NAT SPG/TF RCP 2008

INTERNATIONAL CIVIL AVIATION ORGANIZATION

SUMMARY OF DISCUSSIONS AND CONCLUSIONS OF THE

THE NORTH ATLANTIC SYSTEMS PLANNING GROUP

TECHNICAL TASK FORCE

ON

DATA LINK APPLICATIONS COMMUNICATIONS REQUIREMENTS

Paris, 20 to 22 February 2008

PREPARED BY THE EUROPEAN AND NORTH ATLANTIC OFFICE OF ICAO **FEBRUARY 2008**

FOREWORD

i. Introduction

i.1 The North Atlantic Systems Planning Group Task Force on data link applications communications requirements (NAT SPG/TF RCP 2008), was convened in the European and North Atlantic (EUR/NAT) Office of ICAO in Paris from 20 to 22 February 2008, to complete action on the following NAT SPG Special Conclusion:

NAT SPG Conclusion SP2007/6 – NAT Region Performance Based Guidance Material for communications

That, for the purpose of drafting performance based communications guidance material, the ICAO European and North Atlantic Regional Director be requested to urgently establish a task force with the following participants and directives:

a) representatives from air traffic management, system safety management and systems engineering;

b) the performance based guidance material must:

i) take account of ICAO provisions;

ii) take account of the Safety and Performance Standard for Air Traffic Data Link Services in Oceanic and Remote Airspace (RTCA DO-306/EUROCAE ED-122);

iii) must address performance requirements for new means of communications for intervention as well as for surveillance;

iv) be globally adoptable; and

v) include the Required Communications Performance (RCP) type (s) to support future NAT Region operations; and

c) the task force is to submit the material to NAT IMG/32 (May 2008) in order to obtain NAT SPG/44 endorsement.

i.2 The Meeting was chaired by Mr Ásgeir Pálsson, the Chairman of the NAT SPG. Mr Karsten Theil, Regional Director, EUR/NAT Office of ICAO, was the Secretary of the Meeting and was assisted by Mr Jacques Vanier, Mrs Carole Green and Mr Elkhan Nahmadov from the same Office and by Mr Chris Dalton from the Air Traffic Management (ATM) Section of ICAO Headquarters. Additional assistance was provided by Mrs Nikki Goldschmid from the EUR/NAT Office of ICAO.

i.3 In his opening remarks, the Chairman informed the Meeting that this was a unique opportunity to develop a mechanism to ensure that harmonised performance and monitoring requirements for the NAT and Pacific (PAC) Regions were agreed as part of the implementation plans to support data link based applications in the two Regions. He also informed the Meeting that Phase IV[1] Controller Pilot Data Link Communications (CPDLC) had been implemented simultaneously in four NAT Region Flight Information Regions (FIR) on 17 January 2008.

[1] CPDLC Phase IV: With the exception of certain agreed CPDLC messages, Phase IV is the full implementation of the defined CPDLC message set.

i.4 With regard to NAT SPG Conclusion SP2007/9 concerning the establishment of a Task Force on Institutional Issues, the Regional Director advised the Meeting that invitations to participate in their first meeting from 25 to 27 February 2008 had been sent to all NAT Provider States and to user organisations on 3 December 2007. By the deadline for registration on 31 December 2007, only three States and no user organisations had indicated an interest to participate; therefore it had been decided on 21 January 2008, in coordination between the Chairman of the NAT SPG and the Regional Director, to cancel the meeting (State Letter MTG/PIRG/NATSPG/SPE2008/COR/08-0009.TEC of 21 January 2008 refers).

i.5 The Meeting noted that a Conference on the Economics of Airports and Air Navigation Services – CEANS – would be held in ICAO Headquarters from 15 to 20 September 2008, and that the agenda would accommodate discussions on the commercialisation of air navigation service providers and its influence on their performance, with particular attention to governance and management structures. It was the intention of the Chairman of the NAT SPG to seek the consensus of the NAT Provider States on a working paper to be presented to the CEANS, highlighting the problems resulting from the demonstrated level of reliability of data link communication and proposing a way forward to ensure availability of the necessary infrastructure to provide safe and efficient air navigation services. A draft working paper to form the basis for such consensus would be developed by the Regional Director.

i.6 In this context, the Regional Director informed the Meeting that the deadline for returning the questionnaire[2] on organisational issues and regulatory practices applicable to airports and air navigation services had been extended to 29 February 2008. The Regional Director urged the participants to ensure that the questionnaire was returned by their States in order to enable the ICAO Secretariat to prepare solid background information for the CEANS.

i.7 The Meeting regretted the absence of IATA and noted that some States had sent their apologies for not being able to attend. A list of participants is at **Appendix A**.

i.8 The Meeting approved the following Agenda:

Agenda Item 1: Follow up from the Special NAT SPG/2007 Meeting

Agenda Item 2: Develop draft NAT Region performance and qualification based guidance material for communications

Agenda Item 3: Develop NAT Region end-to-end monitoring requirements for communications

Agenda Item 4: Develop draft material regarding notification of air traffic control and flight crews of data link based communications systems

Agenda Item 5: Any other business

[2] Attachment B to State letter SD 38/1-07/69 of 7 December 2007.

1. Follow up from the Special NAT SPG/2007 Meeting

1.1 The Meeting was informed that robust project management was essential to advancing any project through the ICAO process that may have dependencies that are inter-regional, amongst different States, as well as different international organizations, Communication Service Providers (CSP), Air Navigation Services Providers (ANPS) and operators. It was also important to ensure that States, CSP, ANSP and international organizations make available resources to complete the project.

1.2 Although the issues related to the performance of the communications infrastructure to support data link applications was brought to the attention of the NAT SPG because of the negative effects from lack of performance, it had become evident that other ICAO planning Regions were encountering similar problems, especially the Asia and PAC Regions where reduced separation minima have been implemented. To resolve this difficulty, a variety of issues related to communications performance needed to be dealt with, including, but not limited to, determination of Air Traffic Services (ATS) functions requiring attached performance criteria, regulatory support for the criteria ultimately chosen, qualification means, monitoring and notification. It was unclear at this stage which subjects would be dealt with inside ICAO and to what extent. For those issues to be dealt with inside ICAO, the specific group or sub-group would need to be determined. Furthermore, the different concerns of the Regions that have implemented, or were about to implement data link applications, needed to be taken into account in such a way that global interoperability was assured.

1.3 Acknowledging the various components relevant to advancing such a project as being envisaged, as well as the number of groups working on it and that at least two Regions were involved, the relevant Planning and Implementation Regional Groups (PIRG) should take responsibility for coordination to ensure success. In this respect, it is incumbent upon the PIRGs to manage, to the extent possible, components such as project schedule, project organization and reporting lines, monitoring, project planning and tracking, communication and issue escalation.

1.4 In order to ensure that resources would be committed to this project, the Meeting felt that some form of service provision/equipage/ Required Communications Performance (RCP) mandate was required in the NAT Region. Otherwise, it would be very difficult to set milestones for all of the various activities. This requirement for a mandate could be met through an amendment to the Regional Supplementary Procedures (SUPPs) and has been included in the task list (paragraph 1.5 refers). The Meeting agreed to recommend to the NAT SPG that the mandate should be for the last quarter of 2015. This should provide sufficient time to complete the requisite planning and would meet the generally accepted seven year notice for major equipage requirements for operators. Furthermore, this would be in line with the dates being considered by the European Commission for mandatory equipage for Controller Pilot Data Link Communications (CPDLC) within airspaces to be defined in the European SUPPs.

1.5 The Meeting agreed that to commence this process, it was essential that a detailed project plan be developed that would encompass a schedule with a clear scope and objectives (with a snapshot of success), tasks, with agreed milestones and deliverables (with due dates), and, most importantly, dependencies. The Meeting also agreed that some form of oversight was required to maintain a project schedule and to track all tasks required for successful implementation. With this in mind, the Meeting developed the RCP240/400 task list, which is shown in **Appendix B**. The Excel spread sheet can be accessed through the following Icon:

Microsoft Office
Excel 2003 Workshee

1.6 As regards the management of the project, the Meeting agreed that all documentation associated with the project would have to come under some form of configuration management to ensure that the stated objective of global harmonisation was maintained. For the NAT Region, the Meeting agreed to recommend to the NAT SPG that the NAT Implementation Management Group (NAT IMG) be entrusted with the management and coordination functions. As regards the other ICAO Regions, the ICAO Secretariat would undertake to determine who would be responsible to carry out these functions. All inter-regional coordination would be done through the nominated entities with ICAO acting as the facilitator. This has also been reflected in the task list.

2. Develop draft NAT Region performance and qualification based Guidance Material for communications

2.1 The Meeting recalled that the Special NAT SPG Meeting (Paris, 15 to 16 November 2007) had agreed on the draft NAT Region performance based guidance material for communications that had been developed through the NAT IMG. It was also recalled that the Task Force had been given the assignment to further refine the draft material so that it could be presented to NAT SPG/44 for endorsement. The Meeting endorsed a proposal to amend the continuity requirements in order to ensure consistency with DO-306/ED-122.

2.2 Having agreed to a common baseline document, the Meeting then reviewed a proposal to include end-to-end performance-based criteria which would be in support of the end-to-end monitoring requirements reported on in section 3 below. It was also proposed that additional issues, such as voice communications, clarification of the definition of outage and vertical deviation contracts be included in the guidance material. The proposals were supported by the Meeting and a small drafting group was established to prepare an updated version of the document. The revised version of the guidance material, which will be presented to NAT SPG/44, is at **Appendix C.**

3. Develop NAT Region end-to-end monitoring requirements for communications

3.1 The Meeting recalled that the Special NAT SPG Meeting (Paris, 15 to 16 November 2007) had agreed on the draft end-to-end monitoring guidance material that had been developed through he NAT IMG and which had been based on the APAC guidance material. It was also recalled that the Task Force had been given the assignment to further refine the draft material so that it could be presented to NAT SPG/44 for endorsement.

3.2 In addition to the material produced by the Special NAT SPG/2007 Meeting, information was presented outlining the results of end-to-end monitoring using the performance-based criteria for data link services supporting communications and surveillance capabilities. These criteria were based on RTCA DO 306/EUROCAE ED 122, Safety and Performance Standard for Air Traffic Data Link Services in Oceanic and Remote Airspace (Oceanic SPR Standard), dated 11 October 2007 rather than the heretofore used regionally agreed success criteria that had been the basis for monitoring during the trials.. The criteria included the additional requirements agreed at the Special NAT SPG meeting in November 2007 and it was therefore proposed to augment the draft guidance material to include the additional end-to-end criteria.

3.3 The Meeting agreed with the proposed action and a small drafting group was established to review the proposal and to make the necessary changes to the draft guidance material. The revised version, that will be presented to NAT SPG/44, is at **Appendix D**. In concluding its discussion on the guidance material, the Meeting expressed its appreciation to the participant from New Zealand for having brought forward the proposal which will serve as a very good basis to further develop the monitoring requirements.

3.4 The Meeting was also presented with a proposal to establish a centralised data base that would take account of the large number of aircraft components and operational settings that can differ on the same aircraft type between different airline fleets and that may cause differences in observed data link

performance. It was suggested that such a data base would assist both the Central Reporting Agency (CRA) and FANS-1/A Interoperability Team (FIT) members investigating observed data link performance issues. The Meeting was informed that the Informal South Pacific Air Traffic Services Co-ordinating Group (ISPACG) was developing a common regional database to make this information readily available and that this may have global utility.

3.5 The Meeting agreed that global harmonisation of monitoring data was desirable and should be pursued but it did not feel that it would be timely to establish such a data base at this time. It was however agreed that the APANPIRG, the NAT SPG and the ICAO Secretariat should develop proposals at an early date to implement the required monitoring infrastructure that would be global and cost effective. This would need to be reflected in the task list.

4. Develop draft material regarding notification of air traffic control and flight crews of data link based communications systems

4.1 The Meeting reviewed draft material regarding the notification of air traffic control and flight crews of data link based communications systems. The Meeting noted that ANSP had established procedures for receiving and disseminating information regarding degradations and failures of any part of the ANS infrastructure. Assuming that a CSP would be able to detect failures or degradations in the service, the Meeting agreed that the established procedures should suffice for the necessary coordination between CSPs and ANSPs and within and between ANSPs. The Meeting noted that in most cases, flight crews would not receive onboard indications of SATCOM failures, and agreed that failures would need to be notified to flight crews via voice. The Meeting endorsed the proposed methods for informing flight crews of information related to SATCOM service disruptions and recommended that the NAT IMG further refine the following material:

a) include appropriate phraseology if another data link mode (such as VHF) was available in the event of a SATCOM data link failure;

b) take account of applicable direction provided in ICAO Annex 10, Volume II, EUROCONTROL procedures, Version 5 of the FANS 1/A Operations Manual (FOM), or other pertinent regional guidance material;

c) include harmonized phraseology regarding service resumption; and

d) include a requirement that flight crews advise ATS in the event they became aware of a SATCOM or data link failure.

4.2 The Meeting noted that a significant issue that needed to be addressed was the operational impact of a data link failure in the NAT Region. In the event that reduced separation was being applied, it might not be possible for ATC to establish another form of separation because a significant number of aircraft in the airspace could be spaced at or near the minima. Given the current concerns regarding High Frequencies (HF) congestion, it was questionable whether the existing voice infrastructure would be sufficient to cope with a reversion to voice communications without instituting Air Traffic Flow Management (ATFM), even if SATCOM voice were available. Accordingly, the Meeting agreed to recommend that the NAT IMG develop contingency procedures for loss of data link in one or more NAT Oceanic Control Areas (OCA) and examine the feasibility of reverting to voice procedures in the event of a data link failure.

4.3 The Meeting recognized that a data link failure impacting a large sub-set of the population was a significant institutional issue which would need to be addressed when considering the current and future reliance on data link communications, especially if it was determined that reversion to voice procedures was not an option. In that case, it might become necessary to establish mandates in order to

ensure that aircraft would have redundant means for data link communications (for example, requiring operators to have service agreements with more than one CSP, or for aircraft to be equipped to use more than one satellite service). If such mandates were established, there would also be a necessity to ensure that the infrastructure supporting those mandates would remain accessible. The Meeting noted that these issues would have an impact on any business case supporting operations that depended upon data link or the mandating of data link as currently envisaged in the NAT Service Development Roadmap. It was therefore agreed that this should also be brought to the attention of the NAT IMG for them to develop a recommendation to the NAT SPG.

5. Any other business

5.1 The Meeting initiated the preparation of a draft working paper for NAT SPG/44, which is outlined in **Appendix E**. The working paper would limit itself to seeking endorsement for the draft NAT Region performance based Guidance Material for communications, the draft Guidance Material for end-to-end performance monitoring of ATS communications services for NAT airspace as well as a document control mechanism that would be put in place to ensure continued harmonization with the PAC Region documentation. It was noted that the material developed by the Meeting would also be presented to the ASIA/PAC Regional planning mechanism.

5.2 The Meeting agreed that it had completed the tasks assigned to it by the Special NAT SPG Meeting (Conclusion SP2007/6). In addition, the Meeting noted that it had also completed action on Conclusion SP2007/7 and Conclusion SP2007/8. The Meeting agreed that it had fulfilled all of the tasks that it had been assigned and therefore agreed to recommend to the NAT SPG that the Task Force be disbanded.

5.3 In concluding the meeting, the Chairman, in his capacity as Chairman of the NAT SPG, thanked all of the participants in the work of the Task Force for the quality of the deliverables that were produced in a short time frame. He also indicated that they were the foundation on which the future use of data link technologies would be built.

APPENDIX A - LIST OF PARTICIPANTS

(Paragraph i.7 refers)

CHAIRMAN
Ásgeir PÁLSSON

CANADA
Dave ROME
Norm DIMOCK

ICELAND
Leifur HAKONARSON

IRELAND
Ray WHITSELL

NEW ZEALAND
Paul RADFORD

UNITED KINGDOM
Peter MARKS
David A. LACEY

UNITED STATES
Bob TEGEDER
Tom KRAFT
David MALOY
Daniel VACA

IFALPA
Robert TORN

ICAO
Karsten THEIL (NAT SPG Secretary)
Chris DALTON
Carole GREEN
Jacques VANIER
Nikki GOLDSCHMID

APPENDIX B – DRAFT IMPLEMENTATION PLAN FOR THE IMPLEMETATION OF DATA REQUIRED COMMUNICATIONS PERFORMANCE AND MONITORING

(Paragraph 1.5 refers)

ID	RCP240/400 TASKS - UPDATED 22 FEBRUARY 2007	COMPLETE BY	STATUS	LEAD; COORDINATING ORG.
	Assumptions: These tasks relate specifically to the implementation of RCP240 and RCP400 and do not include those tasks necessary for the implementation of the ATS function they are associated with.			
	I. GENERAL PROJECT DEVELOPMENT & MANAGEMENT			
1	Establish Project Task List	22-Feb-08	Completed	Secretariat; Paris Office
2	Prepare working paper (SP2007/9), containing a recommendation outlining the way forward for consideration by the NAT IMG indicating tasks, milestones, deliverables and dependencies Identifiy Key Target Dates	IMG		
3	Inform parties concerned of IMG conclusions post-IMG/			
4	Formal coordination between Paris and Bangkok offices where Paris requests the assistance of ICAO Headquarters and the Bangkok office to support this interregional and multi-faceted implementation.			
5	ICAO Headquarters to provide on-going coordination support and advice	on-going	on-going	ANB/ATM Section
6	APANPIRG to establish group or use existing group(s) to support current efforts in the Pacific Ocean to implement RCP240 and RCP400 where 30/30 separation minima is applied			

Develop operational concept for performance-based communications and RCP implementation

Identify Target Airspace

SP2007/1, SP2007/2 - Forecasts – Determine the impact of the Open Skies Agreement on forecast data, including:

Air traffic forecasts,

Equipage forecasts,

Voice communication traffic

Data communication traffic

Assess costs and benefits

Assess Costs and Benefits

Complete initial assessment

Assess Feasibility

Confirm that 50% of flights are conducted by aircraft types capable of meeting RCP240 standards without major modification

Establish Information Dissemination Program

Establish RCP Webpage or associate it with NAT reduced separation webpage and/or MID/ASIA and PAC reduced separation webpage

Schedule RCP seminars, if necessary

Establish distribution lists for State regulators and Industry organizations

Publish State letters through ICAO ASIA/PAC and EUR/NAT Offices, as necessary

Notify States and Operators of key implementation dates and requirements

Publish 18-month Advance Notice

31	Publish Notice containing RCP240/RCP400 specific operational policy/procedures			
32	Publish 3-month Notice confirming implementation date			
33	Confirm ATS providers ready for implementation			
34	Establish operator and aircraft equipage eligibility data base			
35	Establish service difficulty data base base			
36	Develop implementation milestones and schedule			
37	***II. INTERNATIONAL COORDINATION: ICAO GROUPS & DOCUMENTS***			
38				
39	Provide input into appropriate Asia/Pac and NAT SPG WGs	On-going	In progress	US WPTF; NAT/CAR WG, ICAO Offices
40	Asia/Pac meetings (to be updated as meetings scheduled)	On-going	In progress	Bangkok office
41				
42				
43				
44	ISPACG/22 (Tahiti, dates)			
45				
46				
47				
48				
49				
50	NATSPG meetings (to be updated as meetings scheduled)	On-going	In progress	Paris office
51	NAT ATMG/			
52	NAT SARSIG/			
53	NAT Safety Management Coordination Group			
54	NAT IMG/			
55				

SP2007/8, Examine ways and means to ensure that ATC and flight crews receive timely alerts where necessary of any degradations or failures in the communications services

SP2007/6, Based on Annex 6 and 11 provisions, Doc 9869, and DO-306/ED-122:

Develop performance standard for RCP 240 as applied to data communication

Develop performance standard for RCP 400 as applied to data communication

Develop performance standard for RCP 400 as applied to voice communication

Develop performance standard for surveillance capability

Develop standards for real-time monitoring and alerting, as appropriate.

SP2007/7, Develop guidance material for initial qualification and ongoing configuration management, problem reporting, end-to-end monitoring, analysis and resolution

Develop updates to ICAO Doc 9869, Manual on RCP

Develop updates to flight plan provisions

Develop the degarded criteria that causes RCP240-related procedures to cease in the airspace concerned.

Develop the criteria that causes RCP240-related procedures to commence after services were ceased due to degarded performance.

SP2007/5. Develop amendment to the Regional Supplementary Procedures (SUPPS) (Doc 7030) for MID/ASIA, PAC and the NAT to make possible the implementation of RCP. Procedures that should be considered for inclusion might include criteria for operator eligibility, aircraft equipage, requirements for flight planning, monitoring, alerting and reporting.

Develop initial draft Doc 7030 with indication of date of implementation

Have APANPIRG and NAT working groups review draft

ICAO offices distribute Doc 7030 revisions for State and International organization comment

ICAO approve and publish MID/ASIA, PAC and NAT 7030 revisions

Amend AIPs and other State documents (?) to support SUPPs amendment

78			
79	***III. Operational and Technical***		
80	Define ATS function in the NAT		
81	Define ATS function in the MID/ASIA and PAC	29-Jun-05	Completed
82	Determine the extent in which the HF infrastructure can be scaled back given project goals, required use of data link, availaility of the data link services, and procedures needed to manage the air traffic after a loss of data link service		
83	Evaluate alternatives for more efficient use of the HF infrastructure, e.g., HFDL		
84	SP2007/4, Determine the RCP type for new alternative means of voice communications given the project goals, taking into consideration RCP 240 and RCP 400, currently defined for means of data communications.		
85	SP2007/3, - Determine the feasibility of SATCOM voice to back up data link services.		
86	Evaluate the need for an operator to carry one or two HF radios when the operator is eligible to use data link. And/or the operator has an alternative approved long range communication system (LRCS), e.g., HF voice and SATCOM voice in cases where data link is not required.		
87	Develop necessary guidance to ensure acceptable performance of the data link communication services. This might include standard service level agreement(s) between parties (e.g. operators, ATS providers, communication providers and GES providers).		
88	***IV. SAFETY ANALYSIS & MONITORING***		
89	Develop draft communication performance requirements guidance material for the MID/ASIA, PAC and NAT Regions Version 1.0	NAT SPG/TF-RCP	Completed
90	Develop draft end-to-end monitoring guidance material for the MID/ASIA, PAC and NAT regions Version 1.0	NAT SPG/TF-RCP	Completed
91	Develop final communication performance requirements guidance material for the MID/ASIA, PAC and NAT Regions		
92	Develop final end-to-end monitoring guidance material for the MID/ASIA, PAC and NAT regions		
93	Confirm acceptability of RCP240 and RCP400 communication standards with ICAO Separation and Airspace Safety Panel (SASP)		

94		
95	Develop initial Safety Assessment Document	
96	Develop plan for pre-implementation and post-implementation monitoring	
97		
98	Start pre-implementation monitoring	
99	Start post-implementation monitoring	
100	***V. AIR TRAFFIC CONTROL TASKS - GENERAL***	
101		
102		
103		
104		
105	Conduct ATC automation system simulations	
106		
107	Establish plan for controller training	
108	***VI. Airworthiness and Operational eligibility***	
109	Determine the requirements for aircraft equipage eligibility	
110	Determine the requirements for operator eligibility	
111	Review ICAO RCP Manual (Doc 9869) for amendment	
112	Review Annexes and PANS for amendment post implementation so RCP SUPPs, or parts of SUPPs may be deleted	
113	Provide general support to regulatory authorities	
114		
115	Track operator/aircraft fleet RCP240/400 readiness	
116	***VII. STATE RESPONSIBILITIES FOR RCP240/400 AUTHORIZATION***	
117	Review ICAO docs and/or State documents for RCP240/400 authorization	States
118	Determine eligibility list	
119	Consider using FAA Order(s) ….as a basis	State regulators
120	Develop or revise State guidance and/or regulations, as necessary	State regulators

121	Establish State RCP240/400 airworthiness requirements		State regulators
122	Establish operational policy/procedures requirements for RCP240/400 authorization		State regulators; US WPTF
123	Prepare State inspectors to perform RCP240/400 authorization tasks		State regulators
124	Review webpage periodically to remain current on RCP information		State regulators
125	Plan to authorize national operators for RCP240/400 by [date], to extent possible		State regulators
126	***VIII. OPERATOR RESPONSIBILITIES & TASKS***		
127	Develop plan to obtain RCP240/400 authorization		Operators
128	Coordinate w/ State regulatory authorities to determine requirements for RCP240/400 authorization		Operators
129			Operators
130	Review Webpage periodically to remain current on RCP plans and schedules and Ops/Air requirements	On-going	Operators
131	In accordance w/ regulatory authority guidance, submit docs supporting State authorization for RCP240/400	As required	Operators
132	Train pilots and, if applicable, dispatchers on RCP aspects of reduced separation		Operators
133	Develop and distribute operations manuals, pilot bulletins or other appropriate docs containing RCP policy/procedures		Operators
134			
135	Take timely action w/ State authorities to address any track keeping errors or other events that could affect operational safety	On-going	Operators
136	***IX. FINAL IMPLEMENTATION DECISION & NOTIFICATION***		
137	Target date for readiness review and decision to implement		
138	Target date for publication of notice of implementation decision		
139	Target date(s) for operator eligibility		Operators, State regulators
140			
141	***X. POST IMPLEMENTATION TASKS***		
142	Determine bodies that would identify and rectify problems and inform identified parties		
143	The recognized body(ies) will convene and identify and rectify problems and inform identified parties	On-going	

144		
145	One-month post-implementation review	
146	6-month review	
147	12-month review and Safety Assesment	
148	Periodic review and safety assessment	On-going
149		

APPENDIX C - Draft PERFORMANCE BASED GUIDANCE MATERIAL FOR COMMUNICATIONS

(Paragraph 2.2 refers)

1 Application

Each State should ensure that the ANSPs provide communication services that meet the RCP type, and that contracted CSPs meet their RCP allocations for each oceanic area control centre (OACC) and the flights it serves. The risks represented by the requirements are regarded as being minimum for the specified ATS function to maintain operational efficiency and meets the safety needs.

2 Purpose

2.1 The requirements herein are intended to support operational and safety requirements as traffic grows, and as horizontal separation minima are reduced. Reduced longitudinal separations will require air traffic control to become more tactical, supported by enhanced intervention capability. The performance requirements will be subject to validation and change as safety risks are further analyzed, as monitoring is enhanced, and as operational experience is gained.

2.2 The requirements herein are intended to provide meaningful benchmarks for reference to safety oversight, initial qualification, and continued operational performance monitoring.

3 Relationship to standards documents

3.1 The requirements herein are based on the RTCA DO-306/EUROCAE ED-122 *Safety and Performance Standard for Air TrafficData Link Services in Oceanic and Remote Airspace (Oceanic SPR Standard)*, which includes a supporting safety and performance assessments for existing separation standards provided in ICAO Doc 4444..

3.2 Whereas DO-306/ED-122 specifies an Availability value based on safety assessment of the operational effects of the loss of the service, the Availability requirement herein is more stringent, based on an additional need to maintain orderly and efficient operations.

3.3 Whereas the DO-306/ED-122 specifies a requirement to indicate loss of the service, an additional time value was associated with the requirement to indicate the loss to the ANSP.

4 Performance parameters and meanings

The following are RCP parameter definitions taken from DO-306/ED-122, which are consistent with the ICAO Doc 9869, *Manual On Required Communications Performance*, and augmented by derived meanings that pertain to the different parts of the end-to-end service.

4.1 Meanings for communication supporting intervention and surveillance

Intervention - operational communication transaction - *The process a human uses to initiate the transmission of an instruction, clearance, flight information, and/or request, and is completed when that human is confident that the transaction is complete.* (ICAO Doc 9869)

Surveillance – position report delivery

- Periodic report, from the start of the periodic interval. The start of the periodic interval occurs when the periodic report is sent by the aircraft/flight crew;

- Waypoint change event report, from the actual time the aircraft crosses the waypoint or is abeam the waypoint;
- Lateral deviation event report, from the time the aircraft system detects that the event has occurred
- Vertical deviation event report, from the time the aircraft system detects that the event has occurred

4.2 Communication transaction time - The maximum time for the completion of the operational communication transaction after which the initiator should revert to an alternative procedure.

Position report delivery time – The maximum time for the delivery of a position report from the aircraft to the ANSP.

Meanings for the end-to-end service -

- Monitored operational performance (TRN) - The portion of the operational communication transaction (used for intervention) that does not include message composition or recognition of the operational response.
- Required Communication Technical Performance (RCTP) – The technical portion of the operational communication transaction (used for intervention) that does not include message composition, operational response, and recognition of the operational response times.

Meanings for the aircraft –

- $RCTP_{AIR}$ for Intervention – The critical transit times for an ATC intervention message from the aircraft's antenna to the flight crew's indication of receipt of the message and from sending the message to the aircraft's antenna.
- $RCTP_{AIR}$ for Surveillance – The critical transit time for a position report from the aircraft's avionics to the antenna.

Meanings for communications service –

- $RCTP_{CSP}$ for Intervention – The summed critical transit times for an ATC intervention message and a response message, allocated to the CSPs.
- $RCTP_{CSP}$ for Surveillance – The critical transit time for a position report allocated to the CSPs.

4.3 Continuity - The probability that an operational communication transaction or position report delivery can be completed within the communication transaction time.

Meanings for the end-to-end service -

- The proportion of intervention messages and responses that can be delivered within the specified TRN for Intervention.
- The proportion of intervention messages and responses that can be delivered within the specified RCTP for Intervention.

Meanings for the aircraft -

- The proportion of intervention messages and responses that can be delivered within the specified $RCTP_{AIR}$ for Intervention.

- The proportion of position reports that can be delivered within the specified $RCTP_{AIR}$ for Surveillance.

Meanings for communications service –

- The proportion of intervention messages and responses that can be delivered within the specified $RCTP_{CSP}$ for Intervention.
- The proportion of position reports that can be delivered within the specified $RCTP_{CSP}$ for surveillance.

4.4 Availability – The probability that an operational communication transaction or position report delivery can be initiated when needed.

Meaning for communications service – Total outage proportion of communications service for any given observation period. An outage is an interval during which a communications service fault prevents the Continuity requirement from being met or service from being initiated, affecting multiple aircraft.

4.5 Integrity - The probability of one or more undetected errors in a completed communication transaction or position report delivery. (Modified for clarity from ICAO Doc 9869).

5 RCP 400/D Specification

Per DO-306/ED-122, this specification is applicable to data communication.

The end-to-end service shall meet or better these performance parameter values

RCP type	RCP 400	
TRN	370	320
RCTP	310	260
Continuity	0.999	0.95
Integrity	10^{-5}	

The aircraft shall meet or better these performance parameter values:

RCP type	RCP 400	
$RCTP_{AIR}$ for intervention ..(seconds antenna-HMI-antenna]	15	10
$RCTP_{AIR}$ for surveillance (seconds avionics-antenna]	30	15
Continuity	0.999	0.95
Aircraft equipage availability	0.999	

The communications service shall meet or better these performance parameter values:

RCP type	RCP 400	
$RCTP_{CSP}$ for intervention **[**seconds ATC-aircraft-ATC**]**	280	240
$RCTP_{CSP}$ for surveillance [seconds aircraft-ATC]	340	270
Continuity	0.999	0.95
Service Availability[1]	0.999	
Mean time between failures[2] **(MTBF) [days]**	15	
Maximum outage [minutes]	30	
Outage indication delay [3] **[minutes]**	10	

Notes:

1 – Service Availability of 0.999 implies no more than 9 hours of total outage time in any 12-month period.

2 – A failure is any outage of more than 20 minutes affecting 5 or more aircraft within an OAC's airspace. Failures causing outages for multiple OACs are not counted more than once.

MTBF of 15 days implies no more than 24 failures in any 12-month period.

3 – After an outage begins, indication delay is the time before the communications service provides ATC automation with a positive indication that there is an outage.

6 RCP 240/D Specification

Per DO-306/ED-122, this specification is applicable to data communication.

The end-to-end service shall meet or better these performance parameter values:

RCP type	RCP 240	
TRN **..[seconds ATC HMI-aircraft-ATC HMI]**	210	180
RCTP **--[seconds ATC HMI-aircraft HMI & aircraft HMI-ATC HMI]**	150	120
Continuity	0.999	0.95
Integrity	10^{-5}	

The aircraft shall meet or better these performance parameter values:

RCP type	RCP 240	
$RCTP_{AIR}$ for intervention **..(seconds antenna-HMI-antenna]**	15	10
$RCTP_{AIR}$ for surveillance **(seconds avionics-antenna]**	5	3
Continuity	0.999	0.95
Aircraft equipage availability	0.999	

The communications service shall meet or better these performance parameter values:

RCP type	RCP 240	
RCTP for Intervention **[**seconds ATC-aircraft-ATC**]**	120	100
RCTP for surveillance [seconds aircraft-ATC]	170	84
Continuity	0.999	0.95
Service Availability[1]	0.9999	
Mean time between failures[2] **(MTBF)** [days]	90	
Maximum outage [minutes]	15	
Outage indication delay[3] [minutes]	5	

Notes:

1 – Service Availability of 0.9999 implies no more than 50 minutes of total outage time in any 12-month period for orderly and efficient operations. DO-306/ED-122 requires 0.999 for safety.
2 – A failure is any outage of more than 10 minutes affecting 5 or more aircraft within an OAC's airspace. Failures causing outages for multiple OACs are not counted more than once. MTBF of 90 days implies no more than four failures in any 12-month period.
3 – After an outage begins, indication delay is the time before the communications service provides ATC automation with a positive indication that there is an outage.

7. Monitoring and alerting

While aircraft, operators and air traffic service provision may be qualified for a specific RCP type operation, failures may occur which may cause degradation in the performance of the service to something below that which is required by the intended operation. In such cases, real time monitoring and alerting may be necessary to provide indication to the flight crew and/or controller. The monitoring and alerting criteria are yet to be defined.

8. Applicability of RCP specifications

8.1 Applicability to data link communications

Per DO-306/ED-122RCP types, in conjunction with suitable navigation performance, are deemed to match the needs for safe, orderly and efficient operations as follows.

RCP type	**Satisfies requirements as**
RCP 240	Normal means of communication for application of 30 NM lateral separation and reduced longitudinal separation minima
RCP 400	Alternative means of communication for application of 30 NM lateral separation and reduced longitudinal separation minima
RCP 400	Normal means of communication for application of lateral separation greater than or equal to 50 NM and time-based longitudinal separation

8.2 Applicability to voice communications.

End-to-end voice communications performance required for a given ATC application would be the same as for data link in the same application. However, one link in the end-to-end chain would be very different: Instead of the CSP domain for data link there would be the pilot and ground voice operator

and their data displays and keyboard interfaces to their avionics and ATC automation. Regarding RCP240 it would not be possible for a human-to-human-to-machine link to meet the CSP performance requirements. In fact the same is true for RCP400, which in order to support safety improvements specifies integrity and availability well above the level of existing voice communications.

8.3 Fallback from data link to voice communications

In evaluating the suitability of voice as a fallback arrangement for a data link service outage it must be borne in mind that controllers might be unable to cope with the workload imposed by DCPC voice – data link and third-party voice share the characteristic of presenting data in a format lending itself to processing by FDPSs without any controller intervention.

From a practical point of view a suitable backup for data link communications arrangement may therefore be required to be either voice through a third-party (implying a need to retain sufficient voice communications operators to carry traffic during failures) or an independent backup data link system.

APPENDIX D - Draft GUIDANCE MATERIAL FOR END-TO-END PERFORMANCE MONITORING OF ATS COMMUNICATIONS SERVICES FOR NORTH ATLANTIC AIRSPACE

(Paragraph 3.3 refers)

Draft GUIDANCE MATERIAL FOR END-TO-END PERFORMANCE MONITORING OF ATS COMMUNICATIONS SERVICES FOR NORTH ATLANTIC AIRSPACE

TABLE OF CONTENTS

1 Background

1.1 The North Atlantic FANS Implementation Group (NAT FIG), of the NAT System Planning Group (NAT SPG), has established specific performance requirements for data link systems that support ATS communications and surveillance (CPDLC and ADS-C) in the Region. Those requirements are specified in the GUIDANCE MATERIAL FOR ATS DATA LINK SERVICES IN NORTH ATLANTIC AIRSPACE. The introduction of guidance material for Required Communication Performance (RCP) has added to the monitoring requirements for ATSP's. To ensure that those requirements would be met, there was a need to develop guidance material for end-to-end monitoring of performance against them. A ready model for that was the GUIDANCE MATERIAL FOR END-TO-END SAFETY AND PERFORMANCE MONITORING OF AIR TRAFFIC SERVICE (ATS) DATALINK SYSTEMS IN THE ASIA/PACIFIC REGION. The guidance material here was based on that document, much of the detail copied verbatim**.** However many substantial changes were necessary, to account for differences between the APAC and NAT airspaces and the organizations and existing terms of reference of the ICAO groups and agencies serving them.

2 ICAO Requirement to carry out performance monitoring

a. Annex 11, at 2.26.5, states:

"Any significant safety-related change to the ATC system, including the implementation of a reduced separation minimum or a new procedure, shall only be effected after a safety assessment has demonstrated that an acceptable level of safety will be met and users have been consulted. When appropriate, **the responsible authority shall ensure that adequate provision is made for post-implementation monitoring** to verify that the defined level of safety continues to be met."

b. ATS datalink applications, such as ADS and CPDLC, are being used increasingly in support of separation and will be use in support of reduced separation minima. Accordingly, it is necessary to provide the monitoring to those datalink services, as required by Annex 11. Datalink services comprise both a technical and an operational element. This Guidance Material, which provides a structure and methodology for monitoring, applies only to the technical element.

c. The requirement for on-going monitoring after implementation is based on several factors, including both degradation of performance with time and changes to equipment which may occur, either through modification or under renewal programmes. A major impetus for increased monitoring has been the unanticipated closure of many Ground Earth Stations (GES) around the globe, resulting in loss of dual-GES redundancy in the NAT Region and elsewhere. That has caused grave concern within the NAT System Planning Group (NAT

SPG) as to the continuous availability of data link communications for supporting safe and orderly ATS operations in the Region.

3 Purpose of Guidance Material

The purpose of this guidance material is to:

- Promote a globally standardized approach for ATS data link communications performance monitoring.
- Promote regional monitoring as opposed to merely per-State monitoring, in order to maximize efficient use of resources including expertise, and to enable a broader shared view of performance.
- Promote the sharing of performance information across regions.
- Provide detailed guidance on the requirements for operating the FANS Central Monitoring Agency (FCMA).

4 Role of the NAT FANS Implementation Group (FIG)

a. The role of the FIG regarding monitoring is to address technical and operational problems affecting the transit of datalink aircraft through international airspace. To do this it must oversee the end-to-end monitoring process to ensure the datalink system meets, and continues to meet its performance requirements.

b. The specific tasks of the FIG in that regard are (from the FIG Terms Of Reference):

1. to develop the methodology for the FANS implementation process including harmonization of implementation activities, monitoring requirements*, reporting functions and arrangements among its members for use and distribution of FANS related data*

…

3. to evaluate FANS end to end performance

4. to establish and oversee configuration management for the implementation of FANS systems for the NAT Region

…

7. to implement and administer FANS performance/problem monitoring and reporting system

5 FCMA Role and Resources

a. Work must be done on a daily basis for the NAT FIG to fulfil its role. The FCMA is required to do the daily monitoring, coordination, testing and problem research tasks for the FIG.

b. Recognizing safety oversight responsibilities regarding the implementation and continued use of ATS datalink systems, the following apply:

a) States should ensure that the FCMA has the required tools and personnel with the technical skills and experience to carry out the required functions.

b) States should ensure that the agency is adequately funded to carry out its required functions.

c. The Terms Of Reference for the FCMA are:

The NAT FANS Central Monitoring Agency (FCMA) will be jointly managed by Canada and the United Kingdom and will report to the NAT IMG with respect to FANS implementation, trials and operations.

It will receive and process routine and ad-hoc data and problem reports from end users and interested parties to perform the following functions:

1 Monitor and report communications performance, availability, and problems, with respect to requirements.

2 Develop and promulgate forms, specifications, and procedures required for reporting of problems and routine data.

3 *Monitor and report message traffic statistics.*

4 *Co-ordinate end-to-end system functionality, performance, and interoperability.*

5 *Co-ordinate in order to diagnose and resolve system problems.*

6 *Co-ordinate the development of ground system navigation databases.*

7 *Report ATSUs' FANS capabilities with respect to trials and operational requirements for the Region. Receive advisories of same from ATS providers.*

8 *Co-ordinate with similar agencies for other airspaces.*

9 *Collect notices of service disruptions, restorations, and major system changes. Correlate the information same* to problems reported.

d. FCMA Resource Requirements

i. To be effective, the FCMA must have adequate resources and tools. Level of effort depends on the complexity of the traffic being monitored. There are several factors that affect complexity from an ATS monitoring standpoint such as organization of the airspace, variety in operating procedures, number of aircraft operators, number of airborne equipment variants, number of air traffic service providers, number of ground equipment variants and number of communication service providers.

ii. Coordination is an important part of the FCMA work. In the pursuit of problem resolution, action item resolution, monitoring and testing, many issues arise that require coordination among the various stakeholders. The FCMA has a primary responsibility to provide this coordination function as delegated by the FIG. Coordination with similar agencies in other regions is also important, particularly to expand the information database on problems and trends. An incident may appear to be an isolated case, but the collation of similar reports from different regions might indicate an area that needs more detailed examination.

iii. The following table shows FCMA tasks and the associated resource requirements.

FCMA Task	**Resource Requirement**
• **Manage any data confidentiality agreements as required**	Access to legal services Technical expertise
• **Develop and administer problem report process:** • **De-identify all reports prior to publication** • **Keep the identified reports for processing** • **Request audit data from communication service providers** • **Assign responsibility for problem resolution where possible** • **Analyse the data** • **Identify trends**	Problem reporting data base Decode capability for ATS datalink messages logs and flight datalink message traces from CSPs
• **Administer and monitor an informal end-to-end configuration process.**	Technical expertise
• **Report to the FIG**	Technical expertise

6 Working Principles for the FCMA

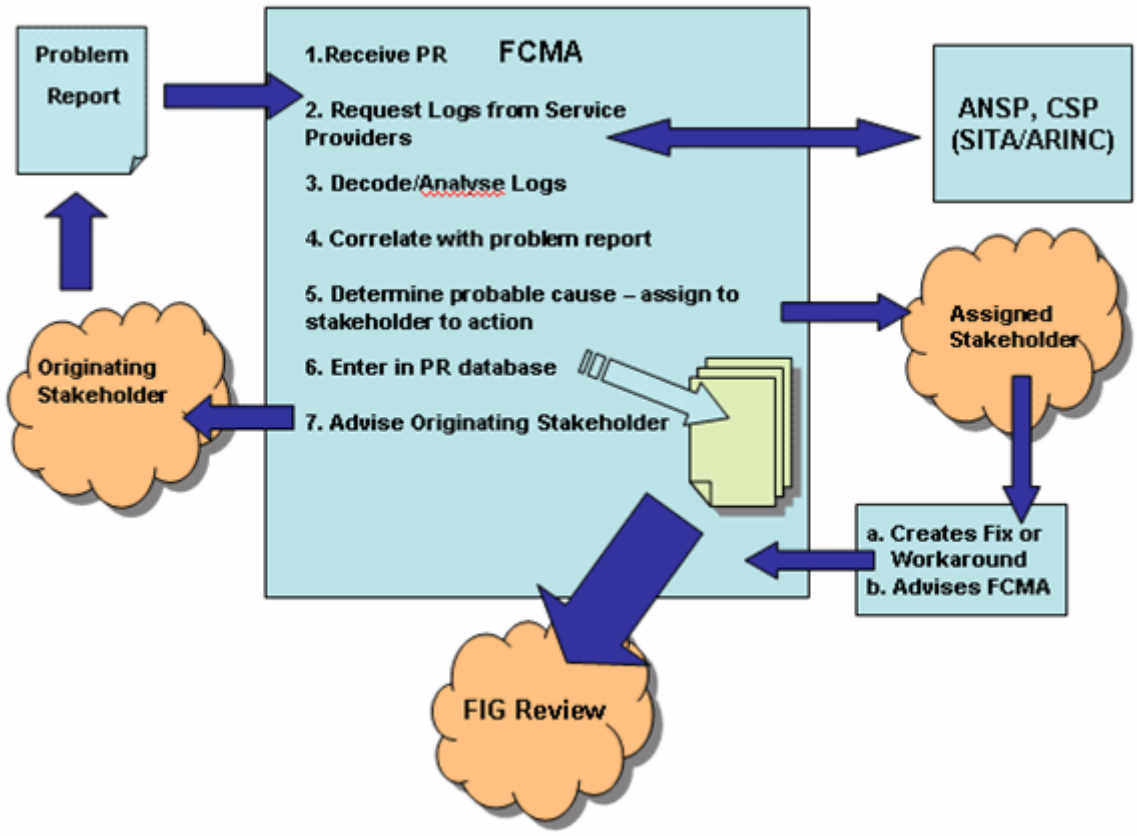
a. Confidentiality Agreements

i. Confidentiality of information is an established principle for problem reporting, and so reports must be de-identified before being made accessible to other agencies. However, it is necessary for the FCMA to retain the identity of the original reports so that problem resolution and follow-up action can be taken.

ii. The FCMA may initiate and maintain confidentiality agreements with each entity providing problem reports, to the extent required by each. In many cases an entity will have a requirement for confidentiality in one case, but not in another, so it is often more expeditious to address confidentiality on a case-by-case basis.

b. Problem Identification and Resolution

i. The problem identification and resolution process, as it applies to an individual problem, consists of a data collection phase, followed by problem analysis and coordination with affected parties to secure a resolution, and recommendation of interim procedures to mitigate the problem in some instances. This is shown in the diagram below.



ii. The problem identification task begins with receipt of a report from a stakeholder, usually an operator, ATS provider or communication service provider. If the person reporting the problem has included sufficient information, then data collection can begin. If not, additional data may have to be requested from the person reporting the problem.

iii. The data collection phase consists of obtaining message logs from the appropriate parties (which will depend on which service providers were being used and operator service contracts). This usually means obtaining logs for the appropriate period of

time from the communication service providers involved. Usually, a log for a few hours before and after the event that was reported will suffice, but once the analysis has begun, it is sometimes necessary to request additional data, (perhaps for several days prior to the event if the problem appears to be an on-going one).

iv. Additionally, some airplane-specific recordings may be available that may assist in the data analysis task. These are not always requested initially as doing so would be an unacceptable imposition on the operators, but may occur when the nature of the problem has been clarified enough to indicate the line of investigation that needs to be pursued. These additional records include:
   - Aircraft maintenance system logs.
   - Built-In Test Equipment data dumps for some airplane systems.
   - SATCOM activity logs.

v. Logs and printouts from the flight crew and recordings/logs from the ATS provider(s) involved in the problem may also be necessary. It is important that the organization collecting data for the analysis task requests all this data in a timely manner, as much of it is subject to limited retention.

vi. Once the data has been collected, the analysis can begin. For this, it is necessary to be able to decode all the messages involved, and a tool that can decode every ATS datalink message type used in the region is essential. These messages include:

- AFN (ARINC 622), ADS and CPDLC (RTCA DO-258/EUROCAE ED-100)
- ARINC 623 messages used in the region.

vii. The analysis of the decoded messages requires a thorough understanding of the complete message traffic, including:
   - Media management messages.
   - Relationship of ground-ground and air-ground traffic.
   - Message envelope schemes used by the particular datalink technology (ACARS).

viii. The analyst must also have a good understanding of how the aircraft systems operate and interact to provide the ATS datalink functions, as many of the reported problems are airplane system problems.

ix. This information will enable the analyst to determine a probable cause by working back from the area where the problem was noticed to where it began. In some cases, this may entail manual decoding of parts of messages based on the appropriate standard to identify particular encoding errors. It may also require lab testing using the airborne equipment (and sometimes the ground networks) to reliably assign the problem to a particular cause.

x. Once the problem has been identified, then the task of coordination with affected parties begins. The stakeholder who is assigned responsibility for fixing the problem must be contacted and a corrective action plan agreed. The stakeholder who initiated the problem report shall be provided with regular updates on the progress and resolution of the problem.

xi. This information (the problem description, the results of the analysis and the plan for corrective action) is then entered into a database covering datalink problems, both in a complete form to allow continued analysis and monitoring of the corrective action and in a de-identified form for the information of other stakeholders. These de-identified summaries are reported at the appropriate regional management forum and then forwarded to other regional FCMA's .

c. Mitigating Procedures

i. The FCMA responsibility does not end with determining the cause of the problem and identifying a fix. As part of that activity, and because a considerable period may elapse while software updates are applied to all aircraft in a fleet, procedural methods to mitigate the problem may have to be developed while the solution is

being coordinated. The FCMA should identify the need for such procedures and provide information to support their development for implementation by the service providers and operators involved.

d. Routine Datalink Performance Reporting

i. An important part of datalink safety performance is the measurement of the end-to-end performance. This should, of course, be carried out prior to implementation of new separation minima, but should continue on a regular basis to give assurance that the safety requirements continue to be met. Datalink performance assessment is based on the RCP parameters and values in the Performance Based *Guidance Material for Communications* and ATS providers should provide the FCMA with regular measurements of these parameters. It is essential that a common format is used by all ATS providers when supplying their data to the FCMA to simplify the task of creating regional performance assessments.

ii. The FCMA will use the information supplied by ATS providers to produce a performance assessment against the established datalink requirements for the region. These requirements are set according to the separation minima being applied, and so may differ within different areas according to usage.

iii. The FCMA performance assessment should be made available to the NAT FIG for their evaluation of system performance against the minimum values defined in the *Performance Based Guidance Material for communications*.

iv. ADS round-trip times are normally measured as the time between sending a contract request and receiving the associated Acknowledgement (ACK) or Message Assurance (MAS) message. CPDLC round-trip times are normally determined from the ATSU end-system time stamps for transmission of the uplink message and reception of the associated MAS.

v. ADS and CPDLC downlink one-way times are defined by the difference between the aircraft time stamp and the ASTU end-system reception time stamp.

vi. ADS and CPDLC success rates are only available for uplink messages. The success rate is expressed as the percentage of messages that receive a successful ACK or MAS within a specified time.

vii. CPDLC Actual Communications Performance (ACP) used for monitoring the RCP TRN is determined by the difference between the time stamp on the CPDLC uplink from the ATSU requiring a Wilco/Unable response to reception of the associated downlink from the aircraft.

Note. When monitoring RCP only those transactions requiring a WILCO/UNABLE response are assessed in order to provide the best modeling of the performance of a CPDLC message used for intervention in a reduced separation scenario.

viii. CPDLC Actual Communications Technical Performance (ACTP) used for monitoring RCTP is determined by the measurement of the difference between the time stamp on the CPDLC uplink and the reception of the corresponding MAS divided by two plus the associated CPDLC downlink time defined by the difference between the aircraft time stamp and the ATSU end-system reception time stamp.

ix. CPDLC Crew Performance is determined by the difference between ACP and ACTP for the same transaction.

e. Configuration Monitoring

i. A variety of technical systems are involved in the datalink process and changes, particularly to software and software parameters, are not infrequent; any change may have an impact on the overall performance of the datalink. It is therefore important that the FCMA is kept informed of each change of configuration of each system including aircraft systems. With this information it is often possible to identify changes that lead to improvements or deteriorations in the datalink performance or that may be associated with particular problems.

ii. All ATS providers, communication service providers, aircraft operators and avionics suppliers should therefore report all system configuration changes to the FCMA. The FCMA will then maintain a database of configuration changes for each system or sub-system. It is not necessary for the FCMA to know the details of changes, but where a change is expected to affect performance, information on the likely effect should be provided.

f. New Procedures and Improved Performance Requirements

i. The FCMA may recommend new end-to-end datalink system performance requirements, either to accommodate new operational procedures, or to enable better monitoring, or to take account of recognised problems.

APPENDIX E – DRAFT WORKING PAPER FOR NAT SPG/44

(Paragraph 5.1 refers)

NORTH ATLANTIC SYSTEMS PLANNING GROUP (NAT SPG)

FORTY-FOURTH MEETING

(Paris, France, 17 to 20 June 2007)

Agenda Item 2: Planning and implementation

2.4 Data link implementation matters

REPORT OF THE NAT SPG TASK FORCE ON REQUIRED COMMUNICATIONS REQUIREMENTS

(Presented by the Chairman of the NAT SPG on behalf of the NAT SPG Task Force on RCP in support of Strategic Objective A and D)

SUMMARY

THIS PAPER PRESENTS THE RESULTS OF THE WORK CARRIED OUT BY THE TASK FORCE ON NAT SPG.

REFERENCES

SUMMARY OF DISCUSSIONS AND CONCLUSIONS OF NAT SPG/43
SUMMARY OF DISCUSSIONS AND CONCLUSIONS OF THE SPECIAL NAT SPG/2007

6. Introduction

The NAT.

7. RCP material

The.

Conclusion 44/x - Changes to the NAT Operations Managers work programme

That the NAT Operations Managers:

a) include in their work programme issues related to Air Traffic Flow Management (ATFM); and

b) report their findings to the NAT IMG.

8. Monitoring

Information was provided concerning the experience gained from the recent volcanic ash exercises.

Conclusion 44/x - Changes to the NAT Operations Managers work programme

That the NAT Operations Managers:

c) include in their work programme issues related to Air Traffic Flow Management (ATFM); and

d) report their findings to the NAT IMG.

9. Documentation management

Conclusion 44/x - Changes to the NAT Operations Managers work programme

That the NAT Operations Managers:

e) include in their work programme issues related to Air Traffic Flow Management (ATFM); and

f) report their findings to the NAT IMG.

10. Action by the meeting

The NAT SPG is invited to:

a) note the information presented herein;

b) endorse the draft guidance material on RCP and end-to-end monitoring;

c) endorse the proposed document methodology proposed in paragraph x.x above;

d) endorse the draft conclusions proposed in paragraphs respectively; and

e) provide guidance to the NAT IMG as required.

– END –