

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**



**A REPORT OF THE FOURTH INFORMAL CONSULTATIVE MEETING OF THE AFI  
REGION STUDY GROUP ON THE ESTABLISHMENT OF A CENTRALIZED AFI  
REGION AIS DATA BASE (AFI – CAD/STUDY GROUP/ 4)**

**(Johannesburg, South Africa, 26 June 2009)**

**Prepared by the Secretary of the AFI – CAD/Study Group  
March 2010**

**Conclusion 15/43 of the APIRG/15 Meeting states *inter alia*, "that IATA, in cooperation with ICAO and Air Navigation Service providers in the AFI Region Study the establishment of a centralized AFI AIS Data Base similar to the European Aeronautical database and forward it to the AFI AIS/MAP Task Force for its consideration".**

**AFI-CAD Study-Group is a Study-Group of the AFI Planning and Implementation Regional Group (APIRG). Its Reports are therefore submitted to APIRG for review and action.**

**The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.**

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## REPORT

### PART I - HISTORY OF THE MEETING

#### 1. Organization/Duration

The Fourth consultative meeting of the AFI Regional Study Group on the Establishment of a Centralized AFI Region AIS Data Base (AFI – CAD) held in Johannesburg, South Africa, 26 June 2009.

#### 2. Officers and Secretariat

2.1 Mr. G. Baldeh, the Secretary of the Study Group and Regional Officer, Aeronautical Information Services and Map (RO/AIS/MAP) of the ICAO WACAF Office, served as the Secretary of the meeting.

2.2 Mr. Peter Rudolph the ICAO designated consultant from Germany also acted as Rapporteur of the meeting.

2.3 The meeting was opened by Mr. Matthys Horak, ATM/AIS Specialist from ATNS Head Office in South Africa. He highlighted that the main objective of this Informal consultative meeting was for States and Stakeholders to provide inputs to assist the ICAO Designated Consultant in the consolidation of the draft AFI-CAD Business Plan. The Study Group, in collaboration with these Experts, is expected to submit the results of the project to the APIRG/17 Meeting for consideration and endorsement.

#### 3. Attendance

3.1 The meeting was attended by 33 participants from 9 States, 3 International Aviation Organizations namely; ASECNA, IATA, EUROCONTROL, and Four International Aviation Companies namely; AVITECH AG of Germany, FREQUENTIS AG of Austria, LUFTHANSA Flight Navigation Systems of Switzerland, and UBITECH Systems of Canada. The list of participants is given at Appendix B to this meeting report.

#### 4. Working Language

4.1 The meeting was conducted in the English language and documentation was issued in the same language.

#### 5. Agenda

5.1 The meeting adopted the following Agenda :

**Agenda Item 1:** Review of Contributions for the development of the AFI-CAD User Requirement Specifications (URS) derived from the EUROCONTROL EAD (URS) as per APIRG Conc. 16/44.

**Agenda Item 2:** Review of Contributions for the development of the AFI-CAD Business/Financial Model based on the elements listed in Recommendation 10 of the adopted AFI-CAD Guidance material for a Business Plan.

**Agenda Item 3:** The elaboration of timelines and Quality Management Systems (QMS) for the development and implementation of the AFI-CAD System and Services.

**Agenda Item 4:** Any Other Business.

## **PART II      REPORT ON AGENDA ITEMS**

### **1. Report on Agenda Item 1**

1.1 Under this Agenda Item, the meeting reviewed ICAO WACAF State letter ref. T2/8.1-0303 dated 15 April 2009 which indicated that Conclusion 16/41 recommends that AFI Requirements be taken into account before finalizing the Requirements Document as input to the AFI-CAD Business Plan. It was noted that AFI Requirements have been identified and documented in the AFI-CAD Framework and Guidance Material. (cf. AFI-CAD 1<sup>st</sup>, 2<sup>st</sup> and 3<sup>rd</sup> Study Group Reports.)

1.2 However, it was highlighted in this State letter that in case experts in States or Organizations did not have the opportunity to participate in the above-mentioned Study Group meetings, States/Organizations were invited to provide new ideas and/or requirements by responding to the questionnaire attached to State letter ref. T2/8.1-0303 of 15 April 2009.

1.3 The meeting noted that all requirements need to be gathered, as user requirements are only one part of the requirements. It was agreed that the requirements collected are finally put together into an Appendix to the AFI-CAD Business Plan .

1.4 The meeting further suggested that the draft questionnaires outlined under Appendix C and D to this report be distributed to AFI-CAD Study Group members for urgent necessary action.

## 2. Report on Agenda Item 2

**Review of Contributions for the development of the AFI-CAD Business/Financial Model based on the elements listed in Recommendation 10 of the adopted AFI-CAD Guidance material for the Business/Financial Plan..**

2.1 In this Agenda Item, the meeting reviewed the updated AFI-CAD Document 006 presented by the Secretariat with new Recommendations which were reviewed and adopted by the meeting. The meeting also reviewed DP/2 presented by the consultant concerning some thoughts about the next steps to finalize the Business and Financial Plan for the AFI-CAD Project. The meeting then agreed that the AFI-CAD Framework and Guidance material may also be integrated in the Business Plan as one comprehensive Business plan.

2.2 In order to prepare a Business plan based on the elements in the Guidance material, the consultant emphasized that all efforts should be made by the States and Study –Group members to:

- collect the existing cost data from the AFI States as input;
- collect the existing personal and infrastructure data from the AFI States as input.

2.3 However, the meeting endorsed the draft format of the Business plan present by the consultant.

2.4 In determination of the cost structure, the meeting endorsed the suggestion of the consultant to use the cost structure of the ICAO CNS-ATM Business Case Analysis Tool, which can be extended for use in the transition from AIS to AIM based on Equipment Categories, Equipment types, Equipment cost, and General Additional cost like staffing , Training etc. It was also noted that a more detailed breakdown, of the cost would be done in the second estimation of the cost.

2.5 The meeting noted that the AFI-CAD, project relates to the ICAO strategic objectives Safety (A2) and Efficiency (D1).

## Report on Agenda Item 3

### **The Elaboration of timelines and Quality Management Systems (QMS) for the development and implementation of the AFI-CAD System and Services.**

3.1 Under this Agenda Item, the meeting reviewed DP/ 3 concerning the revised planning for the overall schedule of the AFI-CAD as presented by the consultant. The meeting noted that ICAO would synchronize the most suitable timelines for the development and implementation of the AFI-CAD based on the evolution of events.

3.2 The meeting also agreed and supported the decision of the Consultant to integrate elements of QMS Requirements within the Business Plan of the AFI-CAD. The meeting noted that the AFI-CAD Framework and Guidance material also covers a Timeline and schedule for setting up and implementing the AFI-CAD as well as processes and phases to establish a proper quality management system during the whole set-up and implementation. It was also noted that a careful planning should be undertaken due to the complex legal, organizational, technical, and political nature of the AFI-CAD.

#### **Set of Documents and structure**

3.3 The meeting also noted that prior to the AFI-CAD program implementation, a set of documents needs to be compiled as required by the ICAO planning process.

<b>N°</b>	<b>Doc. Group</b>	<b>Doc. Title</b>	<b>Audience</b>
001	AFI-CAD 001	AFI-CAD /1 Meeting Report	States, ICAO, Users
002	AFI-CAD 002	The AFI-CAD Framework	States, ICAO, Users
003	AFI-CAD 003	The AFI-CAD Guidance Material	States, ICAO, Users
004	AFI-CAD 004	AFI-CAD/2 Meeting Report	States, ICAO, Users
005	AFI-CAD 005	AFI-CAD/3 Meeting Report	States, ICAO, Users
006	AFI-CAD 006	Revision 1 of the AFI-CAD Guidance Material	States, ICAO, Users
007	AFI-CAD 007	AFI-CAD Business/Financial Plan	States, ICAO, Users
008	AFI-CAD 008	AFI-CAD Requirements Document	States, ICAO, Users
009	AFI-CAD 009	AFI-CAD/4 Meeting Report	States, ICAO, Users
010	AFI-CAD 010	AFI ANP/FASID Amendment Request for inclusion of AFI-CAD	States, ICAO, Users

3.4 The meeting noted that these documents are important to further establish the AFI-CAD undertakings in the overall ICAO planning processes. The meeting noted that the AFI-CAD program needs a proper project set-up due to its size, and complexity.

3.5 The minimum set of project documents could be viewed as follows:

No	Doc Group	Doc Title	Audience	Priority
1.1	Planning and Control	Program Manual	Internal	-
1.2		Program Plan	Internal	High
2.1	Requirements and Analyses	Program Proposal	Internal	High
2.2		Legal Framework of the operation of the AFI CAD	Internal	High
2.3		Operational Concept	External	High
2.4		Requirements Specification Overall Project	External	High
2.5		Requirements Evaluation	External	-
2.6		Service Provision Requirements	External	High
3.1	Acquisition and Contracting	RFP Concept	Internal	High
3.2		Criteria Catalogue for Assessment of Offers	Internal	-
3.3		Request for Proposal	External	-
3.4		Offer Assessment	Internal	-
3.5		Contract	External	-
3.6		Contract Addendum	External	-
3.7		Statement of Acceptance	External	-
4.1	Configuration and Change Management	Problem Report - Change Request	External	-
4.2		Change Status List	Internal	-
4.3		Problem Change Evaluation	Internal	-
4.4		Change Decision	External	-

3.6 The documents marked in the Audience Column as "Internal" are important for setting up the internal process of the procurement team, the documents marked "External" need to be sent to the potential bidders during the tender process or to be used during program execution process. The documents marked in the Priority Column as "High" shall be developed in parallel to the Requirements Specification.

3.7 The documents with no priority shall be developed when the process for the set-up of the AFI CAD is more settled.

3.8 The Timeline and Schedule can be separated in ten principle Phases:

- a) Preparation Phase
- b) Set-Up Phase
- c) Call for Tender Preparation Phase
- d) Call for Tender Phase
- e) Contract Negotiation Phase
- f) System Implementation Phase:
  - i) Each Area/Centre (North, East, South, West) can follow a separate Implementation Plan,
  - ii) Those Phases can move in parallel.
- g) Service Implementation Phase
  - i) Each Area/Centre (North, East, South, West) can follow a separate Implementation Plan in conjunction with the system implementation,
  - ii) Those Phases can move in parallel.
- h) Service Migration Phase
- i) Operation Phase (System and Service)
- j) Maintenance and Enhancement Phase.

3.9 The phase will need to be executed basically in sequence where the work result of one phase is the prerequisite for beginning the next phase.

3.10 The contents of the phases can be initially described as follows:

No	Phase	Contents	Result/Deliverable
1	<i>Preparation Phase</i>	<ul style="list-style-type: none"> <li>• Program Plan</li> <li>• Schedule</li> <li>• Gather interest by State</li> <li>• Document Concept</li> </ul>	<ul style="list-style-type: none"> <li>• AFI CAD Study Group presents work result to APIRG/17</li> <li>• APIRG/17 inaugurates Permanent AFI CAD Working Group (CADWG)</li> </ul>
2	<i>Set-Up Phase</i>	<ul style="list-style-type: none"> <li>• AFCAC/ICAO plans AFI CAD meeting</li> <li>• Discussions with AFDB about financing</li> <li>• States deciding about financing</li> <li>• AFI/8 RAN Meeting endorsed the AFI CAD Project as per APIRG/16 Con. 16/41.</li> <li>• CADWG finalizes documentation concept</li> <li>• Legal establishment of AFI CAD Company (Service Provider Company - SPE).</li> </ul>	<ul style="list-style-type: none"> <li>• State Groupings (North, East, South, West) are fixed</li> <li>• Legal frame are finalized</li> <li>• Service Provider Entity (SPE) are founded</li> <li>• CADWG gets part of the Service Provider Entity</li> <li>• Financing agreed with AFDB.</li> </ul>
3	<i>Call for Tender Preparation Phase</i>	<ul style="list-style-type: none"> <li>• SPE prepares Call for Tender based on the CADWG documentation</li> <li>• SPE develops pre-qualification criteria</li> <li>• Call for pre-qualification</li> <li>• Assessment companies/consortia which have interest to be pre-qualified</li> </ul>	<ul style="list-style-type: none"> <li>• Call for Tender finalized</li> <li>• Publication of Call for Pre-Qualification</li> <li>• Decision on list of pre-qualified companies/consortia</li> <li>• International Call for Tender published (either by SPE or AFDB)</li> </ul>
4	<i>Call for Tender Phase</i>	<ul style="list-style-type: none"> <li>• Call for Tender</li> <li>• Public clarification meeting with interested bidders</li> <li>• Tender Closing</li> <li>• Development of the list of short listed bidders</li> <li>• Individual clarification with short listed bidders</li> <li>• Call for provisional final offer from short listed bidders</li> <li>• Decision about preferred final bidder</li> <li>• Call for definitive final offer from preferred bidder</li> </ul>	<ul style="list-style-type: none"> <li>• Decision about preferred bidder (company/consortia)</li> </ul>
5	<i>Contract Negotiation Phase</i>	<ul style="list-style-type: none"> <li>• Negotiation of system and service contract</li> </ul>	<ul style="list-style-type: none"> <li>• Signed System Contract</li> <li>• Signed Service Contract</li> </ul>
6	<i>System Implementation Phase</i>	<ul style="list-style-type: none"> <li>• Area/Centre 1 implementation</li> <li>• Area/Centre 2 implementation</li> <li>• Area/Centre 3 implementation</li> <li>• Area/Centre 4 implementation</li> <li>• System Training and Training Centers implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Each Area/Centre (North, East, South, West) separate implementation schedule acceptance</li> </ul>
7	<i>Service Implementation Phase</i>	<ul style="list-style-type: none"> <li>• Service implementation Area/Centre 1</li> <li>• Service implementation Area/Centre 2</li> <li>• Service implementation Area/Centre 3</li> <li>• Service implementation Area/Centre 4</li> <li>• Service Training</li> </ul>	<ul style="list-style-type: none"> <li>• Each Area/Centre (North, East, South, West) separate service acceptance</li> </ul>
8	<i>Service Migration</i>	<ul style="list-style-type: none"> <li>• Service migration Area/Centre 1</li> <li>• Service migration Area/Centre 2</li> <li>• Service migration Area/Centre 3</li> <li>• Service migration Area/Centre 4</li> </ul>	<ul style="list-style-type: none"> <li>• Operational usage (cut over) separate for each Area/Centre</li> </ul>

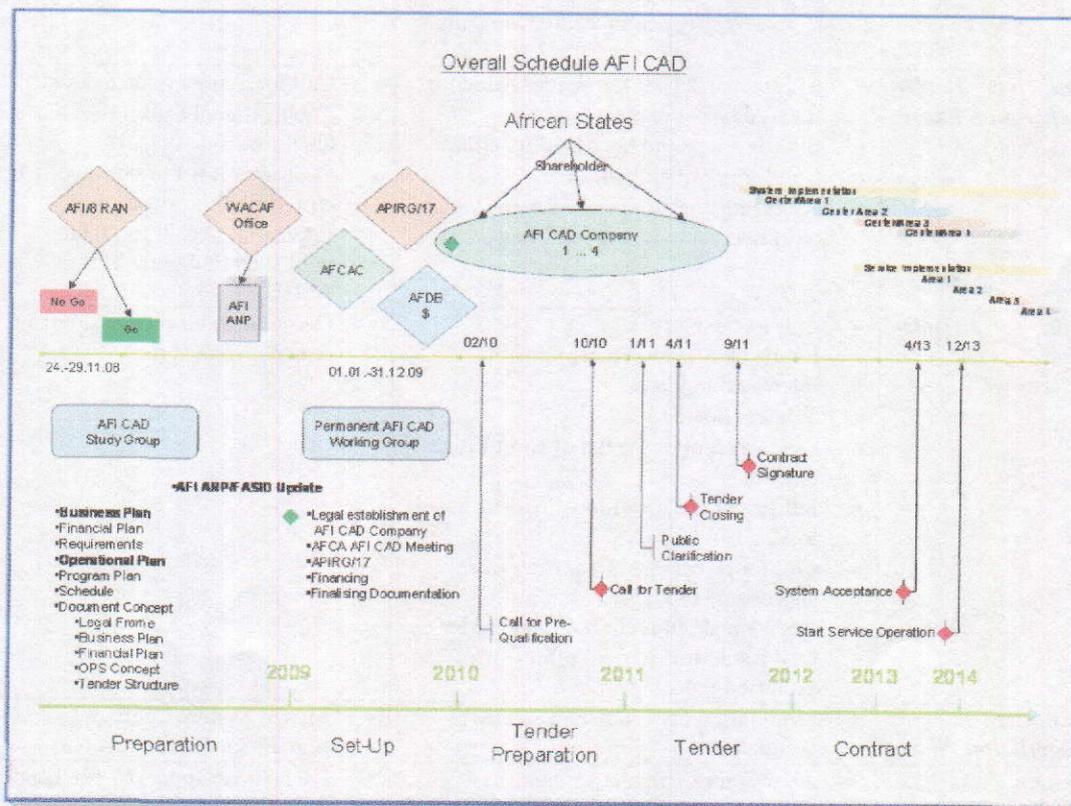
9	<b>Operation Phase and (System Service)</b>	<ul style="list-style-type: none"> <li>• Operation of the System and delivering the service</li> </ul>	<ul style="list-style-type: none"> <li>• AIS Services</li> </ul>
10	<b>Maintenance and Enhancement Phase</b>	<ul style="list-style-type: none"> <li>• Identification of changes</li> <li>• Decision about changes</li> <li>• Implementation of changes</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance of System and Service changes</li> </ul>

3.11 The contents description of the Phases needs continuous reassessment.

### Timeline

3.12 The rough Timeline covers about the next four years 2009 to 2013 until the first Centre/Area could move into operational use. The figure under Paragraph 3.13 , gives an overview.

3.13 It is noted that the timeline culminates with the implementation of phase 2 of the Roadmap of the transition from AIS to AIM on migration to digital databases which calls for establishment of database driven processes for the production of the current products in all States.



3.14 To meet the Timeline depends mostly on the agreement about the AFI CAD Entity (Service Provider Entity) and the financing.

## Report on Agenda Item 4

### Any other Business

4.1 The meeting noted that the role of AIM is one of the foundation building blocks for the successful transition to a Global ATM system. At the core of this building block, lies the QMS that will provide quality and timely information to the aviation community.

4.2 The meeting also noted that the timeliness and integrity of quality aeronautical information/data is a significant enabling activity for the globalization of ATM. Amendment 29 to Annex 15, introduced the requirements for the implementation of a Quality Management System within the aeronautical information services as of 1 January 1998 as follows:

“Each contracting State shall take all necessary measures to introduce a properly organized quality system containing procedures, processes and resources necessary to implement quality management at each function stage. The execution of such quality management shall be made demonstrable for each function stage when required” (Annex 15, Chapter 3 paragraph 3.2.1 refers)”.

4.3 The Euro control Representative welcomed the ICAO initiative to study the means by which an AFI Region Centralized AIS Database (AFI-CAD) can be established. The Representative informed the meeting that Euro control has been technically supporting the Study Group through presentations, and has been in attendance at two previous meetings which discussed the initiative.

4.4 The meeting finally endorsed the revised timeline as presented in the **under Para. 3.13** on (overall) schedule of AFI-CAD which should take into account the following:

- a) the short time frame available;
  - b) analysis of responses received from questionnaires sent to States and user organizations;
  - c) outcome of the Fourth Informal consultative AFI-CAD meeting through correspondence from States ;
  - d) the final deliveries to APIRG/17 and the Council.
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**APPENDIX A AFI-CAD Doc. 006**

**AFI-CAD Document 006**  
**Revision 1. AFI-CAD GUIDANCE MATERIAL**

The Guidance Material for the establishment of AFI-CAD emanated from the Recommendations of the AFI-CAD/ Study Group/1 meeting and subsequently endorsed by ICAO under Conclusion 16/41 of the APIRG/16 Meeting. Consequently, the Guidance Materials are listed herewith in the form of Recommendations attached to the Framework as necessary requirements for the establishment of AFI-CAD.

<p><b>Recommendation 1 :</b></p>	<p><b>Basic Criteria</b></p> <p>The AFI AIS/MAP TF/4 meeting then concluded that :</p> <p>a) whether the service provision is subcontracted or not:</p> <ul style="list-style-type: none"> <li>i. the service shall at all times be AFI States owned service. The service provider shall ensure the service is at all times perceived and recognized as being an AFI States provided service.</li> <li>ii. the service provision shall be an activity of cost-recovery nature and shall not generate profit on its own behalf (bearing in mind that the AFI CAD facilitates the safety, regularity and efficiency of international air navigation);</li> <li>iii. the service provision shall be subjected to a “ trial phase” of operation at the end of which the service may be reviewed if there has been insufficient take-up by clients and/or if the service levels have not been met;</li> <li>iv. all clients’ service level agreements shall be between the client and the Agency entrusted by the AFI States.</li> <li>v. the Agency shall not be allowed to sell, trade or commercialize the data and/or services of the AFI CAD on its own behalf and/or profit.</li> </ul>
<p><b>Recommendation 2 :</b></p>	<p><b>AFI CAD services</b></p> <p>That AFI CAD should provide the following major services:</p> <ul style="list-style-type: none"> <li>a) the International NOTAM Operation (INO) providing facilities for world-wide NOTAM, SNOWTAM, ASHTAM and AFIN or equivalent message handling and for pre-flight Information Bulletins (PIB) generation.</li> <li>b) the Static Data Operation (SDO) providing facilities for AFI Static Aeronautical Data/information handling and reporting. moreover, a minimum set of data is also maintained to allow the correct functioning of the INO system.</li> </ul>
<p><b>Recommendation 3 :</b></p>	<p><b>AFI CAD Clients</b></p> <p>That the recommended AFI CAD clients are the following:</p> <ul style="list-style-type: none"> <li>a) the Data Providers which are AIS Organizations providing aeronautical information to the Centralized AFI Database;</li> <li>b) the Data Users which are Air Transport Community and beyond.</li> </ul>
<p><b>Recommendation 4 :</b></p>	<p><b>Proposed AFI CAD System Design</b></p> <p>That the proposed AFI CAD System should be designed to provide the following:</p> <ul style="list-style-type: none"> <li>a) a single repository for aeronautical information and IAP elements of participating States;</li> <li>b) data questioning enhancement through multilevel consistent data checking processes.</li> </ul>

	<p>including cross border data verification;</p> <p>c) a secure channel/vehicle for timely and efficient electronic distribution of aeronautical information and IAIP elements;</p> <p>d) harmonization and interoperability will be ensured by common and standardized:</p> <ul style="list-style-type: none"> <li>- System interface and data exchange model (AIXM),</li> <li>- Static data model (AICM).</li> </ul>
<b>Recommendation 5 :</b>	<p><b>AFI CAD System Data Operations Services</b></p> <p>That the proposed System Data Operations Services will then provide the Centralized AFI Database clients with the following system services:</p> <p>a) support to edit and provide (to the system) aeronautical information;</p> <p>b) electronic access to and delivery of aeronautical information;</p> <p>c) browsing and downloading of participating State's aeronautical information; and</p> <p>d) generation of reports.</p>
<b>Recommendation 6 :</b>	<p><b>Access to AFI CAD</b></p> <p>That the Data Operations System Services will be accessed by clients via direct electronic interface in one or more of the following three ways:</p> <p>i. The Client Interface terminal (CIT). A terminal located at the client site, connected to the AFI CAD, and allowing download, modification (only by data providers) and reporting of aeronautical information as determined by the clients Service Level Agreement (SLA);</p> <p>ii. The Client Interface (CI). A technical toolkit allowing clients' own systems to access and interact with the AFI CAD to upload, download, modify (only Data Providers can modify) and report aeronautical information as determined by the clients' SLA;</p> <p>iii. INTERNET: Access to the Centralized AFI AIS Data Base will also be allowed via the Internet.</p>
<b>Recommendation 7 :</b>	<p><b>Development of AFI CAD user requirements specifications</b></p> <p>That States and/or Organizations in a position to do so, provide the required technical expertise to assist the Study Group to develop user requirements specifications (URS) for AFI CAD.</p>
<b>Recommendation 8 :</b>	<p><b>Scope of Services Provided</b></p> <p>That :</p> <p>a) Regarding the data operations service domains, the services provided shall ensure:</p> <p>i. Co-ordination of the resolution of data conflicts detected by the system data checking processes ;</p> <p>ii. for non-participating States (world wide) :</p> <ul style="list-style-type: none"> <li>- NOTAM processing (verification, validation, etc...)</li> <li>- Entry of the statistic data required by the system NOTAM function.</li> </ul> <p>b) As currently defined, the service does <u>not</u> include the provision of AIS services on behalf of participating States, i.e. the service <u>shall not comprise</u> the following activities :</p> <p>i. creation of NOTAMs</p> <p>ii. origination and publication of AIP, AIP supplements, AIP amendments, AIC and</p>

	<p>charts.</p> <p>c) As part of the provision of the service, the service provider will deliver to the centralized AFI Region AIS Data Base client the following services :</p> <ol style="list-style-type: none"> <li>i. 24 hour operational and technical help desk</li> <li>ii. Client training</li> <li>iii. Management and monitoring of the delivery of aeronautical information and AIP elements.</li> </ol>	
<p><b>Recommendation 9:</b></p>	<p><b>Institutional Arrangements</b></p> <p>That AFI States shall:</p> <ol style="list-style-type: none"> <li>a) Identify or set up an agency to develop, establish and operate the centralized AFI CAD;</li> <li>b) Determine the most effective and appropriate ways of funding, implementing and delivering the service.</li> <li>c) Commit to the timely provision of the required information to the AFI CAD; <i>Note: This shall not preclude them from providing the same data to other agents and/or entities.</i></li> <li>d) Continue to be responsible for providing an AIS singularly or jointly with one or more other States or by delegating the authority for the provision of the service to a non-governmental agency in accordance with Annex 15 of the Chicago Convention;</li> <li>e) Maintain the intellectual property rights for the data provided to the AFI CAD;</li> <li>f) Provide advice and other appropriate support to any administration outside the AFI Region to consider the introduction of an aeronautical information database system compatible with the AFI CAD;</li> <li>g) Promote the use of the AFI CAD by taking active steps to provide appropriate information to the public on the services available from the AFI CAD and encourage the use of the service;</li> <li>h) Define a legal and financial framework to be applied to States participating in the AFI CAD, and non members of the AFI Region States, covering contribution to the funding of the data operations service provision;</li> <li>i) Define a charging policy that: <ul style="list-style-type: none"> <li>- complies with the principle of free exchange of aeronautical information amongst States AIS, in accordance with Annex 15 of the Chicago Convention;</li> <li>- Continues to allow recovery by States of the costs incurred for the provision of AIS services;</li> <li>- Avoids double charging of the Data Users.</li> </ul> </li> </ol>	
<p><b>Recommendation 10 :</b></p>	<p><b>Suggestions for Financial Model</b></p> <ol style="list-style-type: none"> <li>a) <b>Business Plan</b> <ol style="list-style-type: none"> <li>i. <b>Setup Capital:</b> The business plan to be adopted must define the total set-up costs and where this capital will be obtained (eg Loans, Donations/Aid, State Contributions). Each states responsibility in this regard must be defined and be enforceable in any AFI CAD membership agreement</li> <li>ii. <b>Financial Sustainability:</b> The business plan to be adopted must also define how financial sustainability will be ensured ( eg by State Contributions, fees to be charged for access by users, en-route charges, etc). This must also show how continuous improvement and safety monitoring systems will be maintained and funded.</li> <li>iii. <b>Service Provider:</b> The resources that the Service Provider will bring to the project must be defined and enforced in the Service Providers contract. It</li> </ol> </li> </ol>	

	<p>should not be the sole responsibility of the member states or the Agency to fund this project as it should be based on the User/ Beneficiary Pays principle.</p> <p>b) <b>Financial Plans:</b> The financial model for AFI CAD as discussed above also needs to address the following operational considerations</p> <p>i. <b>Continuous Operational Cost Recovery:</b> Continuous Operational Cost Recovery must be ensured as a minimum requirement. If this does not occur AFI CAD will not be a viable concern.</p> <p>ii. <b>Cost Benefit Analysis:</b> A Cost Benefit Analysis reflecting the advantages and disadvantages of all business models discussed above needs to be performed before a particular model can be recommended and accepted by AFI CAD member states.</p> <p>iii. <b>Future Cost Benefits:</b> To AFI CAD (eg via provision of services additional to what is presently being provided) will need to be assessed to ensure organizational structuring to take advantage of these future benefits.</p>
<p><b>Recommendation 11 :</b></p>	<p><b>Evaluation criteria for the identification of the AFI-CAD Operating Centers:</b></p> <ol style="list-style-type: none"> <li>1. Geographical Location</li> <li>2. Communication Infrastructure</li> <li>3. Sustainability of Economy</li> <li>4. Political Stability</li> <li>5. Information Technology – currently available and sustainable</li> <li>6. Provision of training – Training ability / infrastructure</li> <li>7. Power supply :       <ul style="list-style-type: none"> <li>– availability</li> <li>– reliability</li> <li>– sustainability</li> </ul> </li> <li>8. Human Resource availability –       <ol style="list-style-type: none"> <li>i. AIM</li> <li>ii. Management</li> <li>iii. Project Management</li> <li>iv. Information Technology</li> <li>v. Training</li> </ol> </li> <li>9. Financial availability / sustainability</li> <li>10. Previous experience – Track record</li> <li>11. Common consensus</li> <li>12. Infrastructure – Buildings</li> <li>13. Evaluation to be conducted by an International Organization with a proven track record of successfully completing similar evaluations (e.g. ICAO/ United Nations/ EUROCONTROL, etc.)</li> </ol>
<p><b>Recommendation 12 :</b></p>	<p><b>Introduction of QMS by AFI-CAD States</b></p> <p>That each contracting AFI - CAD Member State shall take all necessary measures to introduce a properly organized QMS containing procedures, processes and resources necessary to implement the quality management at each function stage. The execution of such quality management shall be in accordance with Annex 15, Chapter 3 paragraph 3.2.1.</p>

<p><b>Recommendation 13 :</b></p>	<p><b>Measurement tool for evaluation of AIS Services</b></p> <p>That Appendix K to APIRG/15 report as per Attachment A to DP/7 be adopted by AFI States as a measurement tool for evaluation of services in order to provide room for improvement and the prevention of non-conformity.</p>
<p><b>Recommendation 14 :</b></p>	<p><b>Framework for development of the QMS</b></p> <p>That AFI - CAD member States adopt the template for a project proposal in Appendix XX to Attachment A of DP/7(AFI-CAD/2) as a framework for development of the QMS in terms of defining scope, assessing the potential benefits, continuing the program, determining the roles and responsibilities of those involved in the development and implementation of the QMS, and specifying deliverables, target dates and the resources needed.</p>
<p><b>Recommendation 15 :</b></p>	<p><b>Timelines for the development and implementation of the AFI - CAD</b></p> <p>That ICAO would synchronize the most suitable timelines for the development and implementation of the AFI - CAD based on the evolution of events.</p>
<p><b>Recommendation 16 :</b></p>	<p><b>Development of the required training modules</b></p> <p>That AFI - CAD through the cooperation with GroupEAD develops the required training modules for AFI-CAD member States.</p> <p>(The aforementioned refers to Operational Training on the AFI CAD, yet AIM training also needs to be standardized utilizing all available material from sources worldwide.)</p>
<p><b>Recommendation 17 :</b></p>	<p><b>Development of the required format of a service level agreement</b></p> <p>That AFI - CAD through the cooperation and agreement between the various AFI States develops the required format of a service level agreement for the AFI - CAD member States. Existing SLA such as those utilized by Group EAD and EUROCONTROL could be considered.</p>
<p><b>Recommendation 18 :</b></p>	<p><b>Compilation of the URS Document :</b></p> <p>That it is therefore necessary to compile the user and other requirements in one document based on the input from:</p> <ul style="list-style-type: none"> <li>- the Framework and Guidance Material of the AFI-CAD, as per Appendix H of the APIRG/16 Report,</li> <li>- the EUROCONTROL URS Documents (General, Common Services, Static Data, NOTAM, AIP, Charting),</li> <li>- the AFI States based on a filled Questionnaires (cf. DP/04) to include further AFI Requirements.</li> </ul>

<p><b>Recommendation 19:</b></p>	<p><b>Institutional Framework:</b></p> <ul style="list-style-type: none"> <li>a. Establishment of a Supervisory Management Board composed of Technical Representatives appointed by the Civil Aviation Directors. Such a Supervisory Management Board should also be empowered to make decisions.</li> <li>b. Appoint a Technical team competitively, to participate in the project processes from its initiation stage to completion, so that all members gain an understanding of the project tasks and objectives</li> <li>c. Appoint Service Provider competitively to develop, implement and manage the AFI-CAD. The Service Provider may also take responsibility for Hardware and Software maintenance</li> </ul>
<p><b>Recommendation 20 :</b></p>	<p><b>Procurement Process:</b></p> <ul style="list-style-type: none"> <li>• That the Business plan includes the development of procurement process and procedures acceptable to participating member states.</li> <li>• That the Business Plan includes the development of a logical acquisition Strategy, which would include an efficient and transparent procurement process for implementation of the AFI-CAD</li> <li>• That participating states should ensure that the procurement is done in a transparent manner acceptable to the participating states.</li> </ul>
<p><b>Recommendation 21:</b></p>	<p><b>Location of AFI-CAD</b></p> <p>That the Supervisory Management Board should determine the centre and sub-centers location subject to the agreed set criteria listed in Recommendation 11 . There is need to take into account the geographical locations and requisite infrastructure currently available.</p>
<p><b>Recommendation 22 :</b></p>	<p><b>Realization of the AFI-CAD</b></p> <p>That in order to realize the maximum benefits of the AFI Region centralized AIS Database all AFI Region States need to fully participate in its development, implementation and operations.</p>

**4th INFORMAL CONSULTATIVE MEETING OF THE AFI REGION STUDY GROUP ON THE  
ESTABLISHMENT OF A CENTRALISED AFI REGION AIS DATA BASE**

(Johannesburg 26 June 2009)

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**APPENDIX C-2**

ATTACHMENT to State letter T2/8, 1-0303 dated 15 April 2009

**QUESTIONNAIRE ABOUT ADDITIONAL AFI REQUIREMENTS FOR THE AFI CENTRALISED AERONAUTICAL DATABASE**

Name of State/Organisation: .....

Have your AIS Expert(s) attended the AFI-CAD Study Group meeting(s)  if applicable please tick - ✓ -

Kindly include your suggestions on new ideas or requirements. If necessary, please add additional pages.

1. Additional AFI User Requirements:

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.....  
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2. Additional AFI Technical Requirements:

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3. Additional AFI Other Requirements:

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.....  
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4. Comments and additional information:

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.....

APPENDIX-D

Ref: T2/8.1-0309

21 April 2009

Subject: Current Cost of AIS Systems and AIS Systems Operations in the ICAO AFI Region

Action required: a) provide information in accordance with Attached Questionnaire  
b) Replies to reach ICAO Regional Office Dakar not later than 29 May 2009

Sir/Madam,

Pursuant to the outcome of the Third AFI Region Study Group on the Establishment of a Centralized AFI Region AIS Database held in Dakar, Senegal, 7-8 October 2008, I have the honour to draw your attention to the drafting of the business and financial Plan for the AFI-CAD Project as specified by Conclusion 16/42 of the APIRG/16 meeting.

Noting that APIRG/16 has adopted the Framework and Guidance Material for the AFI-CAD Project, Conclusion 16/42 requires that a Business and Financial Model be developed as an input to the AFI-CAD Business Plan. Therefore, in order to fulfil the development of the AFI-CAD Business and Financial Model, States are requested to kindly submit their inputs on existing AIS cost and AIS infrastructure data on the attached questionnaire.

I would be grateful for replies to the attached questionnaire to reach the regional office not later than 29 May 2009. States submission of inputs on existing AIS cost and AIS infrastructure data are very essential to this plan and will be of significant help to the AFI-CAD Project.

Please accept, Sir/Madam, the assurances of my highest consideration.

A.O. Gantaye  
Regional Director  
Western and Central African Office

Enclosure:  
- Questionnaire

\\Wapfl\wacaf\ata\2009\ASSIST\DAKO\AIS\_MAP\questionnaire on attachment-E.doc

QUESTIONNAIRE ABOUT EXISTING AIS COST AND AIS INFRASTRUCTURE FOR THE AFI CENTRALISED AERONAUTICAL DATABASE BUSINESS AND FINANCIAL PLAN

Name of State/Organisation: .....

Have your AIS Expert(s) attended the AFI CAD Study Group meeting(s)  if applicable please tick - ✓ -

Kindly include your inputs on existing cost and infrastructure data. If necessary, please add additional pages.

5. Existing AIS Cost:

1. Purchase Cost ..... USD

2. Installation Cost ..... USD

3. Maintenance and Inspection Cost ..... USD

4. Annual Communication Cost ..... USD

5. Refurbishment Cost ..... USD

6. Decommissioning Cost ..... USD

7. Life Cycle ..... Years

6. General Additional AIS Cost:

2.1 Communication ..... USD

2.2 Training ..... USD

2.3 Restructuring ..... USD

2.4 Staffing ..... USD

2.5 Others ..... USD

7. AIS Infrastructure:

1. Number of Personnel .....

2. Number of Servers .....

3. Number of Working Positions .....

4. AIS Centres Served .....

5. Aerodrome ARCOs Served .....

8. Comments and additional information

.....  
 .....  
 .....