Appendix B

**FIRST MEETING OF THE TASK FORCE ON THE INTEGRATED REGIONAL
TELECOMMUNICATION INFRASTRUCTURE PROJECT
(Pretoria, South Africa, 26-28 June 2013)**

Report of Technical Workgroup

1) Background of Work completed by the Technical Group of the AFI Aeronautical VSAT Managers
   (Douala, Cameroon, 28 February – 01 March 2012)

   a) Design of ATN Overlay Architecture:

      i)   Based on the architecture design of original ATN Task Force

      ii) Circuits were inserted to ensure at least two interconnections between adjacent networks

      iii) Additional circuits included to provide further redundancy

      iv) The results are shown in Appendix 3.4C to APIRG/18 report.

   b) The technical solution for the ATN overlay network was based on the following fundamental
      criteria:
      i)   All four networks (AFISNET, CAFSAT, SADC, and NAFISAT) have made substantial
           investment in existing infrastructure, which must be retained and utilized.
      ii) Three of the networks operate on the same satellite i.e. IS 1002 which will ensure seamless
           operation
      iii) A single satellite access method is proposed for the technical solution to ensure interoperability
      iv) Although the ATN network will mainly support IP based applications, legacy protocols must
           continue to be supported
      v)   The overlay network must be secure, i.e. independent of terrestrial services, etc.

   c) The cost estimates calculated by the Technical Group are therefore based on the above criteria. The
      cost furthermore include the following line items:
      i)   RF Outdoor Equipment (SSPA where required)
      ii)   Indoor Unit
      iii) Modem/Frame Relay Access Device
      iv)   Equipment Rack and Miscellaneous
      v)   Un-interrupted Power Supply (UPS)
      vi)   Spare Equipment
      vii) Site Installation, Integration and Commissioning
      viii)   Engineering, Project Management and Training
      ix)   Packing, Freight and Insurance
      x)   Duties and Taxes

   d) The cost estimates of the proposed solution are shown in the table 1 below: The estimates are
      based on the following spares options:
      i)   Option 1: Total centralized maintenance, i.e. one set per network
      ii) Option 2: Total decentralized maintenance, i.e. one set per VSAT node

iii) Option 3: Hybrid consisting of:
    (1) Decentralised maintenance for CAFSAT & NAFISAT
    (2) Centralized maintenance for SADC and NAFISAT
iv) Table 1 below is a summary of the initial cost calculations for the AFI ATN overlay network

Table 1

Cost Comparison of VSAT Solutions for an AFI ATN Network - IDU in 1 + 1 Configuration					
Region -->	NAFISAT Region	SADC Region	AFISNET Region	CAFSAT Region	Total Cost for AFI ATN Network
Excluding Spares Options					
Option D (TDMA) IDU 7000	$ 560,685.91	$ 610,341.82	$ 631,273.03	$ 604,376.50	$ 2,406,677.26
Including Option 1 Spares					
Option D (TDMA) IDU 7000	$ 583,615.91	$ 671,671.82	$ 692,603.03	$ 627,306.50	$ 2,575,197.26
Including Option 2 Spares					
Option D (TDMA) IDU 7000	$ 755,865.91	$ 920,721.82	$ 1,016,313.03	$ 767,026.50	$ 3,459,927.26
Including Option 3 Spares					
Option D (TDMA) IDU 7000	$ 593,215.91	$ 662,071.82	$ 1,016,313.03	$ 767,026.50	$ 3,038,627.26

2) Way Forward of Technical Group of Integrated Regional Telecommunication Infrastructure Task Force

The following topics must be addressed by the Technical Group and timelines proposed:

a) Revise and Provide input to Financial and Administrative Groups:
    i) Revisit the calculations shown in table 4.1 above, done for the recommended technical solution, as well as costing for the maintenance options, and submit to Financial & Administrative groups – Target date: **August 2013**

b) Revision of the AFI ATN routing architecture
    i) The AFI ATN routing architecture must be revised to include circuits between Addis Ababa and Cairo/Johannesburg. As part of the process ATNS will discuss the implementation of the AMHS circuits and the conducting of trials with Ethiopia.
    ii) Revise the AFI ATN architecture, taking into account the re-alignment of the NAFISAT ANPs and SUPPs to the EUR and MID Regions – **ongoing**

c) Complete work in respect of maintenance options
    i) This is still not completed and will be addressed by Technical Group – Target date: **November 2013**

d) Review and update the status of implementation of the best practices as adopted by the APIRG/18 Meeting

      i)   Initial analyses to be revisited by the Technical Group and report drafted – Target date: **November 2013**

e)   Conduct a gap analysis against agreed best practices for networks
      i)   Initial analyses to be revisited by Technical Group and a report drafted
      ii)   Backup of satellite services: Technical discussions to be conducted with Intelsat to finalise calculations of backup options. It is foreseen that additional cost will have to be incurred that is not included in the initial cost calculation for the ATN Overlay – Target Date: **November 2013**

f)   Develop a convergence plan with priorities and timelines to close identified gaps & other work for technical group
      i)   Align timelines with the timelines proposed in the AMHS Task Force:
          (1) 2012 to 2014 – National deployment – domestic AMHS
          (2) 2013 – 2015 - Regional deployment – AFI States will implement MTA to MTA, AMHS connections using TCP/IP via established AFI networks
          (3) 2014 – 2018 – Inter-regional deployment – ATN/IPS connections

g)   Alignment of Regional Air Navigation Plans & Supplementary Procedures:
      i)   Analyse the possible impact of the alignment of ANPs and SUPPs on its work
      ii)   Agree on the way forward for the development of an integrated regional telecommunication infrastructure for the Africa-Indian Ocean Region:
      iii) Amendment proposal for AFI Regional Air Navigation Plan as appropriate
      Architecture will have to be revised taking into account the re-alignment of the NAFISAT states, refer to paragraph 2 b) above

3)   Timelines for Technical Group
    a)   The timelines based on the target dates as proposed are shown in the Gantt chart below:

ID	Task Name	Duration	Start	Finish	2014				2015				2016				2017				2018				2019
					Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1	Time Frame for Technical Team	1437 days?	Fri 13-06-28	Mon 18-12-31																				
2	Revisit cost estimates & Provide input to Financial & Admin. Groups	46 days	Mon 13-07-01	Mon 13-09-02																				
3	Revise AFI ATN Routing Atchitecture	110 days	Mon 13-07-01	Sat 13-11-30																				
4	Complete work i.r.o. maintenance options	110 days	Mon 13-07-01	Sat 13-11-30																				
5	Review and update the status of implementation of the best practices as adopte	110 days	Mon 13-07-01	Sat 13-11-30																				
6	Conduct a gap analysis against agreed best practices for networks	110 days	Mon 13-07-01	Sat 13-11-30																				
7	Develop a convergence plan with priorities and timelines to close ider	1437 days?	Fri 13-06-28	Mon 18-12-31																				
8	2012 to 2014 – National deployment	393 days?	Mon 13-07-01	Wed 14-12-31																				
9	2013 – 2015 - Regional deployment	655 days?	Fri 13-06-28	Thu 15-12-31																				
10	2014 – 2018 – Inter-regional deployment	1304 days?	Wed 14-01-01	Mon 18-12-31																				
11	Analyze possible impact of the alignment of ANPs and SUPPs on its work	284 days	Mon 13-07-01	Thu 14-07-31																				