   | m) Establish an action plan to assist concerned States in their effort to remove long lasting MET deficiencies   | 2016-2018   | ICAO             | Valid |
|   | n) Establishment of an implementation project in terms of State missions through special implementation projects (SIPs) and Safety Fund-ICAO (SAFE) for Aviation Safety (IFFAS) projects for States not meeting their obligation | 2016-2018   | ICAO/WMO         | Valid |
| <b>Transition to Aeronautical Meteorological Information in the Future SWIM-Enabled Environment in the AFI Region</b> |  |             |                  |       |
| <b>AOM, DCB, AO, TS, AUO</b>  | o) Encourage AFI regional OPMET Databanks (RODBs) in Dakar and Pretoria, to continue to develop capability of handling OPMET data in digital format (XML/GML), test XML/GML codes, take a leading role over the transition       | 2015-2016   | ICAO/WMO         | Valid |

|                        |   |           |             |       |
|------------------------|---|-----------|-------------|-------|
|                        | aspect to XML/GML and provide technical assistance as required to other AFI States  |           |             |       |
|                        | p) ICAO in coordination with WMO and AFI RODBs Dakar/Pretoria Provider States start assisting AFI States in developing capability of handling OPMET data in digital format  | 2016-2017 | ICAO/States | Valid |
|                        | q) AFI States start progressive implementation of XML/GML-based exchange format for METAR, SPECI, TREND, TAF and SIGMET in accordance with Amendment 77 to ICAO Annex 3   | 2016-2018 | States      | Valid |
|                        | r) Establishment of an implementation project in terms of training workshops and State missions through special implementation projects (SIPs) and Safety Fund-ICAO (SAFE) for Aviation Safety (IFFAS) projects for States not meeting their obligation | 2016-2018 | ICAO/WMO    | Valid |
| <b>Linkage to GPIs</b> | GPI/19: Meteorological systems  |           |             |       |

APPENDIX D: AFI REGIONAL PERFORMANCE OBJECTIVE

| <b>B0-AMET PFF-2: FOSTER THE IMPLEMENTATION OF TERMINAL AREA WARNINGS AND FORECASTS, PROVISION OF WAFS FORECASTS AND OPTIMIZATION OF OPMET DATA EXCHANGES IN THE AFI REGION</b> |  |                            |                       |               |
|---|--|----------------------------|-----------------------|---------------|
| <b>Benefits</b>   |  |                            |                       |               |
| <b>Environment</b>  | <ul style="list-style-type: none"> <li>contribution in the reduction in fuel consumption; the benefits will lead to reduction in greenhouse gases</li> </ul>   |                            |                       |               |
| <b>Efficiency</b>   | <ul style="list-style-type: none"> <li>improvement of efficiency in meteorological services to aircraft in flight</li> </ul>   |                            |                       |               |
|   | <ul style="list-style-type: none"> <li>ensure timely preparation and provision to airlines of aviation warnings for terminal area meteorological hazards</li> </ul>  |                            |                       |               |
|   | <ul style="list-style-type: none"> <li>improvement in the efficiency of flight planning by airlines taking into account prevailing and expected meteorological conditions along the route based on WAFS forecasts</li> </ul> |                            |                       |               |
| <b>Safety</b>   | <ul style="list-style-type: none"> <li>minimize encounters by aircraft of hazardous meteorological conditions</li> </ul>   |                            |                       |               |
| <b>Strategy</b>   |  |                            |                       |               |
| <b>Short term (2010-2012) : Medium term (2012 - 2016)</b>   |  |                            |                       |               |
| <b>ATM OC COMPONENTS</b>  | <b>TASKS</b>   | <b>TIMEFRAME START-END</b> | <b>RESPONSIBILITY</b> | <b>STATUS</b> |
| <b>Terminal area warnings and forecasts</b>   |  |                            |                       |               |
| <b>AOM, DCB, AO, TS, AUO</b>  | a) Assessment of the current level of implementation of facilities at aerodromes for monitoring hazardous meteorological conditions  | 2015- 2016                 | States/ICAO/WMO       | Valid         |
|   | b) Provision of details guidance to States not issuing terminal area warnings and forecasts  | 2015                       | ICAO/WMO              |               |
|   | c) Implementations of aerodrome warnings, wind shear warnings/alerts and water thickness on the runway to support runway safety plans  | 2015-2018                  | ICAO                  |               |
|   | d) Establishment of an implementation project in terms of seminars and consultancy services through special implementation projects (SIP) and Safety Fund-ICAO projects respectively for States not meeting their obligation | 2015-2017                  | States                |               |
| <b>World area forecast system (WAFS) and International Airways Volcano Watch (IAVW)</b>   |  |                            |                       |               |
|   | e) Conduct training seminars in French and English on new WAFS gridded forecasts   | 2014-2015                  | ICAO/WMO              | Valid         |
|   | f) Establishment of an updated list of States not receiving WAFS products and areas of constraints in implementing SADIS VSAT and  | 2015 - 2017                | ICAO                  | Valid         |

|  |  |               |                  |       |
|--|--|---------------|------------------|-------|
|  | FTP service and States concerned to develop remedial action plans  |               |                  |       |
|  | g) Conduct in coordination with the concerned ATM Project Team, awareness seminars on the implementation of AFI Volcanic Ash Contingency Plan (VACP)                                 | 2015          | ICAO/States      | Valid |
|  | h) Establishment of an updated list of States with active volcanos not implementing IAVW (volcano observatories and VONA) and urge States concerned to develop remedial action plans | 2016          | ICAO/States      | Valid |
|  | i) Establishment of an implementation project in terms of seminars and consultancy services through SIPs and Safety Fund projects respectively                                       | 2015 - 2018   | ICAO/WMO, States | Valid |
| <b>Optimization and implementation of the AFI OPMET data Exchange (AMBEX) scheme</b> |  |               |                  |       |
| <b>AOM, DCB, AO, TS, AUO</b>   | j) Undertake an assessment of the availability and quality of OPMET data in the region and States not meeting the required levels of implementation to develop remedial action plans | 2015-Dec 2018 | ICAO/WMO, States | Valid |
|  | k) Two seminars in French and English on AMBEX and OPMET AFI data banks procedures   | 2014-2016     | ICAO             | Valid |
|  | l) Establishment of an implementation project in terms of seminars and consultancy services through SIPs and Safety Fund-ICAO (SAFE) projects respectively obligation                | 2015-2018     | <b>ICAO</b>      | Valid |
| <b>Linkage to GPIs</b>   | GPI/19: Meteorological systems   |               |                  |       |

**APPENDIX E  
RELATIONSHIP BETWEEN ASBU B0-AMET AND MET  
RELATED PERFORMANCE FRAMEWORK FORM (PFFS) IN THE AFI REGION**

|                          | PIA1          |               |                   |               |               | PIA 2         |               |                | PIA3          |               |               |               |                |                | PIA4         |              |              |
|--------------------------|---------------|---------------|-------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|----------------|--------------|--------------|--------------|
|                          | B0-15<br>RSEQ | B0-65<br>APTA | B0-70<br>WAK<br>E | B0-75<br>SURF | B0-80<br>ACDM | B0-25<br>FICE | B0-30<br>DATM | B0-105<br>AMET | B0-10<br>FRTO | B0-35<br>NOPS | B0-84<br>ASUR | B0-86<br>OPFL | B0-101<br>ACAS | B0-102<br>SNET | B0-05<br>CDO | B0-20<br>CCO | B0-40<br>TBO |
| PFF<br>AFI<br>ATM/O<br>1 |               |               |                   |               |               |               |               |                | X             |               |               | X             |                |                |              |              |              |
| PFFAF<br>I<br>ATM/O<br>2 |               |               |                   |               |               |               |               |                | X             |               |               |               |                |                |              |              | X            |
| PFFAF<br>I<br>ATM/O<br>3 |               | X             |                   |               |               |               |               |                | X             |               |               |               |                |                | X            | X            | X            |
| PFF<br>AFI<br>ATM/O<br>4 |               |               |                   |               |               |               |               |                | X             |               |               |               |                |                | X            | X            | X            |
| PFF<br>AFI<br>CNS/O<br>1 |               |               |                   |               |               | X             |               | X              |               | X             |               |               |                |                |              |              | X            |
| PFFAF<br>I<br>MET/O<br>1 |               | X             | X                 |               | X             |               |               | X              | X             |               |               |               |                | X              | X            |              |              |

|                          |  |   |   |   |   |  |   |   |   |  |  |  |  |  |   |   |  |
|--------------------------|--|---|---|---|---|--|---|---|---|--|--|--|--|--|---|---|--|
| PFF<br>AFI<br>MET/0<br>2 |  | X | X |   | X |  |   |   | X |  |  |  |  |  | X | X |  |
| PFFAF<br>I<br>SAR/0<br>1 |  |   |   |   |   |  |   |   |   |  |  |  |  |  |   |   |  |
| PFF<br>AFI<br>AIM/0<br>1 |  |   |   |   |   |  | X |   |   |  |  |  |  |  |   |   |  |
| PFF<br>AFI<br>AIM/0<br>2 |  |   |   |   |   |  | X | X |   |  |  |  |  |  |   |   |  |
| PFF<br>AFI<br>AGA/0<br>1 |  |   |   | X | X |  |   |   |   |  |  |  |  |  |   |   |  |