

INTERNATIONAL CIVIL AVIATION ORGANIZATION



**COORDINATION MEETING ON THE MIGRATION OF AFISNET NETWORK TO
INTELSAT SATELLITE IS 10-02**

(Dakar, 12 – 13 July 2004)

R E P O R T

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History of the meeting

ii-1 Introduction

ii-1.1 The coordination meeting on the migration of AFISNET network to Intelsat Satellite IS 10-02 at 359° East was held in Dakar, from 12 to 13 April 2004, at the ICAO Regional Office for Western and Central Africa.

Opening

ii-1.2 The meeting was officially opened by Mr. A.K. Mensah, Deputy Regional Director of the ICAO Regional Office, Dakar who welcomed the participants and wished them fruitful deliberations. In his welcome address, Mr. Mensah reminded the meeting of APIRG Conclusion 14/12 calling for consolidation of sub-regional aeronautical VSAT networks as a means of improving AFS connectivity and efficiency, reducing costs related to communications infrastructure, and of the agreement reached at the regional planning meeting between VSAT networks managing administrations and organizations and INTELSAT (Johannesburg, South Africa from 31 March to 1 April 2004) that AFISNET network should migrate to IS 10-02 in the first phase whilst other sub-regional VSAT networks: CAFSAT, NAFISAT, SADC will be established on Satellite IS 10-02 at a later stage.

ii-1.2 Furthermore, Mr. Mensah emphasized the need for very close coordination between all stakeholders to achieve a successful migration of AFISNET 55 earth stations implemented in 25 countries throughout the African continent and Indian Ocean. He therefore called upon AFISNET Administrations and Organizations for their continuing support to the migration process until full completion. The necessity of establishing a common migration strategy and contingency measures for ensuring continuity of services was underscored.

Officers and Secretariat

ii-1.3 Mr. Prosper Zo'o-Minto'o, Regional Officer, Communications, navigation and surveillance (CNS) from the ICAO Regional Office, Dakar was the Secretary of the meeting. Mrs. Mary A. Obeng, Regional Officer CNS from the same Office, assisted him. Mr. Ibrahim Usman. Auyo, Regional Officer, Air traffic management (ATM) also attended the meeting.

ii-2 Attendance

ii-2.1 The meeting was attended by 13 participants from 3 contracting States (Ghana, Nigeria, South Africa) and 1 international organization (ASECNA).

ii-2.2 The List of participants is shown at **Appendix A** to this report.

ii-3 Working language

ii-3.1 The meeting was conducted in English and documentation was made available in this language.

ii-4 Agenda

ii-4.1 The meeting adopted the following agenda:

- Agenda Item 1: Commitment of AFISNET Administrations and Organizations
- Agenda Item 2: Discussion of migration implementation scenarios and implementation arrangements adopted by AFISNET Administrations and Organizations
- Agenda Item 3: Migration requirements
- 3.1 Status of preparedness of AFISNET earth stations
 - 3.2 Timescales of implementation
 - 3.3 Transition management
 - 3.4 New frequency plan and requirements for additional capacity on IS 10-02 for future growth as required
- Agenda Item 4: Development of material for the publication of aeronautical Information on migration to IS 10-02
- Agenda Item 5: Any other business

ii-5 Conclusions

ii-5.1 The meeting adopted the following conclusions:

Agenda Item 1:	
Commitment of AFISNET Administrations and Organizations	
Conclusion AFI IS 10.02/01:	Support to the migration process
<ul style="list-style-type: none"> • That AFISNET Administrations and Organizations undertake to provide continued support to the process of moving to a new satellite IS 10-02, with a view to achieving an optimal, integrated and seamless AFI satellite telecommunication network meeting all ANP requirements. 	
Agenda Item 2:	
Discussion of migration implementation scenarios and implementation arrangements adopted by AFISNET Administrations and Organizations	
Conclusion AFI IS 10.02/02:	Implementation scenario for migration
<ul style="list-style-type: none"> • That a synchronized implementation be preferably adopted to migrate AFISNET services in two phases as follows: <ol style="list-style-type: none"> a) Phase I: Southern AFI and Indian Ocean earth stations from satellite IS 707 to satellite IS 10-02; b) Phase II: Western and Central AFI earth stations from satellite IS 903 to satellite IS 10-02. <p><i>Note: Due account will be taken of technicality constraints in some States when defining the detailed migration scenario in phase II.</i></p>	

Conclusion AFI IS 10.02/03: Implementation arrangements for migration
<ul style="list-style-type: none"> • That: <ul style="list-style-type: none"> a) France (La Reunion and Mayotte), ASECNA and Roberts FIR will contract migration activities; and b) Ghana, Nigeria and South Africa will use in-house resources as much as possible to perform migration activities
Agenda Item 3: Migration requirements
Conclusion AFI IS 10.02/04: Planning time frame
<ul style="list-style-type: none"> • That : <ul style="list-style-type: none"> a) AFISNET Administrations and Organizations take all necessary steps to achieve the network migration within an extra-time of 30 days from IS 10-02's start of operations (expected by 15 August 2004) as initially allowed by INTELSAT (meaning before 30 September 2004); and b) Taking into consideration the amount of work involved and the safety-of-life nature of civil aviation services supported by AFISNET network, the ICAO Regional Office, Dakar submit to INTELSAT a request for additional sixty (60) days, i.e. up to 30 November 2004, in order for AFISNET members to meet all migration requirements.
Conclusion AFI IS 10.02/05: Transition planning
<ul style="list-style-type: none"> • That the planning shown at Appendix B to this report be adopted by all AFISNET Administrations and Organizations as a baseline to achieve the timely implementation of migration requirements.
Conclusion AFI IS 10.02/06: Transition coordination
<ul style="list-style-type: none"> • That: <ul style="list-style-type: none"> a) the following levels of coordination be established to address transitional matters: <ol style="list-style-type: none"> 1. States: Ghana, La Reunion, Mauritius, Mayotte, Nigeria, South Africa; 2. Groupings of States: ASECNA, Roberts FIR; 3. AFI Region: ICAO Offices; 4. Intelsat: AOR/TOCC; and b) no later than 15 August 2004, AFISNET Administrations and Organizations: <ol style="list-style-type: none"> 1. complete and amend as necessary the draft list of focal points of contact shown at Appendix...to this report; and 2. forward their inputs to the ICAO Regional Office, Dakar for compilation and dispatching.
Conclusion AFI IS 10.02/07: Cooperative approach to personnel training
<ul style="list-style-type: none"> • That Ghana should approach ASECNA and NAMA to explore ways and means of organizing joint training of earth stations personnel on duties and responsibilities related to the migration process no later than 10 September 2004.

Conclusion AFI IS 10.02/08: Accuracy of the new frequency plan and requirements for additional capacity
<ul style="list-style-type: none">• That, as a matter of urgency, AFISNET Administrations and Organizations:<ul style="list-style-type: none">a) review in detail the new frequency plan for the relocation of services on IS 10-02 to ascertain its accuracy, and coordinate amendments with INTELSAT, if need be; andb) submit to INTELSAT their requirements for additional capacity on IS 10-02 for future growth as required.
Conclusion AFI IS 10.02/09: Assessment of migration impact on ATS communications
<ul style="list-style-type: none">• That assessment of migration impact on ATS communications (AFTN, ATS/DS) be carried out using connectivity matrices at Appendix C to this report.
Conclusion AFI IS 10.02/10: Interoperability/Compatibility requirement for alternate AFS means of communications
<ul style="list-style-type: none">• That AFISNET Administrations and Organizations ascertain that the alternate means of AFS communications to be utilized by ATS units during migration are interoperable and compatible.
Conclusion AFI IS 10.02/11: Draft model NOTAM
<ul style="list-style-type: none">• That AFISNET Administrations and Organizations adopt the draft model NOTAM shown at Appendix D to this report to inform users and other ATS units of available alternate communication facilities to use during migration.

Agenda Item 1: Commitment of AFISNET Administrations and Organizations

1.1 The meeting recalled that pursuant to APIRG Conclusion 14/12, the Regional Planning Meeting on the integration of sub-regional aeronautical VSAT networks between VSAT networks managing administrations and organizations and INTELSAT was held in Johannesburg, South Africa from 31 March to 1 April 2004. It particularly noted that INTELSAT satellite IS 10-02 at 359 degrees had been confirmed as a short-term opportunity to meet the requirement for a consolidated aeronautical VSAT network region-wide. It also noted that only AFISNET network could migrate to IS 10-02 in the first phase, taking due account of technical and institutional aspects of the existing VSAT networks.

1.2 The meeting recognized the significant efforts so far made by AFISNET member Administrations and Organizations to support the migration planning process by participating in and/or hosting most of the previous preparatory meetings. It felt that following the successful launch of satellite IS 10-02 in June 2004, there was the need for AFISNET members to confirm their commitment to achieve the migration of their respective earth stations to the new satellite. In this regard, it noted with satisfaction that all AFISNET members represented in the meeting reiterated their full commitment to provide necessary support to the process of migrating to IS 10-02¹. It also recalled that Roberts FIR also had informed the preparatory meeting (Dakar, 9-10 March 2004) of its full commitment to the migration process.

1.3 The meeting emphasized on the necessity for all AFISNET earth stations to point over the new satellite at the same time in order to prevent the regional air navigation system from a degraded situation where most of AFTN and ATS/DS critical links would be discontinued, thus causing a backwards step to the 1980s with negative impact on flight safety.

1.4 The following conclusion was adopted :

Conclusion AFI IS 10.02/01: Support to the migration process

- **That AFISNET Administrations and Organizations undertake to provide continued support to the process of moving to a new satellite IS 10-02, with a view to achieving an optimal, integrated and seamless AFI satellite telecommunication network meeting all ANP requirements.**

¹ At the time of writing this report, Mauritius has also indicated its commitment to support the migration process.

Agenda Item 2: AFISNET migration: Implementation scenario and implementation arrangements

2.1 Under this agenda item, the meeting considered the implementation scenarios and implementation arrangements adopted or to be adopted by AFISNET Administrations and Organizations to achieve the network migration to satellite IS 10-02 at 359 degrees East.

Implementation scenarios

2.2 The meeting especially analyzed the advantages of, and prerequisites for migrating the services to IS 10.02 at the same time as proposed by the industry, as compared to an FIR based step-by-step approach as recommended by the Regional Planning Meeting on the integration of aeronautical VSAT networks (Johannesburg, 31 March-1 April 2004). Following discussions, the meeting opted for a synchronized migration of IS 7.07 services (Indian Ocean, South Africa) and IS 9.03 services (Western and Central AFI) in two phases, in order to minimize the impact on air traffic services. The following conclusion was adopted:

Conclusion AFI IS 10.02/02: Implementation scenario for migration

- That a synchronized implementation be preferably adopted to migrate AFISNET services in two phases as follows:
 - a) Phase I: South Africa and Indian Ocean earth stations from satellite IS 707 to satellite IS 10-02;
 - b) Phase II: Western and Central AFI earth stations from satellite IS 903 to satellite IS 10-02.

Note: Due account will be taken of technicality constraints in some States when defining the detailed migration scenario in phase II.

Implementation arrangements

2.3 The meeting reviewed the arrangements made or being made by AFISNET Administrations and Organizations intend to implement migration. It recalled SNMC/TWG Conclusion 2 requesting the network suppliers, namely ALCATEL and CORIS companies to prepare turn-key offers for consideration by AFISNET members, in view of a possible joint financing mechanism under ICAO coordination.

2.4 In accordance with SNMC/TWG Conclusion 2, proposals from CORIS including pricing have been submitted to Ghana (GCAA), Mauritius, Nigeria (NAMA), La Reunion (France) and ASECNA in April/May 2004¹. Indications were that some States also received offers from ALCATEL. The meeting noted that a joint financing mechanism under ICAO coordination could not be timely implemented. Mindful of the responsibilities of air navigation service providers as to whether they intend to address migration by resorting to technical assistance from the industry, or by using in-house resources, the meeting therefore invited AFISNET members to provide it with the relevant information concerning their implementation arrangements. Based on the information provided, the meeting adopted the following conclusion:

¹ Copy of CORIS proposals was also sent to the ICAO Regional Office, as requested by the preparatory meeting.

Conclusion AFI IS 10.02/03: Implementation arrangements for migration

- That:
 - a) France (La Reunion and Mayotte), Mauritius², ASECNA and Roberts FIR will contract migration activities; and
 - b) Ghana, Nigeria³ and South Africa⁴ will use in-house resources as much as possible to perform migration activities
-

² To be confirmed by CAA, Mauritius.

³ To be confirmed by NAMA, Nigeria

⁴ To be confirmed by ATNS, South Africa

Agenda Item 3: Migration requirements**Status of preparedness of AFISNET earth stations**

3.1 The meeting was apprised of plans developed by ASECNA, ATNS (South Africa), GCCA (Ghana) and NAMA (Nigeria) with a view to migrating from their currently operated satellites (i.e. IS 9-03 to IS 7-07) to satellite IS 10-02. ASECNA, GCAA and NAMA particularly provided the meeting with detailed information on their respective plans of action to address migration to IS 10-02. Preparatory activities include site analyses, studies for re-pointing antennas, frequency change, polarization change, implementation arrangements, evaluation of bandwidth requirements, staffing, training of personnel, coordination with adjacent centres and INTELSAT (new IBS carriers, method of transfer, contingency measures), etc.

Transition steps

3.2 Basically, the meeting recommended the following steps be considered in addressing migration issues:

- a) **Step 1:** pre-implementation activities: preparatory activities as listed in paragraph 3.1 as listed here above, status of operation of satellite-based facilities (AFS, AMS) using IS 9-03 and IS 7-07;
- b) **Step 2:** implementation activities: activation of contingency measures, migration of services to IS 10-02 as per **Table** below:

	To IS 10-02, Transponder 20/20 HA/HA	Remarks
From IS 7-07, Transponder 86/86 GB/GB	<ol style="list-style-type: none"> 1. Turn off transmit all involved carriers 2. Change polarization 3. Tune to new frequencies 4. Monitoring of communications on IS 10-02 with all correspondents 	<p>Day and time to be defined with INTELSAT AOR/TOCC</p> <p>Report problems (if any) to INTELSAT IOC</p>
From IS 9-03, Transponder 20/20 HA/HA	<ol style="list-style-type: none"> 1. Turn off transmit all involved carriers 2. Change polarization 3. Tune to new frequencies 4. Swing all antennas to 359° East location and radiate new carriers 5. Monitoring of communications on IS 10-02 with all correspondents 	<p>Day and time to be defined with INTELSAT AOR/TOCC</p> <p>Report problems (if any) to INTELSAT IOC to INTELSAT IOC</p>
From IS 9-03, Transponder 105/105 ZB/ZB	<ol style="list-style-type: none"> 1. Turn off transmit all involved carriers 2. Change polarization 3. Tune to new frequencies 4. Swing all antennas to 359° East location and radiate new carriers 5. Monitoring of communications on IS 10-02 with all correspondents 	<p>Day and time to be defined with INTELSAT AOR/TOCC</p> <p>Report problems (if any) to INTELSAT IOC to INTELSAT IOC</p>

- c) **Step 3:** post-implementation activities: status of operation of satellite-based facilities (AFS, AMS) using IS 10-02, resumption of normal services, de-activation of contingency measures.

Timescales of implementation

3.3 The meeting was reminded of INTELSAT's statement at the Regional Planning Meeting (Johannesburg, South Africa, 31 March-1 April 2004) that the maximum overlap time for the usage of two satellites during the transition will be thirty (30) days, following which no service will be provided in the previous satellites/capacity. Based on the information provided by ASECNA, GCAA/Ghana and NAMA/Nigeria on their respective plans of action, it was of the view that sixty (60) more days will be necessary to achieve migration to IS 10-02, taking due account of the safety-of-life nature of civil aviation services and the time necessitated to address key elements such as:

- finalization of implementation arrangements, including the signing of technical assistance contracts;
- procurement of equipment/parts;
- training of earth stations' personnel;
- technicalities;
- coordination with adjacent centres;
- coordination with airspace users (publication of aeronautical information);
- site preparation for antenna repositioning;
- preparation of contingency measures;
- etc.

3.4 The meeting considered the proposed target dates of 24 August 2004 and 24 September to 30 October 2004 to migrate IS 7-07 and 9-03 services respectively, in order to comply with 30-day extra-time, and felt that these dates would certainly be unrealistic. It therefore agreed that the ICAO Regional Office should submit to INTELSAT a request for additional sixty (60) days for AFISNET migration to be safely and correctly implemented. The following conclusions were adopted accordingly.

Conclusion AFI IS 10.02/04: Planning time frame

That :

- a) **AFISNET Administrations and Organizations take all necessary steps to achieve the network migration within an extra-time of 30 days from IS 10-02's start of operations (expected by 15 August 2004) as initially allowed by INTELSAT (meaning before 30 September 2004); and**
- b) **Taking into consideration the amount of work involved and the safety-of-life nature of civil aviation services supported by AFISNET network, the ICAO Regional Office, Dakar submit to INTELSAT a request for additional sixty (60) days, i.e. up to 30 November 2004, in order for AFISNET members to meet all migration requirements.**

Conclusion AFI IS 10.02/05: Transition planning

That the planning shown at Appendix B to this report be adopted by all AFISNET Administrations and Organizations as a baseline to achieve the timely implementation of migration requirements.

Transition management

3.5 The meeting recognized that, during the transition process, coordination will be of essence between all parties concerned (INTELSAT, network managers, network stations) at both management and technical levels. It therefore re-iterated the need to establish migration teams with focal points of contact with a view to monitoring and ensuring that the necessary steps are properly addressed during the transition process.

3.6 The meeting particularly agreed that full preparation and presence of personnel at sites will be determining factors to achieve a successful migration to IS 10-02 at 359 degrees East. It recalled the following instructions to be applied by AFISNET centres during migration:

- a) Turn off transmit carriers of all sites at a time to be specified by -INTELSAT Technical Operations Control Centre for Atlantic Ocean Region (AOR/TOCC);
- b) Tune to new frequencies and change polarization as required;
- c) Swing antenna to the 359 degrees East location as required and to radiate carriers on 359 degrees;
- d) Monitor on IS 10-02 the communication links with all correspondents and report to the INTELSAT Operations Center if there is a problem.

3.7 The meeting also agreed on the necessity of having a coordination centre at the ICAO Regional Office to ensure coordination between AFISNET entities.

3.8 The following conclusions were adopted:

Conclusion AFI IS 10.02/06: Transition coordination

That:

a) the following levels of coordination be established to address transitional matters:

- 1) **States: Ghana, La Reunion, Mauritius, Mayotte, Nigeria, South Africa;**
Groupings of States: ASECNA, Roberts FIR;
- 2) **AFI Region: ICAO Offices;**
- 3) **Intelsat: AOR/TOCC; and**

b) no later than 15 August 2004, AFISNET Administrations and Organizations:

- 1) **complete and amend as necessary the draft list of focal points of contact shown at Appendix...to this report; and**
- 2) **forward their inputs to the ICAO Regional Office, Dakar for compilation and dispatching.**

Training of personnel

3.9 The meeting exchanged views on possibilities of organizing joint training sessions for earth stations personnel as was recommended at the Dakar preparatory meeting (9 - March 2004). Following discussions and based on the information provided to the meeting, the following conclusion was adopted:

Conclusion AFI IS 10.02/07: Cooperative approach to personnel training

That GCAA/Ghana should approach ASECNA and NAMA/Nigeria to explore ways and means of organizing joint training of earth stations personnel on duties and responsibilities related to the migration process no later than 10 September 2004.

New frequency plan/Bandwidth requirements

3.10 Mindful of recommendations from the previous preparatory meetings, the meeting called attention on the necessity for AFISNET Administrations and Organizations to verify the accuracy of the new frequency plan prepared by INTELSAT for the relocation of services on IS 10-02. AFISNET Administrations and Organizations were also invited to secure their requirements for additional capacity on IS 10-02 for future growth by submitting these requirements to INTELSAT as a matter of urgency. The following conclusion was adopted:

Conclusion AFI IS 10.02/08: Accuracy of the new frequency plan and requirements for additional capacity

That, as a matter of urgency, AFISNET Administrations and Organizations:

- 1. review in detail the new frequency plan for the relocation of services on IS 10-02 to ascertain its accuracy, and coordinate amendments with adjacent centres and INTELSAT, as required; and**
- 2. submit to INTELSAT their requirements for additional capacity on IS 10-02 for future growth, as required.**

Agenda Item 4: Development of material for the publication of aeronautical information on migration to IS 10-02

Impact analysis

4.1 Considering the importance of VSAT technology in the infrastructure supporting aeronautical communications in the AFI Region, the meeting anticipated possible disruption of communication services in some areas during the transition to satellite IS-10-02. It therefore recommended that AFISNET Administrations and Organizations assess the impact of migration on ATS communications (AFTN, ATS/DS) using the connectivity matrices shown at **Appendix C** to this report. They were also requested to inventory and implement compatible alternate facilities for use during the transition phase to ensure continuity of services during migration.

Draft AIS publication

4.2 The meeting also put emphasis on States' responsibility to provide airspace users with the relevant information on operational aspects, including contingency measures inherent to migrating services from current satellites IS 7-07 and 9-03 to IS 10-02, with an advance notice of at least one AIRAC cycle (28 days). Draft model NOTAM at **Appendix D** was accordingly developed for consideration by ATS centres when publishing aeronautical information on migration.

4.3 The following conclusions were adopted:

Conclusion AFI IS 10.02/09: Assessment of migration impact on ATS communications

That assessment of migration impact on ATS communications (AFTN, ATS/DS) be carried out using connectivity matrices at Appendix C to this report.

Conclusion AFI IS 10.02/10: Interoperability/Compatibility requirement for alternate AFS means of communications

That AFISNET Administrations and Organizations ascertain that the alternate means of AFS communications to be utilized by ATS units during migration are interoperable and compatible.

Conclusion AFI IS 10.02/11: Draft model NOTAM

That AFISNET Administrations and Organizations adopt the draft model NOTAM shown at Appendix D to this report to inform users and other ATS units of available alternate communication facilities to use during migration.

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	To IS 10-02, Transponder 20/20 HA/HA	Migration (proposed)dates¹
From IS 7-07, Transponder 86/86 GB/GB	<ol style="list-style-type: none"> 1. Turn off transmit all involved carriers 2. Change polarization 3. Tune to new frequencies 4. Monitoring of communications on IS 10-02 with all correspondents 	24 September 2004
From IS 9-03, Transponder 20/20 HA/HA	<ol style="list-style-type: none"> 1. Turn off transmit all involved carriers 2. Change polarization 3. Tune to new frequencies 4. Swing all antennas to 359° East location and radiate new carriers 5. Monitoring of communications on IS 10-02 with all correspondents 	24 October 2004/ 30 November 2004
From IS 9-03, Transponder 105/105 ZB/ZB	<ol style="list-style-type: none"> 1. Turn off transmit all involved carriers 2. Change polarization 3. Tune to new frequencies 4. Swing all antennas to 359° East location and radiate new carriers 5. Monitoring of communications on IS 10-02 with all correspondents 	24 October 2004/ 30 November 2004

¹ Subject to approval by INTELSAT

	Brazzaville	Pointe Noire	Luanda	N'djamena	Niamey	Douala	Libreville	Bangui	Malabo	Lomé	Cotonou	Ouaga	Bamako	Dakar	Abidjan	Conakry	Roberts	Freetown	Accra	Kano	Lagos	Maiduguri
Brazzaville																						
Pointe Noire																						
Luanda																						
N'djamena																						
Niamey																						
Douala																						
Libreville																						
Bangui																						
Malabo																						
Lomé																						
Cotonou																						
Ouaga																						
Bamako																						
Dakar																						
Abidjan																						
Conakry																						
Roberts																						
Freetown																						
Accra																						
Kano																						
Lagos																						
Maiduguri																						

: ATS/DS
 : Maintenance
 : AFTN
 : GTS
 : Supervision

AFTN

ANP LINKS	ALTERNATE FACILITIES						REMARKS
	SITA NETWORK	INTERNET	FACSIMILE	CAFSAT NETWORK	SADC NETWORK	AFISNET NETWORK	

ATS/DS

ANP LINKS	ALTERNATE FACILITIES			REMARKS
	PUBLIC SWITCHED TELEPHONE NETWORK	SATELLITE TELEPHONE	CELLULAR TELEPHONE	

DRAFT MODEL NOTAM
COMMUNICATIONS FACILITIES FOR USE THE TRANSFER OF
SATELLITE-BASED SERVICES ON A NEW GENERATION SATELLITE

1. Possibilities of disruptions in air traffic services communications within the xxx UIR exist during the transfer of satellite-based services from currently operated satellites to a new generation satellite in order to improve aeronautical telecommunications connectivity and cost-effectiveness. To this effect contingency measures have been planned in accordance with the ICAO Air Traffic Services Manual (Doc. 9426, Part II, Section I, Chapter I).

2. The purpose of this NOTAM is to make airspace users and adjacent ATS units aware of the intended procedures. Contingency measures shall enter into force on by a NOTAM to be published by xxx NOTAM Office.

3 Coordination and transfer of responsibility between ATS units

3.1 AFTN messages, including filed flight plan messages shall continue to be transmitted to xxx ACC/FIC using the following facilities:

	Numbers/Addresses
a) Fax	xxx, xxx, xxx
b) SITA	xxx
c) Electronic mail	xxx

3.2 ATS direct speech communications shall continue to be transmitted to xxx ACC/FIC/TWR using the following facilities:

	Numbers/Addresses
a) INMARSAT phones	xxx, xxx, xxx
b) IDD phones	xxx, xxx, xxx
c) Cellular telephones	xxx, xxx, xxx

4. Air-ground communications

4.1 Current HF systems will not be affected by the migration of services to the new satellite, while remote VHF stations might be affected in some areas. Therefore, in case of disruption of VHF communications, the following HF frequencies will be used for air-ground communications

- a) xxx
- b) xxx
- c) xxx
- ...

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