SAT FIT 12

INTERNATIONAL CIVIL AVIATION ORGANIZATION
WESTERN AND CENTRAL AFRICAN OFFICE

REPORT OF THE TWELFTH MEETING ON THE IMPROVEMENT OF AIR TRAFFIC SERVICES OVER THE SOUTH ATLANTIC FANS 1/A INTEROPERABILITY TEAM (SAT/FIT/12)

(Paris, France, 05-06 June 2017)

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I - HISTORY OF THE MEETING

1. Place and duration of the meeting

1.1. The Twelfth Meeting of the SAT FANS 1/A Interoperability Team (FIT) was held at the Musée Mendjisky, located 15 Square de Vergennes, 75015, Paris, France, from 05 to 06 June 2017 at the kind invitation of the French Direction Générale de l'Aviation Civile (DGAC).

2. Officers and Secretariat
Election of Rapporteur and adoption of agenda and work schedule

2.1. Mr. Simon Zwane, from ATNS, South Africa, an ATCO and Airspace Manager was elected as the SAT FIT/12 Rapporteur and moderator of the working sessions. The provisional Agenda as appended to the invitation letter was reviewed and adopted by the SAT FIT/12 meeting.

2.2. Mr. Albert Aidoo Taylor, Regional Officer Air Traffic Management /Search and Rescue ICAO Western and Central Africa Office, was the Secretary of the meeting and was assisted by Mr. Onofrio Smarrelli, Regional Officer Communications, Navigation and Surveillance, ICAO South America Office.

2.3 In order for States/ANSPs to take ownership of the report of the meeting and facilitate implementation of the outcomes, the meeting nominated representatives from IATA, ASECNA, ATNS, GCAA and DECEA of Brazil to assist ICAO in the development of the report.

3. Attendance

3.1 The meeting was attended by Forty-Nine (**49**) participants from Fifteen (**15**) States of the ICAO AFI, EUR, NACC and SAM regions namely**, Angola, Argentina, Brazil, Cabo Verde, Côte d'Ivoire, France, Ghana, Guinea, Portugal, Senegal, South Africa, Spain, Trinidad de Tobago, United States of America** including their Air Navigation Service providers (**ASECNA, ASA, ENAIRE, ENANA, DGCTA, NAV Control, FAA)** and **four (04)** representatives of the aeronautical industry (**AIREON**, **IATA, INEO, SITA)**.

3.2 The list of participants and their contact addresses is at **Appendix A** to this report.

4. Working languages

The meeting was conducted in English language and all the documentation was presented in this Language.

5. Agenda of the meeting

5.1 The following was adopted as agenda items for the SAT FIT/12:

- Agenda Item 1: Adoption of the Agenda
- Agenda Item 2: Review of SAT/FIT/11 Report
- Agenda Item 3: Review of ADS/CPLC programmes and implementation activities in SAT FIRs

- Agenda Item 4: System performance monitoring and maintenance

    a. Interoperability requirements
    b. Safety monitoring aspects
    c. Problem identification, reporting and resolution procedures

- Agenda Item 5: Monitor and Coordinate the harmonization of operations of AIDC and OLDI systems in the SAT area.
- Agenda Item 6: Review of the terms of reference of the FANS 1/A Interoperability Team and Future work programme
- Agenda Item 7: Any other business

6. List of SAT FIT 12 Conclusions

6.1. The meeting adopted two (02) Conclusions and one (01) Decision.

Conclusion 12/01: ***Provision of CFRA to non-EURSAM Member States***

That,

ICAO liaise with non-EUR SAM Member States for the provision of CFRA functions for the monitoring of datalink services.

Conclusion 12/02: ***AFI RVSM Minimum Monitoring Requirements***

That,

States in the AFI region are urged to:

a) Ensure that aircraft owners/operators have height-keeping performance of their aircraft monitored, at least once every two years or within intervals of 1000 flight hours per aeroplane, whichever period is longer, in accordance with ICAO Annex 6, Operation of Aircraft.
b) Ensure that all aircraft operators in the AFI region meet their height monitoring targets;
c) Conduct awareness and sensitization of RVSM safety issues among stakeholders; and
d) Ensure that all aircraft operating in RVSM airspace are RVSM approved.

Decision 12/03: ***Terms of Reference and Work Programme of the SAT/FIT***

That,

The TOR and work programme of the SAT/FIT team are amended as per Appendix D to this report.

6.2 The meeting adopted an implementation action plan with activity tracker for four (04) programmes which were compiled from outcomes of previous SAT/FIT meetings as follows:
C-1: CPDLC/ADS-C Application
C-2: Reduction in the Use of Free-Text Messages
C-3: AIDC/AMHS Operations
C-4: Performance Based Communication and Surveillance (PBCS)

II - REPORT ON DISCUSSIONS

1. Agenda Item 1: Adoption of the Agenda

1.1 Mr. Simon Zwane, from ATNS, South Africa, an ATCO and Airspace Manager was elected as the SAT FIT/12 Rapporteur and moderator of the working sessions. The provisional Agenda as appended to the invitation letter was reviewed and adopted by the SAT FIT/12 meeting.

2. Agenda Item 2: Review of SAT/FIT/11 Report

2.1. The meeting reviewed the Conclusions and Decisions adopted by the SAT/FIT/11 Meeting which was held in Lisbon, Portugal, from 6 to 10 June 2016 and noted that the implementation of most of these conclusions was ongoing, or needed continuous actions to be taken by concerned parties.

2.2 In reviewing the application of Performance Based Communication and Surveillance (PBCS) Manual and the Global Operational Datalink (GOLD) Manual, the meeting emphasized that the successful and coordinated implementation of the PBCS concept will have huge impact on ATM in the SAT area and therefore expressed the need for guidance and training of all the stakeholders along the PBCS implementation chain. Emphasis was laid on the need for adequate PBCS training and guidance for ANSPs and operators, and also for State regulatory agencies in the certification and approval processes.

2.3 The meeting expressed profound gratitude to the FAA for the datalink workshop it organised and conducted for the group in Ghana in 2016 and agreement to conduct a follow-up workshop being planned in collaboration with ICAO to be held in 2017.

2.4 In reviewing the work done by a Go-Team which was established by SAT FIT/11 under the leadership of ASECNA relating to *Correct application and usage of CPDLC Procedures*, it was noted that only ASECNA, SATMA and Ghana provided inputs to work of the team.

2.5 Caution was expressed against promotion of Free-Text messages being adopted into Pre-formatted messages, noting that the use of free-text messages has been identified as a precursor to some coordination errors. The meeting was informed of a survey conducted by NAV CANADA on the use of Free-Text messages and urged the Go-Team to coordinate the adoption of this practice with NAV CANADA in order to learn from their experience.

2.6 The meeting noted that the work on Free-Text messages in application of CPDLC, which so far, has been utilized in some cases as an effective ATM tool with ANSPs usage trending upward and further, urged that free-text used by by flight crew be considered for inclusion in the efforts to reduce the risks posed to flight safety and air navigation.

2.7 In reviewing the need for operational improvements and discipline in the use of datalink as the ICAO GOLD and PBCS Manual prescribes, the meeting emphasized the need for training of air traffic controllers and pilots, and the necessity to instill discipline should be considered as a high priority in the implementation of PBCS.

2.8 In reviewing operations in Voice and CPDLC Mixed-Mode Communication Environment, feedback received indicated that only ASECNA and Spain implemented the conclusion by publishing the applicable communication procedures in their AIP. The meeting urged all the other States in the SAT group which have not done, so to implement SAT FIT Conclusion 11/04 by May 2018.

2.9 In following up the requirement for submission of report of FANS safety occurrences in the EUR SAM corridor, the meeting was informed that FANS safety occurrence reports in the EUR SAM corridor were received from the FAA, Spain, IATA and ASECNA.

2.10 In the review of efforts towards the establishment of Datalink Performance Analysis and a datalink Monitoring Agency, the Secretariat provided updates on ongoing efforts by ICAO Regional Offices and IATA to facilitate the provision of datalink monitoring to cover the SAT region. The meeting was further informed of ongoing work at the PIRG levels towards the establishment of monitoring agencies as applicable in the AFI, SAM and CAR regions.

2.11 In consideration of the requirement for Problem Report Investigation Service and Data Link Monitoring Agency, the meeting was informed of Amendments 7-A and 7-B to the 16th Edition of PANS ATM Doc 4444 which enjoins States to establish local monitoring and reporting of PBCS.

2.12 The general status of the implementation of SATFIT/11 Conclusions and Decisions is shown at **Appendix B** to this report.

2.13 Serious concerns were expressed about the inability of SAT States/ANSPs to implement most of the conclusions and decisions from previous meetings. The meeting discussed and agreed that there was the need to adopt a different methodology in order to make substantial progress on all the outstanding items for which the conclusions and decisions were adopted. As a means of achieving effectiveness and implementation of SAT FIT programmes, the meeting decided to avoid the formulation of new conclusions and decisions on programmes which are being addressed by the SAT FIT Group; instead, the meeting preferred to align those outstanding conclusions and decisions or programmes to current requirements.

2.14 Consequently, the meeting resolved and categorized the outstanding conclusions and decisions and the thrust of the SAT FIT 12 working papers into four (4) programmes, namely: CPDLC, Reduction in usage of Free-Text, AIDC and PBCS.

2.15 The group adopted a project methodology for implementation of the four programmes by States, ANSPs, and Operators. The SAT FIT 12 decided to list the individual activities to be executed by stakeholders with timelines for completion in order to facilitate substantial progress in the implementation of CPDLC, Reduction in usage of Free-Text, AIDC and PBCS, which the Group considered are essential to ensure improvement in safety and efficiency performance in the South Atlantic area. The group acknowledged that this new process may seem to be prescriptive, it, however, preferred the approach as being feasible in addressing the current situation whereby conclusions and decisions remain unimplemented in reports and records.

2.16 The Group decided to appoint Champions to liaise with the ICAO Secretariat and SAT FIT Rapporteur in order to coordinate and follow-up on implementation activities by State/ANSPs and other stakeholders.

2.17 The Group decided to adopt a tracking mechanism used by IATA, to enable it follow-up implementation of the activities to be completed in the execution of the four programmes.

2.18 The Plan of Action for the four programmes listed above, the champions and membership of the implementation teams, timelines where applicable and the tracking tools are attached to this report in **Appendix C**.

3. Agenda Item 3: Review of ADS/CPLC programmes and implementation activities in SAT FIRs

3.1 CFRA Report on Analysis of FANS Services in the EUR SAM Corridor for 2016

3.1.1 SATMA presented the summary of CFRA analysis of FANS services in the EUR/SAM Corridor for the year 2016 using the data from January to October 2016; the highlights of the analysis are reproduced below.

Traffic data

- FANS connected flights: Aprox. 78% of total EUR/SAM Corridor flights*.
- Most of FANS equipped flights connect to SACCAN (89.90%)
- Around 92% of connected flights exchange CPDLC information
- The number of different airframes flying over EUR/SAM Corridor connected to SACCAN is 259-354 per month

Traffic Data Summary	2016 Mean Value	Max Value	Min Value
Number of connected flights (Monthly average)	1080	1324 [Aug]	894 [Apr]
Percentage referred to total of flights in the EUR/SAM Corridor*	78%	[Sep]	[Feb]
Percentage referred to flights in the EUR/SAM Corridor indicating data link and ADS-C capacity in the Flight Plan	89.90%	91.85% [Jun]	87.13% [Apr]
Number of flights with CPDLC connection (Monthly average)	995	1227 [Aug]	808 [Apr]
Number of different aircraft (aircraft registration) connecting to SACCAN (Monthly average)	301	354 [Aug]	259 [Apr]

Airlines data

– Leading airlines: TAP Portugal, Air France and Iberia, comprising almost 58% out of the total connected flights between the three of them

– Along with Air Europa and TAM Brazil they comprise about 78% of the total number of connected flights

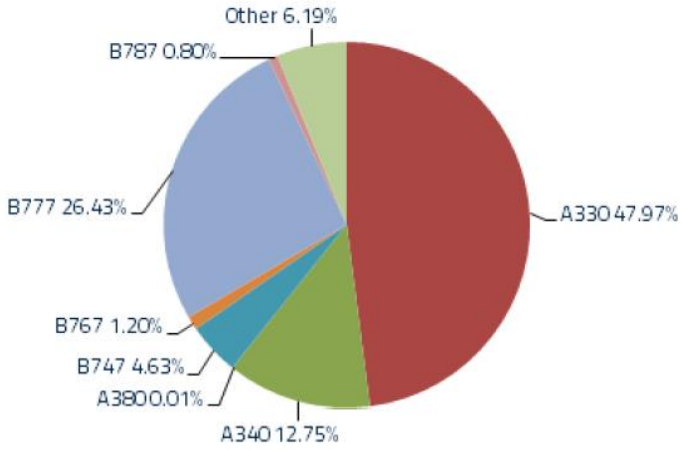
– Adding British Airways, Lufthansa, KLM and Thomsonfly to the previous five ones, percentage increases up to about 95%

Airline (% referred to connected flights)

TAP Portugal	Air France	Iberia	Air Europa	TAM Brazil	British Airways	Lufthansa	KLM	Thomsonfly
25.10%	16.51%	16.37%	14.08%	6.45%	5.30%	4.98%	3.96%	2.52%

Aircraft data

A330 and B777 are the most common types of long range connected aircraft



Total percentage of different types of connected aircraft

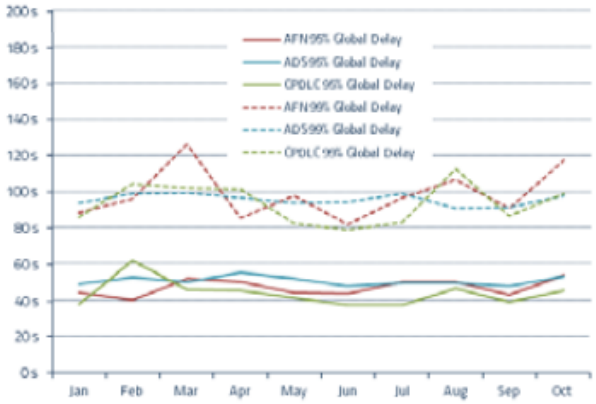
Link Utilisation and Message Delays

Link utilisation

Utilization of satellite link around 57%. VHF link used for around 37%-47% of air/ground transmissions. HF link slightly used (about 0.06%)

Downlink messages delays

On average 95% of the global calculated delays are not greater than 60 s whilst 99% of calculated delays are usually well below 180 s



2016 Monthly Global Delays per application

ADS-C Application

Contracts

The most commonly requested contracts are the initial ADS-C contracts currently established in the Canaries FIR (15 minute periodic contract, requesting the transmission of earth reference and predicted route groups with every periodic report, and an event contract including waypoint change and lateral deviation events, the latter with a 5 nautical mile threshold)

Data Accuracy

99.97% of ADS-C messages reported a FOM value equal to or better than 6 (position error lower than 0.25NM with a probability of 95%)

CPDLC Application

Most frequent uplink messages

The free text element, message elements related to CPDLC communications transfer and contact message and are the most common uplink messages

Most frequent downlink messages

Responses "WILCO" and "ROGER", followed by the "Position Report" are the most common downlink messages

	Message element	Percentage referred to total		
		2016 Mean Value	Max Value	Min Value
Uplink	[freetext]	27.53%	31.73% [May]	24.15% [Apr]
	CONTACT [icaounitname] [frequency]	18.66%	19.95% [Oct]	16.16% [Mar]
	NEXT DATA AUTHORITY [icaofacilitydesignation]	18.07%	20.77% [Jul]	14.78% [Feb]
	END SERVICE	14.46%	15.80% [Sep]	13.25% [Feb]
	SQUAWK [beaconcode]	10.71%	14.02% [Feb]	8.44% [Sep]
Downlink	Wilco	41.81%	44.69% [Oct]	38.92 [Mar]
	Roger	28.28%	32.63% [Aug]	23.49% [Apr]
	POSITION REPORT [positionreport]	9.26%	11.00% [Jan]	7.83% [Oct]
	[freetext]	6.86%	9.23% [Mar]	5.53% [Jul]

3.1.2 Potential Issues Identified

- Several issues detected during the analysed period
- All of them already identified during previous analysis
- Issues allocated to two categories:
  - Operational (operative)
  - Technical or related to Interoperability
- Coordination between stakeholders should be established in order to investigate them appropriately
- Effective ongoing coordination examples:
  - Issue regarding the declaration of ATN capacity in the Flight Plan solved after being communicated during 2014 to affected airlines
  - Coordination between SITA and ENAIRE for the periodic monitoring of some technical issues (repeated messages, high delays, communication problems, etc.)

Potential issues identified (2/3)

Operative Issues

- Issues dealing with the operation of FANS services
- Subdivided in two categories:
  - **Air side**:
    - Log-On messages with incorrect identification
    - Log-On from aircraft that are not flying towards Canarias airspace or from aircraft flying far away prior to enter an airspace where ADS-C/CPDLC is operational
    - Aircraft ADS-C connected long after exiting Canarias airspace
    - Sending of Character-Oriented applications messages (RCLs, RAIs, RCDs)
    - Aircraft not declaring ADS-C or CPDLC capability in their Flight Plans
    - Emergency reports while no unusual or emergency situation is detected
  - **Ground side**
    - Flight Plans with incorrect aircraft registration
    - Sending of ACARS Free Text messages
    - "END SERVICE" CPDLC messages sent with additional message elements which response attribute is not Wilco/Unable
    - Uplink CPDLC connect requests replied with a CPDLC disconnect request message notifying the aircraft is CPDLC connected to another ATS authority

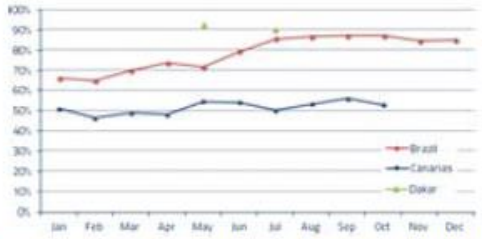
Potential issues identified (3/3)

Technical or interoperability Issues

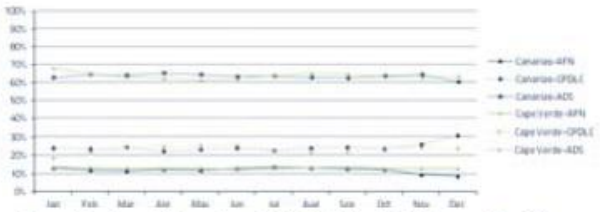
- Issues entailing some technical aspects or concerning the interaction of aircraft and ground systems
- Subdivided in three categories:
  - **General**:
    - Messages with incoherent time stamps
    - Uplink and downlink messages probably being sent more than once by the DSP
    - Unexpected Service Messages
    - Messages with excessively high delays
    - Communication/connection problems
  - **Concerning ADS-C**:
    - Different reports with different time stamps sent together in the same ADS-C message
    - Identical reports of Waypoint Change event received within an ADS-C message
    - ADS-C reports notifying FOM equal to zero (0)
  - **Concerning CPDLC**:
    - Incorrect CPDLC messages
    - Aircraft not accepting a connection request (CR) message after receiving an uplink CPDLC disconnection request (DR) message
    - Aircraft ignoring uplink disconnection request (DR) messages

Brazil, Cape Verde, Dakar and Canarias Data Comparison

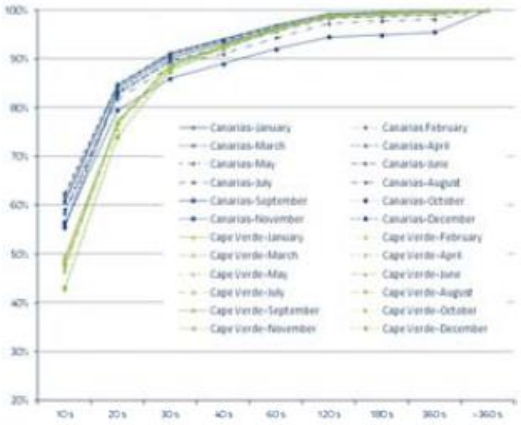
Some data from CAA Brazil, ASA Cape Verde and ASECNA Dakar have been received. These data have been compared with those corresponding to ENAIRE and no major discrepancies have been detected



Brazil, Dakar and Canarias percentages of connected flights (2016)



Cape Verde and Canarias FANS Datalink Air-Ground Traffic Distribution (Uplink and Downlink)



Cape Verde and Canarias Global Downlink Delivery Time

- Approximately 78% of the EUR/SAM Corridor flights* (Canarias area) connected to SACCAN in 2016
- Almost 90% of flights notifying FANS equipage in its flight plan connect to SACCAN.
- CPDLC information is interchanged with the vast majority of connected aircraft (about 92%)
- Major users of FANS services are TAP Portugal, Air France, Iberia and Air Europa. Air Europa appears in this top four for the first time.
- The initial ADS-C contracts established in the Canaries FIR are the most commonly requested contracts
- Position accuracy notified in ADS-C reports is not worse than 0.25 NM (FOM≥6) 99.97% of the times

- After the Free Text element, message elements related to the process of CPDLC communications transfer are among the most used by controllers. Message elements belonging to the response elements group are the most used by pilots
- On average 95% of the calculated delays are not greater than 60 s whilst 99% of calculated delays are usually well below 180 s
- Several issues (operational and technical and related to interoperability) have been detected. Coordination between stakeholders should be established in order to investigate them appropriately
- Data from CAA Brazil, ASA Cape Verde and ASECNA Dakar have been received and compared with those corresponding to ENAIRE. No major discrepancies have been detected

REMINDER
Data for the analysis of FANS services in the EUR/SAM Corridor (1/3)

- As it was stated in Conclusion SAT/FIT 8/01, involved SAT States should provide SATMA the required data and notify to SATMA any problem detected along the Corridor/South Atlantic
- Data should be sent before the end of the following month in order to enssure its analysis and inclusion in the annual CFRA document. Therefore, data received after January next year cannot be considered in the analysis
- During 2016 some states have provided ENAIRE some limited data that have been analysed and included as an Annex in the 2016 CFRA Report
- ENAIRE analyses all received data and, when possible, compares them with those corresponding to ENAIRE. Nevertheless, to perform the corresponding analysis of FANS services in the EUR/SAM Corridor part within each state, the data to be provided is that stated in SAT/FIT 7 Report (see following slide)

REMINDER
Data for the analysis of FANS services in the EUR/SAM Corridor (2/3)

- **Data to be collected and provided to CFRA – Monthly base (extracts from SAT/FIT 7 Report)**
  - Traffic Data
    - Number of connected flights
    - Percentage referred to total number of flights in the EUR/SAM Corridor
    - Number of flights with CPDLC connection (monthly average)

      Number of different aircraft (aircraft registration) connecting to ADS (monthly average)
  - Downlink (air to ground) messages delays
  - Percentage of connected flights from the most significant airlines
  - Percentage utilization value per data link media used for air-to-ground communications (satellite link and VHF link)
  - Cumulative percentage values per FOM
- **DSP (SITA) ATS Performance Report for each month, when available, can be also provided to CFRA for their analysis and comparison**

REMINDER
Data for the analysis of FANS services in the EUR/SAM Corridor (3/3)

FANS/CFRA Notification Form

1. Reporting Date:	2. Reporting Unit:		
3. Operator Name:	4. Call Sign:	5. Aircraft Type:	6. FANS EQUIPE
7. Date of Occurrence:	8. Time UTC:	9. Occurrence Position	
15. Description and Action Followed:			

CLASIFICATION
1. Log-On received from aircraft not flying your airspace 2. A/C Log-On with incorrect flight identification 3. Log-On from Aircraft not declaring ADS-C capacity in FP 4. Unknown ADS-C messages are received. 5. A/Cs remain ADS-C connected after exiting airspace 6. A/Cs remain ADS-C connected after landing 7. Different reports in the same ADS-C message. 8. Identical reports of Waypoint Change received in an ADS-C message 9. CPDLC Message: "Not Current Data Authority" 10. Incorrect downlink CPDLC messages have been received: 11. Other (describe) : _____

Crew/Controller comments (if any)

When complete please forward the report(s) to: South Atlantic Monitoring Agency (SATMA-CFRA)
E-Mail: satma@aena.es

3.1.3 The meeting noted that 27% of the CPDLC messages were Free Text. The SAT FIT Go-Team which has been assigned the responsibility of studying the types of Free Text messages which can be adopted and included in the pre-formatted messages, to take the details into consideration. The meeting was cautioned that the use of Free-text messages has been identified as a precursor to many errors and contributor to many safety related incidents. It was acknowledged that the use of Free-text provided additional clarity in some cases. In conclusion, it was noted that since the use of Free-text cannot entirely be discontinued, extreme caution should be exercised in selecting messages which could be adopted into pre-formatted messages.

3.1.4 The meeting was reminded of PBCS implementation and its expected impact in the management of air traffic. The application of Time Based Longitudinal Separation Minima of 5 minutes requires an RSP180 (Required Surveillance Performance). That means, when an ADS-C periodic or waypoint change event report is not received within 3 minutes of the expected time, the report is considered overdue and the controller shall take action to obtain the report as quickly as possible, normally by ADS-C or CPDLC. If a report is not received within 6 minutes from the time when the original report should have been sent, and there is a possibility of loss of separation with other aircraft, the controller shall take action to resolve any potential conflict(s) as soon as possible. The communication means provided shall be such that the conflict is resolved within a further 7.5 minutes.

3.1.5 RCP240 (CPDLC services) assumes that the communication system bound to enable the application of the 5 minutes separation minima shall allow a controller, within 4 minutes, to intervene and resolve a potential conflict by contacting an aircraft using an alternative communication. An alternative means shall be available to allow the controller to intervene and resolve the conflict within a total time of 10.5 minutes, should the normal means of communication fail.

3.1.6 When information is received indicating ground or aircraft equipment failure or deterioration below the communication, navigation and surveillance performance requirements, ATC shall then, as required, apply alternative separation minima.

3.1.7As RCP/RSP are to be monitored, a major responsibility will be required from States to provide data and troubleshooting issues to the CFRA, using the FANS/CFRA Notification Form below.

ANNEX I: FANS/CFRA NOTIFICATION FORM

FANS/CFRA Notification Form

1. Reporting Date:	**2. Reporting Unit:**		
3. Operator Name:	**4. Call Sign:**	**5. Aircraft Type:**	**6. FANS EQUIPE**
7. Date of Occurrence:	**8. Time UTC:**	**9. Occurrence Position**	
15. Description and Action Followed:			

CLASIFICATION
1. Log-On received from aircraft not flying your airspace
2. A/C Log-On with incorrect flight identification
3. Log-On from Aircraft not declaring ADS-C capacity in FP
4. Unknown ADS-C messages are received.
5. A/Cs remain ADS-C connected after exiting airspace
6. A/Cs remain ADS-C connected after landing
7. Different reports in the same ADS-C message.
8. Identical reports of Waypoint Change received in an ADS-C message
9. CPDLC Message: "Not Current Data Authority"
10. Incorrect downlink CPDLC messages have been received:
11. Other (describe) : _____

Crew/Controller comments (if any)

When complete please forward the report(s) to: South Atlantic Monitoring Agency (SATMA-CFRA)
E-Mail: satma@enaire.es

3.1.8 SATMA reported on their inability to provide CFRA services outside the EUR SAM area and therefore, recommended to the meeting to urge other non-EUR SAM Member States to consider alternative arrangements for the provision of CFRA functions.

3.1.9 The meeting was apprised of ongoing efforts by APIRG in collaboration with IATA for the establishment of a regional Datalink Monitoring Agency for the AFI region. Suggestions were made for APIRG to consider expanding the scope and functions of the existing Regional Monitoring Agencies which were established primarily for RVSM, to include datalink monitoring services.

3.1.10 The meeting was informed by Brazil of the CAR/SAM Regional Monitoring Agency's (CARSAMA) willingness to provide CFRA services for the CARSAM region based on the information supplied by the States in the region. Consequently, the meeting formulated the following conclusion:

Conclusion12/02: ***Provision of CFRA to non-EURSAM Member States***

That,
ICAO to liaise with non-EUR SAM Member States for the provision of CFRA functions for the monitoring of datalink services.

3.2 Proposal for amendment of the Regional Supplementary Procedures

3.2.1 The meeting recalled that the SAT/19 meeting took note of the Safety Recommendation on Final Report of the AF 447 accident that concerns the provision of Air Navigation Services in South Atlantic, and the adoption of **Conclusion SAT19/08: AF 447 Accident Final Report**

That:

Taking into consideration the Safety Recommendations from AF 447 Accident Final Report:
a) SAM and WACAF Offices coordinate the development of a Doc 7030 (Regional Supplementary Procedures) amendment proposal in order to mandate the use of ADS-C/CPDLC in the South Atlantic for Aircraft already equipped with FANS 1/A systems

3.2.2 The meeting noted the delay in the implementation of Conclusion SAT 19/08 and further, noted that ADS-C/CPDLC has been fully implemented in all ACCs in the SAT area, except Eizeza, Piarco and Montevideo where implementation status is reported to be at the preoperational phase. Furthermore, the percentage of aircraft operating in the South Atlantic Oceanic airspace and which are equipped with ADS-C/CPDLC has increased significantly. The coordinated application and operation of ADS-C/CPDLC in the SAT area would now provide a very significant safety and efficient enhancements.

3.2.3 Argentina reported that a decision has been made to ensure full ADS-C/CPDLC operational status by 2018.

3.2.4 The meeting reviewed the status of implementation of ADS-C/CPDLC and the significant safety and operational benefits attainable through a coordinated approach and endorsed the amendment proposal of the Regional SUPPs Doc 7030 in order to mandate the use of ADS-C/CPDLC in the South Atlantic for aircraft already equipped with FANS 1/A systems.

4. Agenda Item 4: System performance monitoring and maintenance

4.1 System performance monitoring and maintenance c: Problem identification, reporting and resolution procedures

4.1.1 The use of “free text” messages in CPDLC links between Air Traffic Controllers and Pilots in many reported cases is susceptible to errors that can lead to misunderstanding. The use of “free text” is recommended only in situations of absolute necessity and where preformatted messages do not exist.

4.1.2 Analysis of the current situation indicates that there is significant number of CPDLC free-text messages currently being used mainly by air traffic controllers and pilots in lieu of those allowed by the GOLD document.

4.1.3 ASECNA presented a paper on the use of free-text messages recorded by the Dakar ACC. The most common circumstances where usages of free-text messages have been identified are:

- Relays
- Alternative requests
- Traffic information

4.1.4 ASECNA reported that the use of the free-text message was due to the absence of preformatted messages available to the controller to be used in particular situations such as those listed above, or the number of preformatted messages per section making it difficult for the controller to easily find the required preformatted message.
The set of frequently used "free text" messages was noted and referred to the "Reduction in the Use of Free-Text Messages Go-Team" for analysis and further, to provide its recommendation for standardization, adoption and consideration for inclusion in ATSUs where appropriate, in order to mitigate the risk of misinterpretation of uplink or downlink messages.

4.2 AFI RVSM Minimum Monitoring Requirements

4.2.1 The AFI Regional Monitoring Agency (ARMA) presented the status of AFI RVSM Minimum Monitoring Requirements in the AFI region and reminded AFI Civil Aviation Authorities and aircraft operators about the responsibilities required of them to meet the Monitoring Targets in pursuit of RVSM safety.

4.2.2 ARMA noted that ICAO Annex 6 Operation of Aircraft, Chapter 2.5 paragraph 2.5.2.7 states *inter alia*, "The State of Registry that has issued an RVSM approval to an owner/operator shall establish a requirement which ensures that a minimum of two aeroplanes of each aircraft type grouping of the owner/operator have their height-keeping performance monitored, at least once every two years or within intervals of 1000 flight hours per aeroplane, whichever period is longer.

4.2.3 Twice annually the ARMA audits the AFI Height Monitoring status. Each State is then sent correspondence with the status of their State therein. During the first audit of 2017 it has become evident that State Civil Aviation Authorities are not ensuring that aircraft operators are meeting their monitoring targets together with the standard in Annex 6 as quoted above in paragraph 2.2.

4.2.4 Currently AFI has 60% non-compliance with only 40% of target aircraft meeting the standard. The non-compliance requires that all role players should be urged to make every effort to meet the standard and thus enhance RVSM safety. RVSM compliance in all aspects must be adhered to.

4.2.5 In consideration of the fact that LHD in the AFI region, particularly involving flights operating in the SAT area, has direct impact on safety and of concern to the SAT Group. The meeting agreed with the concerns raised by ARMA and therefore, urged all AFI aircraft operators

to meet their height monitoring targets. Furthermore, AFI Civil Aviation Authorities were urged to ensure that their aircraft operators meet their height monitoring targets.

4.2.6 States were urged to ensure awareness and sensitization of stakeholders and to ensure that aircraft operating in RVSM airspace are approved.

4.2.7 In considering the huge impart of non-compliance of RVMS requirements to LHD in the SAT area, the Group formulated the following Conclusion:

Conclusion 12/02: **AFI RVSM Minimum Monitoring Requirements**

That,

States in the AFI region are urged to:

e) Ensure that aircraft owners/operators have height-keeping performance of their aircraft monitored, at least once every two years or within intervals of 1000 flight hours per aeroplane, whichever period is longer, in accordance with ICAO Annex 6, Operation of Aircraft.
f) Ensure that all aircraft operators in the AFI region meet their height monitoring targets;
g) Conduct awareness and sensitization of RVSM safety issues among stakeholders; and
h) Ensure that all aircraft operating in RVSM airspace are RVSM approved.

5. Agenda Item 5: Monitor and Coordinate the harmonization of operations of AIDC and OLDI systems in the SAT area.

5.1 The growth of traffic between Dakar and Sal ACCs mainly along the EUR/SAM corridor generates a huge number of traffic to be coordinated. Coordination issues remain the main factor of LHD occurrences. With the lack of automation, the only mean of coordination is voice, which inevitably increases ATC workload.

5.2 ASECNA presented a paper on the Interoperability requirements between Dakar and Sal ATS Ground-Ground communication systems following a technical meeting which was held in Sal, Carbo Verde in December 2016, in order to reach consensus and agree on means to establish automatic coordination between their ATM systems.

5.3 The meeting between SAL and Dakar agreed on the technical issues to be resolved in order to take advantages of AIDC/OLDI functionalities, in order to establish interoperability between neighbouring ATC centres, and benefit from automatic coordination.

6. Review of the terms of reference

Review of the terms of reference of the FANS 1/A Interoperability Team and Future work programme Taking into account the outcome of the discussions conducted under the similar agenda items and the progress made so far in the implementation of the tasks devoted to the

SAT/FIT, the meeting reviewed and updated the Terms of Reference and future work programme of the FANS 1/A Interoperability Team (FIT) and formulated the following decision:

Decision 12/03: ***Terms of Reference and Work Programme of the SAT/FIT***

That,
The TOR and work programme of the SAT/FIT team are amended as per Appendix D to this report.

7. Agenda Item 7: Any other business

7.1 In concluding the meeting, the group reiterated the need for closer collaboration with the CNS Working group to achieve synergy and avoid duplication of tasks.

APPENDIX – C: PLAN OF ACTION
C-1: CPDLC/ADS-C Application

Action_1	**CPDLC/ADS-C Application**			
Team	**Champion: ATNS – Sibusiso Nkabinde** **Go-Team:**		**Action Owner**	**<Completion Date>**
Relevant actions:				
▪ Stakeholders' engagement for CPDLC/ADS-C		☐	ANSP, Users	Sep-2017
▪ Conduct training of ATCs and Crews for usage of CPDLC and ADS-C procedures (AFN LOG ON, CPDLC Transfer)		☐	ANSP, Operators	May-2018
▪ Conduct training (including refresher) of technical/specialist personnel (applications, system maintenance, etc.)		☐	ANSP, Operators	May-2018
▪ LOP's to incorporate CPDLC transfer of authority capability		☐	ANSP-ANSP	Sep-2017
▪ Operational approval		☐	Regulator	
▪ AIC publication		☐	ANSP/ Regulator	
▪ Conduct CPDLC/ADS-C Trial with users		☐	**ANSP**	
▪ Publish applicable communication procedures in the AIP in relation with all the communication facilities		☐	ANSP/ Regulator	

(CPDLC/ADS-C, SATCOM, HF, VHF if possible) for proper usage			
▪ Implement Post CPDLC/ ADS C implementation monitoring mechanism(s)	☐	ANSP	
▪ Ensure availability CSP (SITA/AIRINC) focal point in each State	☐	**ANSP**	
<Explain how and when you intend to complete this objective>			

C-2: Reduction in the Use of Free-Text Messages

Action_2	**Reduction in the Use of Free-Text Messages**		
Team	**Champion: ASECNA – Micheline** **Go-Team:**	**Action Owner**	**<Completion Date>**
Relevant actions:			
▪ ANSPs' Focal Point and users to send to ASECNA (Go Team Lead) their applicable free text frequently used	☐	ANSP	May-2018
▪ Go Team to review and consolidate the list of free text messages frequently used in the SAT region and EUR/SAM corridor	☐	ANSP	May-2018
▪ Go team to send to IATA the consolidated list of free text messages for comments and feedback	☐	ANSP	May-2018
▪ Go Team to update and to submit to ICAO the final list for consideration in the GOLD Manual and propose amendments to Doc 7030 Regional Supplementary Procedures	☐	ANSP	May-2018
<Explain how and when you intend to complete this objective>			

C-3: AIDC/AMHS Operations

Action_3	AIDC/AMHS Operations			
Team	**Champion: ASECNA – Micheline** **Go-Team:**		**Action Owner**	**<Completion Date>**
Relevant actions:				
▪ ANSPs to assess their AMS and FDPS system capabilities to handle AIDC messages (and address deficiencies identified)		☐	ANSP	May-2018
▪ ANSPs to assess their VSAT Network capacities (bandwidth, protocols, …) and address deficiencies identified		☐	ANSP	May-2018
▪ ANSPs to assess the systems' interoperability and interconnectivity and address deficiencies identified		☐	ANSP	May-2018
▪ ANSPs to develop and sign MoU on the bilateral basis		☐	ANSP	May-2018
<Explain how and when you intend to complete this objective>				

C-4: Performance Based Communication and Surveillance (PBCS)

Action_4	Performance Based Communication and Surveillance (PBCS)			
Team	**Champion: (GCAA – Kofi Kpodjie)** **Go-Team:**		**Action Owner**	**<Completion Date>**
Relevant actions:				
▪ Conduct regional workshops on PBCS		☐	ICAO	May-2018
▪ Conduct gap analysis for PBCS implementation		☐	States, ICAO	May-2018
▪ Develop local/national implementation plan		☐	States	May-2018
▪ ANSPs that have implemented CPDLC/ADS-C and SATCOM communication services must set up their local PBCS Monitoring Programme		☐	States/ANSPs	May-2018
▪ Collaboration with states to establish DL/Monitoring agency for other SAT states		☐	ICAO/IATA	

▪ Review, regularly the respective FANS service statistics report provided by SITA/ARINC on monthly basis and share with CFRA to facilitate analysis	☐	SAT States	
▪ EUR/SAM corridor states must continue to report to SATMA/CFRA	☐	SAT States	
<Explain how and when you intend to complete this objective>			

------End-----