INTERNATIONAL CIVIL AVIATION ORGANIZATION

FINAL

SUMMARY OF DISCUSSIONS AND CONCLUSIONS OF

THE FIFTY-SIXTH MEETING OF

THE NORTH ATLANTIC SYSTEMS PLANNING GROUP

Virtual Meeting, 24 to 25 June 2020

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INTRODUCTION

PLACE AND DURATION

0.1 The teleconference meeting of the North Atlantic Systems Planning Group (NAT SPG) was held from 24 to 25 June 2020, as a partial replacement for its Fifty-Sixth Meeting (NAT SPG/56) which was originally planned to take place from 22 to 25 June 2020. This meeting arrangement was necessitated by the exceptional circumstances of the COVID-19 coronavirus pandemic event that prevented the NAT SPG from gathering at a face-to-face meeting.

OFFICERS AND SECRETARIAT

0.2 The Meeting was chaired by Mrs Hlin Holm (Iceland). Ms Silvia Gehrer, Regional Director of the ICAO European and North Atlantic (EUR/NAT) Office, was the Secretary of the Meeting, assisted by ICAO staff as listed in **Appendix A**.

ATTENDANCE

0.3 The Meeting was attended by 30 participants from 8 States, 3 international organisations, the NAT Central Monitoring Agency (CMA) and Iridium. Lists of participants and contacts are at **Appendix A**.

AGENDA

0.4 The list of meeting documentation is provided at **Appendix B**. Due to the exceptional situation and meeting arrangements, prior agreement was coordinated among the NAT SPG members that the meeting documentation would only include those outcomes of the contributory bodies that were not expected to result in any prolonged or controversial and complex debates. Also, new items or submissions would not be accepted. All such discussions were postponed until the face-to-face NAT SPG/56 meeting which was tentatively planned in January 2021. The intent was to limit the teleconference discussions to routine matters that were required to advance the NAT work programme.

0.5 The NAT SPG agreed to the following agenda:

Agenda Item 1: Review and approval of the agreed draft NAT SPG Conclusions;

Agenda Item 2: Way forward concerning the NAT Data Link Mandate (DLM) temporary accommodation; and

Agenda Item 3: Next meetings of the NAT SPG and its contributory groups.

1. REVIEW AND APPROVAL OF NAT SPG CONCLUSIONS

1.1 NAT SPG CONCLUSIONS APPROVED BY CORRESPONDENCE

1.1.1 The NAT SPG noted that the following NAT SPG/56 Conclusions had been approved by correspondence prior to the current meeting:

NAT SPG Conclusion 56/1 – Procedure for third party data link test facilities

That, the ICAO Regional Director, Europe and North Atlantic, take appropriate actions to urge ARINC (Collins) and SITA on Air, through a State letter, to follow the procedure for third party data link test facilities as presented in **Appendix C** to the Report.

NAT SPG Conclusion 56/2 – Update to NAT OPS Bulletin 2019_003 to include Inmarsat SATCOM terminal configuration guidance

That, the ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish the updated NAT OPS Bulletin 2019_003 Rev 1. - Data Link Performance Improvement Options (Serial no: 2019_003 Rev 1) as presented at **Appendix D** to the Report.

NAT SPG Conclusion 56/3 – Amendments to NAT Doc 006

That, the ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish and promulgate the updated NAT Air Traffic Management Operational Contingency Plan - North Atlantic Region (NAT Doc 006, Part I, v1.13), to include the approved amendments as detailed in **Appendix E** to the Report.

NAT SPG Conclusion 56/4 – Amendments to NAT Doc 007

That, the ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish and promulgate the updated the North Atlantic Operations and Airspace Manual (NAT Doc 007) to include the approved amendments as detailed in **Appendix F** to the Report.

NAT SPG Conclusion 56/5 – Proposed consolidation of current NAT OPS Bulletins describing ACARS Data Link Oceanic Clearance Procedures

That the ICAO Regional Director, Europe and North Atlantic, take appropriate action to delete the current NAT OPS Bulletins (Serial no: 2010_006, 2013_001, 2015_002, and 2015_004) and publish the new NAT OPS Bulletin - ACARS Data Link Oceanic Clearance Flight Crew Procedures (Serial no: 2020_001) as provided at **Appendix G** to the Report.

2. NAT PLANNING AND IMPLEMENTATION PROGRAMMES

2.1 DATA LINK PERFORMANCE

2.1.1 The NAT SPG was presented with a proposal for amendment to the NAT OPS Bulletin 2019-003 Rev 1 (Data Link Performance Improvement Options, issued on 30 January 2020, referenced in 1.1.1 and **Appendix D**). It was noted that the amendment was proposed following the discussion at the North Atlantic Procedures and Operations Group (NAT POG) and North Atlantic Technology and Interoperability Group (NAT TIG) where it was agreed that, although the current Bulletin mitigations were appropriate, additional clarification was suggested concerning the issues associated with a potential loss of SATCOM while in oceanic airspace where VHF (very high frequency) was available.

2.1.2 Therefore, the following was agreed:

NAT SPG Conclusion 56/6 – Update to NAT OPS Bulletin 2019_003 Section 2 on VHF to SATCOM Transitions

That the:

a) NAT OPS Bulletin - Data Link Performance Improvement Options (Serial no: 2019_003) be updated as provided in **Appendix H**;

b) the ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish the updated NAT OPS Bulletin 2019_003 Rev 2.

2.2 SURVEILLANCE SERVICE IN THE NAT / FLIGHT CREW OPERATING PROCEDURES

2.2.1 The NAT SPG was presented with a draft NAT OPS Bulletin (Surveillance Service in the NAT / Flight Crew Operating Procedures) resulting from the work of the NAT Surveillance Service Clarification Project Team (SSC PT). Guidance material was provided to ensure appropriate NAT Region

crew procedures continue to be applied in an expanded surveillance environment and to manage crew expectations.

2.2.2 Based on the above, the following was agreed:

NAT SPG Conclusion 56/7 – NAT OPS Bulletin on Surveillance Service in the NAT / Flight Crew Operating Procedures

That the:

a) NAT OPS Bulletin on Surveillance Service in the NAT / Flight Crew Operating Procedures in **Appendix I** be endorsed, and

b) ICAO Regional Director, Europe and North Atlantic to take appropriate action to publish the NAT OPS Bulletin, as shown in **Appendix I**.

2.3 TEMPORARY ACCOMMODATION OF NAT DATA LINK MANDATE

2.3.1 It was recalled that following an ad-hoc NAT workshop and coordination of its resulting recommendation with the NAT SPG via e-mail correspondence, temporary accommodation measures for non-NAT DLM compliant aircraft in the NAT airspace were put in place from 1 April 2020 for 3 months (EUR/NAT SL Ref: EUR/NAT 20-0187.TEC (NAE/SUL) dated 26 March 2020 refers). These measures had been triggered by the unprecedented impact of the COVID-19 public health contingency on the NAT operations and the dramatic drop in air traffic volumes and types of fleets and operations. The implemented measures allowed more flexibility for NAT airspace users, which were very appreciated in these times of crisis that was deeply affecting the whole global aviation industry.

2.3.2 As the expiry of the agreed accommodation was approaching, extension for another 3 months period until 30 September 2020 was coordinated and approved by the NAT SPG by correspondence prior to this meeting (EUR/NAT SL Ref: EUR/NAT 20-0296.TEC (NAE/CUP) dated 19 June 2020 refers). In doing so, the NAT SPG emphasised that this temporary measure was agreed and extended on the basis that the NAT service provider States and organisations would ensure the conduct of appropriate safety management work and that there would be no consequential safety and/or operational limitations within the NAT and its interface areas with other Regions.

2.3.3 Furthermore, the NAT SPG agreed that a Project Team would need to be established to develop criteria for reinstatement of the NAT DLM, methods and timelines for publication of this information and other related issues based on the Terms of Reference (ToRs) provided in **Appendix J**. It was highlighted that in conducting its work, the project team would take into account the potential effects on the adjacent airspace, in particular on the South Atlantic (SAT). In this regard, the NAT SPG recalled its previous decisions in support of enhanced cooperation between the NAT and the SAT and the establishment of the Atlantic Coordination Meeting (ACM). The NAT SPG's readiness to continue this cooperation and sharing of experience was reiterated. With respect to this specific project team and its work, it was noted that the ICAO Secretariat would ensure coordination with the SAT, as appropriate.

2.3.4 Accordingly, the following was endorsed:

NAT SPG Conclusion 56/8 – NAT DLM Temporary Accommodation Project Team

That the ICAO Regional Director, Europe and North Atlantic, take appropriate measures to establish a NAT Project Team on the Reinstatement of the NAT DLM with the project definition as provided in **Appendix J**.

3. NAT SAFETY PERFORMANCE AND OVERSIGHT ISSUES

3.1 NAT ADS-B HEIGHT MONITORING SYSTEM PROJECT TEAM

3.1.1 The NAT SPG was presented with a proposal from the North Atlantic Safety Oversight Group (NAT SOG) to extend the timeline of the NAT Automatic Dependent Surveillance – Broadcast (ADS-B) Height Monitoring System Project Team (NAT ADS-B HMS PT) until June 2021. It was noted that in line with its ToRs, the project team had progressed its work and presented an interim report with the following 3 options to the recent NAT SOG meeting:

a) Option 1: Retain the Strumble Height Monitoring Unit (HMU);

b) Option 2: Develop a new Height Monitoring System (HMS)in collaboration with NAT Air Navigation Service Providers (ANSPs) utilising existing ADS-B data within the NAT;

c) Option 3: Develop a new Space-based (SB) ADS-B HMS in collaboration with Aireon LLC.

3.1.2 The NAT SOG agreed that a greater, but proportionate quantity of data resulted in a greater safety benefit and, as such, Option 1 was not favoured, and that either Option 2, or Option 3, or a hybrid version of the two could be acceptable in terms of safety (NAT SOG Decision 22/03 refers).

3.1.3 The NAT SPG noted that the project team had not been able to complete its work within the previously agreed timelines and agreed to extend it as requested. It was also agreed that the project team should be tasked to coordinate with the NAT Economic, Financial and Forecast Group (NAT EFFG) regarding the necessary financial assessments of the identified options and report to the NAT SPG through NAT SOG.

3.1.4 Therefore, the following was endorsed:

NAT SPG Conclusion 56/9 – Extension of NAT ADS-B Height Monitoring System Project Team

That the NAT SPG:

a) endorse the extension of the NAT ADS-B Height Monitoring System Project Team to NAT SOG/24 (June 2021); and

b) task the project team to coordinate with the NAT EFFG, regarding a financial assessment of the proposed technical options and report to the NAT SPG.

3.2 NAT ANNUAL SAFETY REPORT (NAT ASR) FOR 2019

3.2.1 The NAT SPG was informed that the preparation of the NAT Annual Safety Report (ASR) 2019 had been delayed due to the COVID-19 contingency situation. Therefore, the following plan was agreed for the development of the NAT ASR 2019:

a) The North Atlantic Scrutiny Group (NAT SG) to conduct a full review and amend as necessary the preliminary scrutiny of July-December 2019 events during the NAT SG/23 meeting, in addition to its normal agenda consisting in scrutinizing January-June 2020 events. The results of the scrutiny of July-December 2019 events shall then be considered validated;

b) The North Atlantic Mathematicians Working Group (NAT MWG) to re-compute the Collision Risk Estimates (CRE) based on the validated scrutiny results for 2019;

c) The NAT CMA to compute the Safety Key Performance Indicators (SKPI) based on the validated scrutiny results for 2019; and

d) The ICAO Secretariat to develop a draft NAT ASR 2019, with support from the NAT SOG Chairman to be presented at the NAT SOG/23 meeting, before being submitted for NAT SPG approval by correspondence.

3.2.2 Therefore, the following was endorsed:

NAT SPG Conclusion 56/10 – Completion of the 2019 NAT Annual Safety Report (NAT ASR 2019)

That the NAT SPG, recognizing the impact of the COVID-19 pandemic on timely delivery of validated information necessary for the production of the NAT ASR 2019, agree to endorse via correspondence and make publicly available the NAT ASR 2019 as soon as practicably possible.

4. NAT DOCUMENTATION UPDATES

4.1 NAT DOC 006 - AIR TRAFFIC MANAGEMENT OPERATIONAL CONTINGENCY PLAN - NORTH ATLANTIC REGION

4.1.1 The NAT SPG was informed about changes related to Chapter 1 – detailed procedures of the Scottish Flight Information Region (FIR), that would be required to the *Air Traffic Management Operational Contingency Plan - North Atlantic Region* (NAT Doc 006), in addition to those referenced in 1.1.1 and Appendix E, as provided by the United Kingdom.

4.1.2 Based on the above, the following was endorsed:

NAT SPG Conclusion 56/11 – PfA to NAT Doc 006, Part I, Detailed Procedures, Scottish FIR

That the:

a) proposal for amendment (PfA) to the *Air Traffic Management Operational Contingency Plan - North Atlantic Region* (NAT Doc 006, Part I), provided in **Appendix K**, related to Chapter 1 - Scottish FIR be endorsed; and;

b) ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish and promulgate the NAT Doc 006, Part I, v1.14.

4.2 NAT DOC 007 - NAT OPERATIONS AND AIRSPACE MANUAL

4.2.1 The NAT SPG reviewed the proposed amendments to the *North Atlantic Operations and Airspace Manual* (NAT Doc 007) related to operation of transponders and NAT High Level Airspace (HLA) approvals in the Shanwick Oceanic Control Area (OCA) South East Corner.

4.2.2 Consequently, the following was endorsed:

NAT SPG Conclusion 56/12 – PfA to NAT Doc 007 related to Operation of Transponders and HLA approvals in the Shanwick OCA South East Corner

That the:

a) proposed amendment to the *North Atlantic Operations and Airspace Manual* V.2020-1 (NAT Doc 007) section 6.8.1 and section 3.2.1.b be endorsed (**Appendix L** refers); and

b) ICAO Regional Director, Europe and North Atlantic, take appropriate action to include the proposed changes in the next NAT Doc 007 update (v2020-2).

5. WORK PROGRAMME INCLUDING SUB-GROUPS

5.1 REVIEW OF NAT REGIONAL CRISIS RESPONSE PROCESSES

5.1.1 The NAT SPG was presented with a proposal stemming from the recent NAT SOG discussions to initiate a "lessons learnt" review of the NAT SPG response to the COVID-19 crisis, including consideration of the introduction of a crisis management procedure. In this regard, the NAT SPG emphasised that although the actions by individuals and groups within the NAT SPG structure in response to the COVID-19 crisis and the subsequent wider coordination were considered positive, the experiences and lessons would need to be gathered and further analysed in order to identify further improvements.

5.1.2 Therefore, the NAT SPG agreed that a review should be conducted by a Project Team to be established and led by the North Atlantic Implementation Management Group (NAT IMG) and NAT SOG Chairs who would draft the TORs to be approved by the NAT SPG.

5.1.3 Therefore, the following was endorsed:

NAT SPG Conclusion 56/13 – Review of NAT regional crisis response processes

That:

a) the NAT SPG initiate a review of the NAT SPG crisis response processes based on experience from the COVID-19 pandemic;

b) task the NAT IMG and NAT SOG to establish a specific project team led by the NAT IMG/NAT SOG Chairs;

c) the NAT IMG and NAT SOG Chairs, in consultation with the Groups' members, to prepare a draft ToR and report to the NAT SPG.

5.2 ORGANISATION OF NAT MEETINGS FROM SEPTEMBER 2020 ONWARDS

5.2.1 The NAT SPG discussed planning for the organisation of the NAT meetings in the second half of 2020. It was noted that the ongoing COVID-19 pandemic and consequential travel restrictions presented unprecedented challenges. The NAT meetings in the first half of 2020 were carried out through teleconferences whereby the NAT work programme was advanced as far as possible. However, it was identified that teleconferences had certain limitations and did not facilitate productive discussions, especially when the topics were of a complex or controversial nature. Face-to-face meetings were more conducive for such discussions. Whilst the NAT contributory bodies and the Secretariat were doing their best to advance the NAT work through teleconferences, limits to what could be achieved via teleconferences were identified. Therefore, the NAT SPG highlighted its unequivocal preference to continue the NAT meetings via face-to-face meetings and use teleconferences for short-duration activities, e.g. project teams.

5.2.2 At the same time, the NAT SPG also acknowledged that planning face-to-face meetings for the second half of 2020 was a challenge as there were many uncertainties at present concerning potential travel restrictions that may or may not exist from September 2020. The NAT SPG noted the willingness of the NAT States to host the NAT meetings face-to-face from September 2020 (Iceland, Portugal, Ireland), as well as the NAT SG Rapporteur's and the NAT CMA's preference for the continuation of the NAT SG meetings in person from October 2020.

5.2.3 The NAT SPG noted that the following items needed to be considered in the planning of events for the second half of 2020:

a) public health/travel restrictions and regulations in the host-State;

b) travel restrictions for the majority of States and organizations normally represented and ICAO; and

c) cost restrictions that become an issue due to the COVID-19 crisis.

5.2.4 The NAT SPG also considered an option of hybrid meetings where at least 50% of participants could attend in person and others via teleconferences. However, this solution would have its own challenges due to the time differences and duration.

5.2.5 In conclusion, the NAT SPG agreed it would strive for face-to-face meetings as far as possible. However, if existing limitations continued to prevail, the meetings in the second half of 2020, at least those planned in September and October could still be continued via teleconferences. In agreeing to this, the NAT SPG was cognizant of the potential effects on its work programme and further delay of some actions, e.g. NAT ASR 2019. The NAT SPG therefore agreed to review the planning in the beginning of August 2020 and take decisions on the next steps at that stage. To that end a specific NAT SPG teleconference would be organised in the beginning of August 2020.

6. ANY OTHER BUSINESS

6.1 TOPICS FOR THE NEXT MEETING

6.1.1 The NAT SPG noted that topics postponed for the face-to-face meeting included the proposed update of the NAT OPS Bulletin 2018_003, cybersecurity, NAT 2030 Vision etc. IATA expressed its concern about the postponement of publishing of the amended draft NAT OPS Bulletin 2018_003 that had gone through discussions and approval by several NAT SPG contributory groups. Therefore, in order to avoid a prolonged discussion which was not practical or feasible given the teleconference format of this meeting and also the NAT SPG spirit of achieving as far as possible a consensus driven agreement, it was decided, based on the agreement made by the NAT SPG prior to the meeting, to postpone any such topics until the face-to-face meeting.

6.2 NEXT MEETING

6.2.1 It was agreed that a face-to-face NAT SPG/56-2 would be convened at the EUR/NAT Office of ICAO in Paris, France, on 26 to 28 January 2021. The NAT SPG/57 meeting is planned to be held on from 21 to 24 June 2021.

APPENDIX A — LIST OF PARTICIPANTS

(Paragraph 0.3 refers)

CANADA
Jeff DAWSON
Pierre RUEL
Noel DWYER

FRANCE
Christophe GUILPAIN

ICELAND
Hlin HOLM (NAT SPG Chair)
Bjarni STEFANSSON
Thora HALLDORSDOTTIR
Pall S. PALLSON

IRELAND
Sean PATRICK (NAT IMG Chair)
Joe RYAN
Paul KENNEDY
John O'SULLIVAN

NORWAY
Roald LARSEN

PORTUGAL
Antonio RITA
Carlos ALVES
Alda MIRANDA (NAT EFFG Chair)

UNITED KINGDOM
Jean-Francois SOLDANO
Martin DONNAN

UNITED STATES
Jeffrey SZCZYGIELSKI
Jennifer KILEO (NAT SOG Vice-Chair)
Travis FIEBELKORN
Jim WEBB
Meghan CURRIER

International Air Transport Association (IATA)
Jeffrey MILLER
Rich STARK

International Business Aviation Council (IBAC)
Andreas MEYER

International Federation of Air Line Pilots Association (IFALPA)
Carlos RODRIGUEZ

Iridium
Michael HOOPER

NAT Central Monitoring Agency (NAT CMA)
Carolyn READ

ICAO HEADQUARTERS
Herman PRETORIUS

ICAO EUR/NAT
Silvia GEHRER (NAT SPG Secretary)
Elkhan NAHMADOV
Abbas NIKNEJAD
Arnaud DESJARDIN
Sarantis POULIMENAKOS
Sven HALLE
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Leyla SULEYMANOVA
Catherine DALY
Mihaela BRUNETTE
Patricia CUFF

Participants and Members Contact List

(Paragraph 0.3 refers)

To be included only on Restricted Website of NAT SPG

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APPENDIX B — LIST OF MEETING DOCUMENTATION

(paragraph 0.4 refers)

PPT	*Ag item*	*Title*	*Presented by*
01	-	Draft NAT SPG Conclusions for approval and Issues to be addressed at NAT SPG/56-1	Secretariat
-	-	NAT EFFG/38 Summary of Discussions	Secretariat
-	-	NAT IMG/56 Summary of Discussions	Secretariat
-	-	NAT SOG/22 Summary of Discussions	Secretariat

APPENDIX C — PROCEDURE FOR THIRD PARTY DATA LINK TEST FACILITIES

*(paragraph 1.1.1, **NAT SPG Conclusion 56/1**, refers)*

The procedures specified here apply to 3rd Party FANS 1/A+ Test Facilities. These test facilities provide a valuable service for individual aircraft operators, and are useful for training and verification of system operation.

A 3rd Party FANS1/A+ Test Facility is defined as independent of FANS1/A+ Test Facilities owned/operated by OEMs, ANSPs and avionics manufacturers. Separate procedures are provided for 3rd Party Automated FANS1/A+ Test Facilities versus 3rd Party Staffed FANS1/A+ Test Facilities.

Note: FANS1/A+ Test Facilities that are owned/operated by OEMs, ANSPs or avionics manufacturers are exempt from these procedures, as they already follow stringent processes and have a proven history of proper operation of both test centers and aircraft avionics when conducting datalink testing. FANS1/A+ Test Facilities that are owned/operated by OEMs, ANSPs or avionics manufacturers may accommodate specific experimental flight test needs that fall outside the required procedures for 3rd Party FANS1/A+ Test Centers.

Any violation of these procedures (observed by operators, test facilities, ANSPs or OEMs/suppliers) should be reported to the DLMA via a problem report logged on the fans-cra.com website.

Required Procedures for 3rd Party AUTOMATED FANS1/A+ Test Facilities:

1. Development and use of a new 3rd Party Automated FANS1/A+ Test Facility should be coordinated with and approved by both major Communication Service Providers, ARINC and SITA, before a facility becomes operational.

2. Any 3rd Party Automated FANS1/A+ Test Facility intending to conduct CPDLC testing with aircraft should enter an agreement with the CSPs (ARINC and SITA) to follow these procedures, approved by the CSPs (ARINC and SITA). The CSPs should not allow network access to any 3rd Party Automated FANS1/A+ Test Facility that has not completed this agreement.

3. The defined four-character logon identifier of the 3rd Party Automated FANS1/A+ Test Facility should be registered with ARINC, SITA and the DLMA (Data Link Monitoring Agency).

4. Any aircraft intending to use the 3rd Party Automated FANS1/A+ Test Facility should register its aircraft registration number (tail number) with the 3rd Party Automated FANS1/A+ Test Facility. Note: Use of the 3rd Party Automated FANS1/A+ Test Facility by a registered aircraft does not require prior scheduling.

5. The 3rd Party Automated FANS1/A+ Test Facility should ignore/discard any attempted connection from an aircraft that is not registered with that facility.

6. The 3rd Party Automated FANS1/A+ Test Facility may be used to test any registered aircraft's capability or the following FANS1/A+ functions:

    a. Establishment of a successful AFN logon connection.

    b. Receipt and display of a pre-defined freetext uplink UM169. The Automated Test Facility should format the UM169 as follows: "THIS IS NOT ATC. YOU ARE LOGGED ON TO AN AUTOMATED FANS TEST STATION."

    c. Transmission (via pilot input) of a response downlink DM03 ROGER or DM02 STANDBY (to the UM169).

    d. Transmission (via pilot input) of a freetext downlink DM67, per the following guidelines:

i. Downlink of free text “TEST ADS PERIODIC” should result in the Automated Test Facility establishing a predefined ADS Periodic contract with the aircraft.

ii. Downlink of free text “TEST ADS EVENT” should result in the Automated Test Facility establishing a predefined ADS Event contract with the aircraft.

iii. Downlink of free text “TEST ADS DEMAND” should result in the Automated Test Facility establishing a predefined ADS Demand contract with the aircraft.

iv. Downlink of free text “CANCEL ADS” should result in the Automated Test Facility cancelling all ADS contracts and terminating the ADS connection with the aircraft.

v. Downlink of any other free text should result in the Automated Test Facility uplinking UM169 as follows: “THIS IS NOT ATC. YOU ARE LOGGED ON TO AN AUTOMATED FANS TEST STATION.”

e. Transmission (via pilot input) of a CPDLC connection termination (.DR1. disconnect request).

f. If the connection between the aircraft and the 3rd Party Automated Test Facility has not had any activity for a period of 30 minutes, then the 3rd Party Automated Test Facility should terminate the connection via UM161. Note: This accommodates the case where an aircraft does not terminate the connection.

g. ***Absolutely no other CPDLC messages should be supported by the 3rd Party Automated FANS1/A+ Test Facility.*** *Note: This limits the 3rd Party Automated FANS1/A+ Test Facility CPDLC message set to UM169, DM02, DM03 and DM67. The free text content of UM169 is limited to the single character string “THIS IS NOT ATC. YOU ARE LOGGED ON TO AN AUTOMATED FANS TEST STATION.”. The free text content of DM67 is not limited.*

Required Procedures for 3rd Party STAFFED FANS1/A+ Test Centers:

1. Development and use of a new 3rd Party Staffed FANS1/A+ Test Facility should be coordinated with and approved by both major Communication Service Providers, ARINC and SITA, before a facility becomes operational.

2. Any 3rd Party Staffed FANS1/A+ Test Facility intending to conduct CPDLC testing with aircraft should enter an agreement with the CSPs (ARINC and SITA) to follow these procedures approved by the CSPs (ARINC and SITA). The CSPs should not allow network access to any 3rd Party Staffed FANS1/A+ Test Facility that has not completed this agreement.

3. The defined four-character logon identifier of the 3rd Party Staffed FANS1/A+ Test Facility should be registered with ARINC, SITA and the DLMA (Data Link Monitoring Agency).

   a. Any aircraft intending to use the 3rd Party Staffed FANS1/A+ Test Facility should register its aircraft registration number (tail number) with the 3rd Party Staffed FANS1/A+ Test Facility.

4. The 3rd Party Staffed FANS1/A+ Test Facility should ignore/discard any attempted connection from an aircraft that is not registered with that facility.

5. The 3rd Party Staffed FANS1/A+ Test Facility should reject any attempted connection from an aircraft that is registered with that facility, but has not scheduled a test session.

6. The 3rd Party Staffed FANS1/A+ Test Facility may be used to test an aircraft’s capability for all FANS1/A+ functions (both CPDLC and ADS-C), with the following restrictions:

   a. Every test session should be scheduled in advance between the operator and the 3rd Party Staffed FANS1/A+ Test Facility.

   b. Every test sesssion with the 3rd Party Staffed FANS1/A+ Test Facility should follow a written

test script that has been provided by the operator to the 3rd Party Staffed FANS1/A+ Test Facility, and agreed to by all participants prior to the test session.

c. The written test script should conclude with a test step to end all connections, both CPDLC and ADS-C. The procedure to end the connections can be either pilot-initiated or ground-initiated, depending on the intent of the test.

d. During the test session with the 3rd Party Staffed FANS1/A+ Test Facility, any deviations from the test script should be recorded by the operator.

e. After the test session with the 3rd Party Staffed FANS1/A+ Test Facility, the operator should keep a copy of the test script, any deviations, and the results for a period of at least six months. This record should be made available to the DLMA in the event of any investigation.

f. If the test session with the 3rd Party Staffed FANS1/A+ Test Facility is planned to take place while airborne, the ATC center(s) controlling the aircraft during the test session should be notified in advance that the aircraft will be testing FANS features, with a 3rd Party Staffed FANS1/A+ Test Facility, while under voice control of the ATC center(s). Note: No special consideration is expected from ATC; the notification is to be provided as a courtesy.

g. If the test session with the 3rd Party Staffed FANS1/A+ Test Facility is planned to take place while airborne, the written test script should include a banner at the top of the document stating "FLIGHT CREW: DO NOT FOLLOW ANY CPDLC COMMANDS DURING FLIGHT. ALL AIRCRAFT MANOEUVERS MUST BE COMMANDED BY VOICE THROUGH THE APPROPRIATE CONTROLLING ATC CENTER. ALL CPDLC COMMANDS RECEIVED DURING THIS TEST ARE FROM A TEST CENTER AND ARE NOT FROM AIR TRAFFIC CONTROL."

h. If the test session with the 3rd Party Staffed FANS1/A+ Test Facility is planned to take place while airborne, prior to the beginning of the test session, both parties should acknowledge verbally that the test steps are not to be used to control the aircraft and that voice contact with the aircraft's actual controlling ATC center should be maintained and followed during the entire test.

i. If the test session is taking place while airborne, the flight crew should have one crew member communicate with ATC by voice while the other crew member communicates with the test center operator at the 3rd Party Staffed FANS1/A+ Test Facility by CPDLC.

APPENDIX D — UPDATES TO NAT OPS BULLETIN 2019_003 TO INCLUDE INMARSAT SATCOM TERMINAL CONFIGURATION GUIDANCE

(*paragraph 1.1.1, NAT SPG Conclusion 56/2, refers*)

NAT OPS BULLETIN

Serial Number: **2019_003 Rev 1** **Issued: ~~09 July~~15 December 2019**
Subject: **Data Link Performance Improvement Options**
Originator: **NAT SPG** **Effective: 15 December ~~09 July~~ 2019**

The purpose of this North Atlantic Operations Bulletin (NAT OPS) is to provide guidance to North Atlantic (NAT) operators regarding options that are available to improve data link performance.

Any queries about the content of the attached document should be addressed to:

ICAO EUR/NAT Office: ***icaoeurnat@paris.icao.int***

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NAT OPERATIONS BULLETIN – DATA LINK PERFORMANCE IMPROVEMENT OPTIONS

1. Purpose of Bulletin. The purpose of this bulletin is to provide guidance to North Atlantic (NAT) operators regarding options that are available to improve data link performance.

2. Background. Application of the reduced lateral and longitudinal separation minima in the NAT Region is dependent on a smooth functioning FANS 1/A data link system. Various known data link related deficiencies in aircraft systems and poor data link performance have a detrimental effect on the air traffic control system and impede aircraft operator's efforts to obtain performance-based communication and surveillance (PBCS) authorizations. Many of these known deficiencies have already been fixed by aircraft manufacturers and software upgrades are available. To ensure the best possible functioning of the NAT air traffic control system, it is of utmost importance that aircraft operators always operate the latest available FANS 1/A related software version in aircraft that fly in the NAT high level airspace (HLA) and that the aircraft systems are configured in an optimal manner. Meanwhile, implementation of improvements and corrections is also a priority undertaking for the ground and network segments of the overall FANS 1/A system.

3. The list of recommended data link performance improvement options provided in the **Attachment** to this OPS Bulletin describes the problems and solutions identified to improve data link performance. However, it should be noted that not all aircraft operators experience all these problems and therefore not all solutions apply to all aircraft operators. Additionally, while acknowledging there is confidence that the recommended improvement options would improve the data link performance, it should be noted that these updates might not be necessarily seen as sufficient to ensure a PBCS authorization. Aircraft operators are advised to consult with aircraft manufacturers for guidance regarding implementation of the improvement options.

4. The certification status versus EUROCAE ED-122 / RTCA DO-306 standards and PBCS authorization requirements should be clarified by aircraft operators in coordination with the manufacturers concerned, recognizing the aircraft operators need to consider the economic and operational aspects and priorities.

5. Websites

5.1 The ICAO EUR/NAT Office Website is at: **www.icao.int/eurnat**. Click on **EUR & NAT Documents** >> **NAT Documents** to obtain NAT Operations and NAT Region Update Bulletins and related project planning documents.

6. Contacts

6.1 Any queries about the content of this bulletin should be addressed to ICAO EUR/NAT Office:

icaoeurnat@paris.icao.int.

ATTACHMENT - LIST OF DATA LINK PERFORMANCE IMPROVEMENT OPTIONS

PROBLEM / ISSUE	SOLUTIONS / ACTIONS
1. HF datalink – next-on-busy 1.1 Airbus ATSU and Rockwell Collins CMU-900 avionics may contain a feature called "next-on-busy" by which those avionics send a new downlink message via HF datalink when outside of VHF coverage and SATCOM is busy sending a previous downlink, instead of waiting for SATCOM to finish sending the previous downlink and then sending the new downlink via SATCOM. This feature reduces datalink performance because the avionics can actually deliver the new downlink more quickly if they wait for SATCOM to finish sending the previous downlink and then send the new downlink via SATCOM. On airframes equipped with Rockwell Collins CMU-900, this problem is compounded by subsequent downlink messages being queued while the avionics wait for acknowledgement of the HF datalink downlink message.	*Solution a): For CMU-900 installations with Iridium SATCOM where PBCS is showing poor performance, place the HF in "voice-only". This option removes HFDL as an available media so the "next-on-busy" function will not occur.* At the recent FAA PARC CWG40, an Iridium SATCOM equipped operator demonstrated the PBCS performance impact of HFDL "next-on-busy". Some other operators have also taken this action to place HF into "voice-only" mode. Iridium SATCOM operators, equipped with CMU-900, could take this action on interim basis prior to an available CMU software. See item 4 below on HFDL for similar recommendation.
	Solution b): Work with Airbus and Rockwell Collins to install software versions that disable the next-on-busy feature. (For the Rockwell Collins CMU-900 with recent software, this can be done with a database update).
2. VHF to SATCOM Transitions 2.1 Transitions from using VHF to using SATCOM, especially when they occur repeatedly in a short period of time, reduce datalink performance because the ACARS protocols are generally not designed to maximize performance but rather to minimize cost by persistently attempting to use less costly VHF.	*Solution a): Disable VHF datalink just prior to entering oceanic airspace* Implement flight crew procedures to disable VHF datalink (usually by placing the VHF radio used for VHF datalink into voice mode) just prior to entering oceanic airspace or prior to leaving contiguous VHF coverage in order to proactively force SATCOM use. Conversely, enable VHF datalink when exiting oceanic airspace or entering contiguous VHF coverage.
	Solution b): Implement more precise VHF region definitions In avionics that offer the capability to prefer specified subnetworks in defined geographic regions (including 777 DCMF and 787 CMF), implement more precise VHF region definitions that exclude areas of the world with only intermittent VHF subnetwork coverage in order to force SATCOM use in those areas. Such areas, in which the DLMA has observed consistent performance problems, include the North Pacific near the Aleutian Islands and the Kamchatka Peninsula, the South Pacific near New Caledonia and Vanuatu, and the North Atlantic near Bermuda and the Azores.

PROBLEM / ISSUE	SOLUTIONS / ACTIONS
	Solution c): Implement the ARINC 618 RAT1 timer Upgrade ACARS router avionics (CMU or equivalent) software to include the new ARINC 618 RAT1 timer when it becomes available. This timer is intended to improve performance for FANS downlink messages during VHF-to-SATCOM transitions by additionally attempting to send a message via SATCOM when attempts to send it via VHF have not been successful for 60 seconds (such as when exiting land-based VHF coverage). This feature is available on some new aircraft types and will gradually become available for retrofit via software updates on existing aircraft.
3. "Ack-and-toss" 3.1 ACARS router (CMU or equivalent) avionics may for various reasons acknowledge receipt of a FANS uplink message but then fail to deliver the message to the avionics that host the FANS applications. This is commonly known as "ack-and toss" behaviour.	*Solution a) Rockwell Collins CMU-900 software problem* For the 747-8, Boeing has certified core software -202 that fixes this problem. For the 737, 747-400, 757, 767 and MD11, Rockwell Collins is certifying core software -014 that fixes this problem. For the 747-400, 757, and MD-11, Boeing and Rockwell Collins are investigating certification opportunities.
	Solution b) Boeing 777 AIMS-2 software problem Boeing developed AIMS-2 BPV17.1 software that fixed this problem.
	Solution c) Airbus A320/A330/A340 software problem This problem occurs only in the ATSU CSB/CLR7.1 to 7.4 software versions. Airbus is developing the CSB/CLR7.5 software that fixes this problem. The issue is also fixed in the CSB/CLR9 software under development.
	Solution d) ARINC 618 false-positive duplicate uplink block identifier (UBI) determination ARINC 618-8, which was published in August 2016, contains a recommended avionics enhancement that reduces the likelihood of this problem occurring. For the 777, Boeing is developing AIMS-2 BPV17B software that implements the avionics enhancement. For the 787, Boeing developed CMF BPV4 software that implements the avionics enhancement. For the Honeywell CMU Mark II, Honeywell developed -522 software that implements the avionics enhancement. Similar software upgrades are or will be available for other affected ACARS router (CMU or equivalent) avionics, although it should be noted that the Rockwell Collins CMU-900 was never subject to this problem; the way it detects duplicate uplink blocks was standardized in ARINC 618-8 as the recommended avionics enhancement. A complete

PROBLEM / ISSUE	SOLUTIONS / ACTIONS
	solution, however, requires the Communication Service Providers (CSPs) to ensure that two sequential non-general response uplinks do not contain the same UBI value.
4. HF data link - general 4.1 HF datalink performance has not been demonstrated to meet the RCP240 and RSP180 specifications, although for various reasons the avionics may send FANS downlink messages via HF datalink. This behaviour has a detrimental effect on data link performance.	*Solution Manually prevent HF datalink use* Prevent HF datalink use manually by implementing flight crew procedures to disable HF datalink (usually by placing the HF radio used for HF datalink into voice mode).
5. Internetworking 5.1 The DLMA has observed that some performance problems are caused by the challenges of effective CSP internetworking when an aircraft operator chooses to use one of the two global CSPs (ARINC or SITA) for VHF and the other global CSP for SATCOM. (The DLMA also realizes that some aircraft operators configure their avionics to first prefer regional DSPs, such as Avicom in Japan, which has not been shown to affect performance).	*Solution: For aircraft operators that do not configure their avionics to first prefer a regional CSP, use the same global CSP for both VHF and SATCOM* It is likely that the data link performance will be improved if the same global CSP is used for both VHF and SATCOM.
6. Large Pilot Operational Response Time (PORT) values 6.1 PORT is one component of the Actual Communications Performance (ACP), the other being the Actual Communications Technical Performance (ACTP). For an uplink-downlink CPDLC transaction, PORT captures the human portion of the transaction time and ACTP captures the technical (mainly network) portion of the transaction time. Accordingly, large PORT values reduce performance.	*Solution: Implement flight crew procedures to respond to CPDLC messages with STANDBY when appropriate.* In accordance with ICAO Doc 9869, Performance-Based Communication and Surveillance (PBCS) Manual, ATS providers should exclude CPDLC transactions with STANDBY responses from performance monitoring. ICAO Doc 10037, Global Operational Data Link (GOLD) Manual explains in paragraph 4.3.2.4 when STANDBY responses are appropriate under certain circumstances: *4.3.2.4 The flight crew should respond to CPDLC messages as soon as practical after they are received. For most messages, the flight crew will have adequate time to read and respond within one minute. However, the flight crew should not be pressured to respond without taking adequate time to fully understand the CPDLC message and to satisfy other higher priority operational demands. If additional time is needed, the flight crew should send a RSPD-3 STANDBY response.*

PROBLEM / ISSUE	SOLUTIONS / ACTIONS
7. 747-8 and 787 SATCOM problems 7.1 The 747-8 and 787 aircraft occasionally experience undiagnosed SATCOM problems that have been shown to reduce performance. Aircraft operators are urged to assist Boeing and Rockwell Collins with investigating these problems by promptly submitting service requests to Boeing for SATCOM problems and by providing any requested information (such as SDU logs). The same recommendation to operators applies whenever SATCOM issues are reported/suspected on any other individual airframes.	*Promptly submit service requests to Boeing for SATCOM problems and provide any requested information (such as SDU logs).*
8. Unknown causes 8.1 If a data link performance problem has an unknown cause, then the DLMA recommends submitting a problem report at http://www.fans-cra.com/ so that the DLMA and other involved stakeholders can attempt to determine the cause.	*Submit problem reports at http://www.fans-cra.com/*
9. Maximising access to the Classic Aero Ground Earth Station (GES) services: 9.1 In the Inmarsat SATCOM system, there are a multitude of transmission paths available via the different ground stations and satellites. If one path fails, the aircraft may be able to switch to an alternate path provided the Operator Requirement Table (ORT) in the SATCOM terminal is correctly configured. 9.2 Proper configuration of the ORT table is therefore vital for maximizing availability of SATCOM services in the NAT.	*Operators are requested to ensure that they review all Service Information Letters (SILs) and Software Bulletins (SBs) released from their Satcom avionics manufacturers, taking particular care to ensure that their advice on Operator Requirement Table (ORT) set-up for optimising accessibility to Inmarsat's GES resources is taken. In doing this, it will be ensured that all available satellite/GES combinations are included in the ORT, optimising access to the communications resource. This will maximise the aircraft capability to switch to an alternate communication path in case of a failure in the SATCOM communication chain.* *Below are some links to the SATCOM manufacturers' information portals:* *Cobham: https://sync.cobham.com/satcom/* *Honeywell: https://myaerospace.com/* *Thales: https://www.thalesgroup.com/en/customer-online* *Rockwell Collins: https://www.shopcollins.com]*
~~9~~10. Software updates ~~9~~10.1 Aircraft and avionics manufacturers work persistently on fixing problems that have been identified in data link operations. Periodically new software releases are issued that solve some of the problems that have been identified. Some of those fixes may improve data link performance and most of them fix issues that cause problems for pilots and air traffic controllers in the use of data link.	*Update FANS 1/A related software using the list of recommended aircraft avionics software versions provided in the table below.*

PROBLEM / ISSUE	SOLUTIONS / ACTIONS
9.2 To ensure the best possible functioning of the NAT air traffic control system it is of utmost importance that aircraft operators take care to always operate the latest available FANS 1/A related software version in aircraft that fly in the NAT high level airspace and to ensure that the aircraft systems are configured in an optimal manner. A list of recommended aircraft avionics software versions is provided in the table below. 9.3 It should be noted that new software versions that fix several known data link problems will become available for many aircraft types within the next year. Operators are advised to seek information from aircraft manufacturers about the status of those new software releases.	

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RECOMMENDED AVIONICS DATA LINK SOFTWARE VERSIONS

Recommended software versions for NAT data link operations			
Aircraft type	**FANS software**	**ACARS software**	**Notes**
A318/A319/A320/A321	CSB7.~~4~~5 or CSB9	CSB7.4 or CSB9	Aircraft with Thales FMS: S8
A330/A340	CLR7.45 or CLR9	CLR7.4 or CLR9	Aircraft with Thales FMS: T6
A350	CLV1.~~3.1~~4	S4	
A380	CLA4.~~1~~2	S~~2.1~~3	
MD11	FMS Pegasus -923	Refer to applicable Service Bulletins and/or STCs	
B736/7/8/9	FMS U11, U12, or U13		
B744	With original FMS: Load 16		
	With B748 FMS: BPV4.0		
B748	FMS BPV4.0		
B75x	Pegasus I FMC – Peg '09 Pegasus II FMC – BP1		
B76x			
B77X	With AIMS-1: BPV16		
	With AIMS-2: V17a.1 or V17B~~BPV17a.1~~		
B78X	FMF BPV4 with CMF BPV5~~CMF BPV5~~		
Beechcraft 4000	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	3rd party STCs
Bombardier Learjet 35, 36, 35A, 36A, 40, 40XR, 45, 45XR, 60, 60XR	Universal Avionics FMS SCN 1002.1	Universal Avionics UniLink UL-80X SCN 31.3	
Bombardier Challenger 300, 350	Collins Proline 21 Advanced	Collins RIU-4000	
Bombardier Challenger 600, 601, 601-1A, 601-3A, 601-3R, 604	Universal Avionics FMS SCN 1002.1	Universal Avionics UniLink UL-80X SCN 31.3	

Recommended software versions for NAT data link operations			
Aircraft type	**FANS software**	**ACARS software**	**Notes**
Bombardier Challenger 600, 601, 601-1A, 601-3A, 601-3R	Honeywell NZ6.1.1	Honeywell CMU MK II+	
Bombardier Challenger 605, 650	Collins Proline 21 Advanced	Collins CMU-4000	
Bombardier Global 5000 GVFD	Collins Proline Fusion	Collins DLCA-6000	
Bombardier Global 6000	Collins Proline Fusion	Collins DLCA-6000	
Bombardier Global Express, Global Express XRS, Global 5000	Honeywell NZ6.1.1	Refer to applicable Service Bulletins/STCs	
Bombardier Global 7500	Collins Proline Fusion	Collins DLCA-6000	
Dassault F50, F50EX	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	3rd party STCs
Dassault F50, F50EX	Honeywell NZ6.1.1	Honeywell CMU MK II+	3rd party STCs
Dassault F2000	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	3rd party STCs
Dassault F2000 DX/EX/LX/S	Honeywell EPIC NZ7.1.2	Honeywell EPIC CMF 2.51	EASy II 4th Cert
Dassault F900, F900B, F900C, F900EX	Honeywell NZ6.1.1	Honeywell CMU MK II+	
Dassault F900 DX/EX/LX	Honeywell EPIC NZ7.1.2	Honeywell EPIC CMF 2.51	EASy II 4th Cert
Dassault F900B	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	3rd party STCs
Dassault F7X	Honeywell EPIC NZ7.1.2	Honeywell EPIC CMF 2.51	EASy II 4th Cert
Dassault F8X	Honeywell NGFMS	Honeywell EPIC CMF 3.0	EASy III 2nd Cert
Embraer E135/145 "Legacy 600/650" business jet version	Honeywell NZ6.1.1	Honeywell CMU MK III Bld 1.29	
Embraer E170/190 "Lineage 1000" business jet version	Honeywell NGFMS	Honeywell EPIC CMF 3.0	
Embraer E170/175/190/195	Honeywell NGFMS	Honeywell EPIC CMF 3.0	
Embraer E2-190/195	Honeywell NGFMS	Honeywell EPIC CMF 3.3	
Gulfstream G100	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	3rd party STCs
Gulfstream G150	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	Gulfstream STC
Gulfstream G200	Collins Proline 4 (FMC SW 4.0)	Collins CMU-1000	Gulfstream STC
Gulfstream G200	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	Gulfstream STC

Recommended software versions for NAT data link operations			
Aircraft type	**FANS software**	**ACARS software**	**Notes**
Gulfstream G200	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	3rd party STCs
Gulfstream G280	Collins Proline Fusion	DLCA-6000	Production Standard
Gulfstream GII, GIIB, GIII	Honeywell NZ6.1.1	Honeywell CMU MK III Bld 1.29	3rd party STCs
Gulfstream GII, GIIB, GIII	Universal Avionics UNS-1	Universal Avionics UniLink UL-80X SCN 30.4	3rd party STCs
Gulfstream G450	Honeywell EPIC NZ7.1.2	Honeywell EPIC CMF 2.6	(ASC 912B)
Gulfstream G550	Honeywell EPIC NZ7.1.2	Honeywell EPIC CMF 2.6	(ASC 912B)
Gulfstream GIV, GIV-SP	Honeywell NZ6.1.1	Honeywell CMU MK III Bld 1.29	
Gulfstream GV, GV-SP	Honeywell NZ6.1.1	Honeywell CMU MK III Bld 1.29	
Gulfstream G650	Honeywell NGFMS	Honeywell EPIC CMF 3.0	(ASC 902B)
Gulfstream G500	Honeywell NGFMS	Honeywell EPIC CMF 3.1	(Type Cert)
Gulfstream G600	Honeywell NGFMS	Honeywell EPIC CMF 3.1	(Type Cert)

APPENDIX E — *NAT AIR TRAFFIC MANAGEMENT OPERATIONAL CONTINGENCY PLAN - NORTH ATLANTIC REGION* (NAT DOC 006, PART I, V1.13)

(*paragraph 1.1.1, NAT SPG Conclusion 56/3, refers*)

Note: NAT Doc 006, Part I, v1.13 is related to updates to the:

- *detailed procedures for Shanwick OACC;*
- *contingency route charts for the Brest, Scottish and Shannon FIRs; and*
- *VHF contact channels for Glasgow, Edinburgh, Aberdeen, Prestwick and Belfast Aldergrove.*

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APPENDIX F — *NORTH ATLANTIC OPERATIONS AND AIRSPACE MANUAL* (NAT DOC 007, V2020-1)

(*paragraph 1.1.1, NAT SPG Conclusion 56/4, refers*)

Note: NAT Doc 007, v2020-1 includes changes to the Foreword, Definitions, paragraphs 1.5, 1.8, 1.11, 2.2, 3.2, 3.4, 4.1, 6.1, 6.8, 8.5, 10.1, 10.2, 10.3, 13.4 and 16.2 and Attachment 6, Attachment 10.

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APPENDIX G — NAT OPS BULLETIN - ACARS DATA LINK OCEANIC CLEARANCE FLIGHT CREW PROCEDURES (SERIAL NO: 2020_001)

(*paragraph 1.1.1, NAT SPG Conclusion 56/5, refers*)

NAT OPS BULLETIN

Serial Number: 2020_001[1] **Issued: Daymth2020**
Subject: DRAFT ACARS Data Link Oceanic Clearance Flight Crew Procedures **Effective: DayMth2020**
Originator: NAT SPG

The purpose of North Atlantic Operations Bulletin 2020-001 is to provide background information and guidance material for flight crews to support the use of the ACARS data link oceanic clearance procedures in the NAT supported by Gander, Reykjavik, Bodo, Shanwick and Santa Maria.

Any queries about the content of the attached document should be addressed to:

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[1] *This NAT OPS Bulletin supersedes NAT OPS Bulletins Serial Number: 2010_006, 2013_001, 2015_002, and 2015_004.*

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NAT OPERATIONS BULLETIN – ACARS DATA LINK OCEANIC CLEARANCE FLIGHT CREW PROCEDURES

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9. RCL/CLA Errors
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1. ABBREVIATIONS

ACARS	Aircraft Communications, Addressing and Reporting System
AFIS	Aerodrome Flight Information Service
AGCS	Air Ground Communications System
ATC	Air Traffic Control
CLA	Clearance Acknowledgement downlink message
CLRD	Cleared
CLRNCE	Clearance
CLX	Oceanic Clearance uplink message
F	Flight Level
FM	From
FMC	Flight Management Computer
HLA	High Level Airspace
M	Mach
MNTN	Maintain
NAT	North Atlantic
OCA	Oceanic Control Area
OCNCLX	ACARS Oceanic Clearance Uplink
OEP	Oceanic Entry Point
OTS	Organized Track System
RCL	Request for Clearance downlink message
TMI	Track Message Identifier

2. INTRODUCTION

2.1 This NAT Ops Bulletin consolidates the information pertaining to ACARS data link oceanic clearance services provide by Gander (CZQX) Reykjavik (BIRD), Bodo (ENOB), Shanwick (EGGX), and Santa Maria (LPPO), that was previously contained within individual ANSP NAT Ops Bulletins.

Note: This Bulletin does not introduce any change to previous NAT OPS Bulletins.

2.2 The ACARS Data link oceanic clearance service is provided by means of VHF and satellite to ACARS equipped aircraft via communications service providers ARINC and SITA. It should not be confused with FANS 1/A CPDLC. Operators intending to participate in the ACARS data link process are required to contact their communications service provider and indicate that they would like to receive the service.

2.3 Procedures for flights intending to receive an unsolicited clearance or that are not capable of sending a Request for Clearance (RCL) downlink message via ACARS data link entering Gander oceanic are included in Attachment A.

3. CONNECTING TO SYSTEM

3.1 Populate ACARS logon with the appropriate flight number and OCA facility.

4. REQUESTING A CLEARANCE

4.1 Enough time should be allowed to request, receive, and understand the oceanic clearance (or amended clearance) well before reaching the OEP.

Note: (Shanwick) Flights must not enter without an oceanic clearance.

4.2 Flight crews should send an RCL via ACARS. ATC cannot reply to an RCL with any message other than a CLX.

4.3 The call sign in the RCL must match the aircraft identification as contained in the ICAO flight plan or the RCL will be rejected.

4.4 The RCL must contain all the following information:

- Oceanic Entry Point (OEP)
- ETA for the OEP
- Requested Mach Number
- Requested Flight Level
- The highest acceptable Flight Level which can be attained at the OEP (via free text)
    - If higher than requested is acceptable; provide the highest acceptable altitude as MAX
        - Example: Requesting FL360 - enter free text MAX F380
    - If requested is the highest acceptable; provide the requested altitude as MAX
        - Example: Requesting FL360 - enter free text MAX F360

4.5 The RCL should be sent in accordance with the following table;

OCA		**Prior to OEP**
Gander, Shanwick, and Bodo		90-30 minutes
Santa Maria		40 minutes
Reykjavik (entering from)	Stavanger and Scottish	25 minutes
	Murmansk	30 minutes*
	Edmonton	45 minutes*
		Rule of thumb for Reykjavik 20-25 minutes

* Due to coverage limitations, aircraft equipped with Inmarsat data link won't be able to obtain an oceanic clearance via ACARS data link when north of 82°N. Aircraft equipped with Iridium and/or HF ACARS data link should be able to obtain an oceanic clearance via ACARS data link regardless of location.

Note: (Gander) Flight crews in receipt of an ACARS data link oceanic clearance from Gander OCA while in the New York OCA but subsequently routing through Gander Domestic airspace before re-entering the NAT HLA, should not modify the FMC prior to exiting the New York OCA. Modifications in accordance with the oceanic clearance should be executed while within Gander Domestic airspace.

Note: (Reykjavik) If the flight planned route does not contain a waypoint on the Reykjavik OCA boundary then the Entry Point should be the next flight plan waypoint before the Reykjavik OCA boundary. In such cases the entry point in the Oceanic Clearance (CLX) message will be a system calculated boundary crossing point and this change will be highlighted with the text "ENTRY POINT CHANGE <position>" in the ATC/ line. Exceptions to this are the waypoints EPMAN, DARUB, JULET and LT.

4.6 A significant delay or complete failure to send the RCL may result in the flight not receiving an ACARS data link oceanic clearance. The oceanic clearance will then have to be requested via voice.

Note: (Gander) Flights departing from airports less than 45 minutes flying time from the OEP should request clearance 10 minutes prior to start up.

Note: (Gander) Under some circumstances, an ACARS data link oceanic clearance may be received prior to the RCL being sent.

Note: (Reykjavik) The ACARS data link oceanic clearance is not available for flights departing from airports in Iceland, Greenland and the Faroe Islands. The oceanic clearance to those flights is delivered by the appropriate Control Tower or AFIS before departure.

Note: (Shanwick) Due to the short flying times between Scottish and Irish aerodromes and the Shanwick OCA boundary, pilots may be required to request and receive an Oceanic Clearance prior to departure. (Details contained with UK AIP)

Note: (Santa Maria) A RCL is not required for flights departing from airports in the Azores either via data-link or voice. The oceanic clearance to those flights will be provided by ATC via Santa Maria Radio, VHF or CPDLC route confirmation before leaving surveillance coverage.

4.7 The following message indicates that the RCL has been received:

OCA	RCL RECEIVED
Gander	IF NO CLEARANCE RECEIVED WITHIN 30 MINUTES OF OCEANIC ENTRY POINT REVERT TO VOICE PROCEDURES END OF MESSAGE.
Reykjavik Bodo Santa Maria	IF NO CLEARANCE WITHIN 15 MINUTES REVERT TO VOICE PROCEDURES
Shanwick	IF NO CLEARANCE WITHIN 15 MINUTES CONTACT SHANWICK BY VOICE

4.8 If the appropriate message listed above is not received within 5 minutes of sending the RCL, the flight crew should request the clearance via voice. Clearance readback must include the TMI if on the OTS.

Note: (Shanwick) A second attempt to send an RCL can be made. If an RCL is invalid or incomplete, ATC will send an advisory message with instruction.

4.9 If the call sign in the ACARS data link oceanic clearance is not correct, the clearance is not valid. The flight crew must request the oceanic clearance via voice and include the TMI in the clearance readback if on the OTS.

4.10 If the ACARS data link oceanic clearance is not received within the times listed above, the flight crew must request the oceanic clearance via voice

5. CLEARANCE DELIVERY

5.1 ACARS data link clearances contain full route coordinates. Clearances on an OTS Track also include the Track Identifier e.g. ALPHA, BRAVO etc.

5.2 Flight crews must check that the route coordinates received match the full Lat/Long coordinates loaded in the FMC. If on the OTS, also check that they agree with the current NAT track message. Query any discrepancies using voice procedures.

Note: (Gander) If an ACARS data link clearance must be confirmed by voice, contact Gander Clearance Delivery between the hours of 2330z-0730z (DST 2230z-0630z), when within 200NM of a Gander clearance delivery frequency as published in the OTS Track Message. Outside of these hours or when the flight will not pass within 200NM of a published frequency, contact the current controller

5.3 The flight level contained in the ACARS data link oceanic clearance is the "cleared oceanic flight level" for the purposes of complying with the lost communication procedures detailed in State AIPs, ICAO Doc 7030 (North Atlantic Regional Supplementary Procedures) and NAT Doc 007. ATC is responsible for providing a clearance to enable the flight to reach this flight level before reaching the OEP. If there is a concern, flight crews should contact ATC.

Caution: The flight level contained in the ACARS data link oceanic clearance IS NOT a clearance to climb. Flight crews must request ALL level changes with ATC and not change flight level upon the receipt of the oceanic clearance.

5.4 The ACARS data link oceanic clearance may include a reroute to an OEP which is different from the current cleared route and/or may specify an OEP which is different from the flight plan. In all cases,

flights should continue to operate in accordance with the current cleared route until a verbal reclearance is received from ATC.

Caution: Upon receipt of a revised oceanic clearance (i.e., one not conforming to the flight planned route), both pilots must independently verify the full latitude and longitude coordinates of "un-named" (Lat/Long) waypoints defining the route contained in the revised oceanic clearance.

5.5 If the clearance does not contain the line END OF MESSAGE (which could be on a subsequent page), it is possible that the clearance was not complete. Flight crews must verify the clearance via voice and include the TMI if on the OTS.

Note: (Shanwick) ACARS data link will not be used to issue clearances when aircraft is estimated to be within 15 minutes from the OCA boundary.

6. CLEARANCE NEGOTIATION

6.1 Upon receipt of the RCL, the controller may issue an ACARS message instructing the flight crew to contact ATC by voice to negotiate the clearance requirements with the crew.

6.2 Amendments to the ACARS data link oceanic clearance should be requested via voice. Flights equipped to send an RCL should send one before requesting the amendment via voice.

Note: (Gander) Amendments to the ACARS data link oceanic clearance should be requested by contacting Gander Clearance Delivery.

7. CLEARANCE ACKNOWLEDGEMENT

7.1 When the ACARS data link oceanic clearance is received, flights equipped to send a Clearance Acknowledgement (CLA) should do so. Flights not equipped to send a CLA must acknowledge the ACARS data link oceanic clearance via voice.

Note: (Shanwick) If no CLA is received within 10 minutes of sending the CLX, ATC will advise the crew CLEARANCE CANCELLED REVERT TO VOICE PROCEDURES.

7.2 The following message indicates that the ACARS data link oceanic clearance process is complete and that no further action is required by the flight crew to acknowledge or verify the oceanic clearance:

- *CLA RECEIVED CLEARANCE CONFIRMED END OF MESSAGE.*

7.3 If this message is not received within 5 minutes of sending the CLA, then the ACARS data link oceanic clearance must be verified via voice and include the TMI if on the OTS.

7.4 If unable to send a CLA or a CLA error message is received, the ACARS data link oceanic clearance must be verified via voice and include the TMI if on the OTS.

7.5 When verifying an ACARS data link oceanic clearance via voice the following information must be provided:

- ETA for the OEP;
- Cleared oceanic route: Track identifier (e.g. Track C) if on the OTS, or full route coordinates if on a Random;
- Cleared oceanic flight level;
- Cleared Mach number; and
- NAT TMI (e.g. TMI 157 if on the OTS)

8. ATC/ REMARKS

8.1 The ATC/ line will list which item (or items) of the clearance was changed from the previously issued clearance (or if the item is different from that requested). The terms used in the ATC/ line are explained below.

Level Change	Clearance is at a level different from that requested or previously cleared.
Mach Change	Clearance is at a speed different from that requested or previously cleared.
Entry Point Change	Clearance is via an Entry Point different from that requested, or previously cleared.
Route Change	The route contained is a change from the filed flight plan or the route in the reclearance is different from the previously issued clearance Note: If the previously issued clearance was on a NAT TRACK, the route description may change to RANDOM ROUTE, or vice versa depending on depending on the reclearance."
Route Amendment	The route in the clearance is different from the route in the flight plan.
Route Change At {Position}	Clearance is via a single route point different from that requested or previously cleared.
Route Change at Multiple Route Points	Clearance is via a route that has two or more points different from that requested or previously cleared.
Request Level Change At {Position}	Pilot should request a level change at point specified.
Unable to Approve Request	Shanwick unable to approve request for change to clearance. This Reclearance should be a copy of the previous clearance. Flight crews should check for any discrepancy or ATC/ field information.
Clearance Limit	The clearance limit in the clearance is different from the destination in the flight plan.

9. RECLEARANCES

9.1 When an ACARS data link oceanic clearance is amended, it will include the ATC/ line and the RECLEARANCE line.

9.2 The RECLEARANCE line will contain a number from 1 to 9, to identify the first and subsequent reclearances. Reclearances may not be numbered consecutively, but the latest reclearance will always have a higher number.

9.3 All reclearances must be acknowledged. The CLA should be sent for the clearance with the highest RECLEARANCE number.

9.4 If the reclearance does not contain the line END OF MESSAGE, it is possible that the clearance was incomplete. Flight crews must verify the clearance via voice and include the TMI if on the OTS.

9.5 Revert to voice if there is any doubt as to the oceanic clearance.

10. RCL/CLA ERRORS

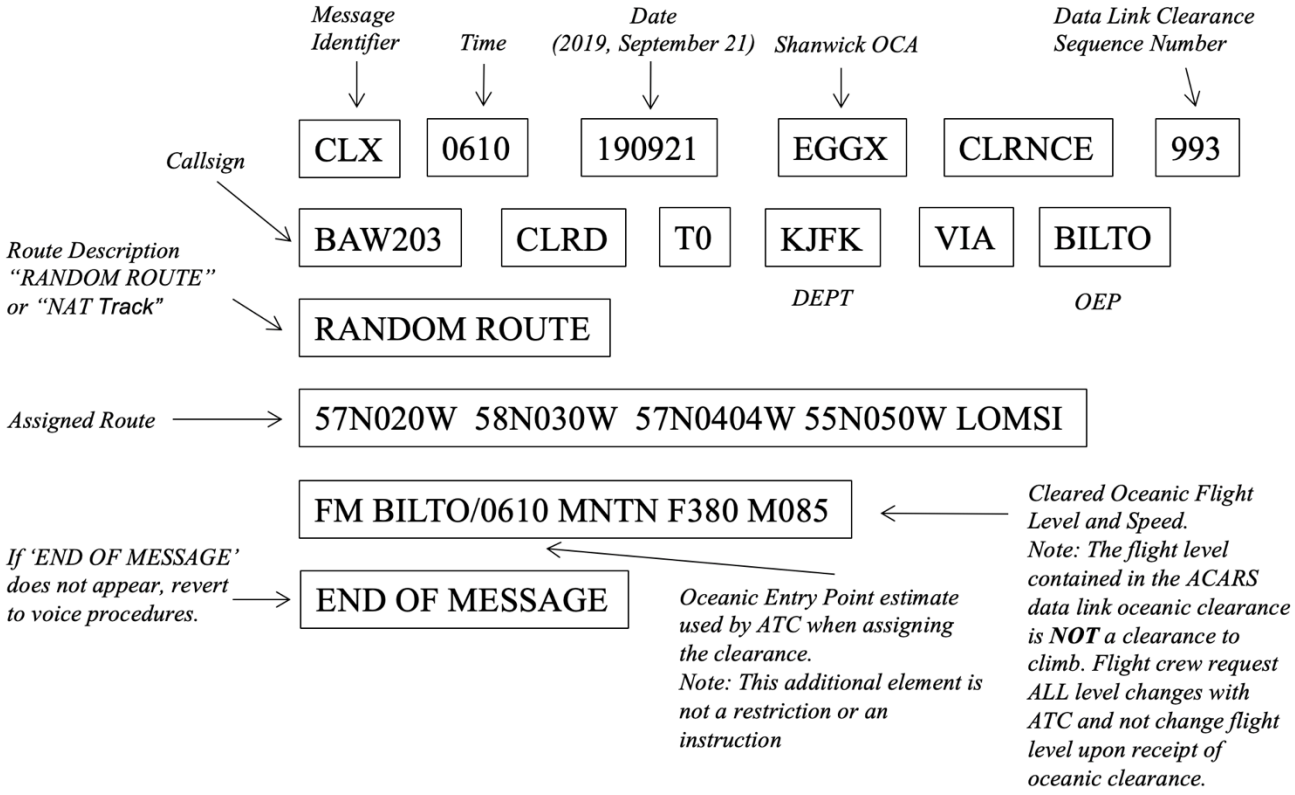
Message	Flight Crew Action
RCL REJECTED RCL SENT TOO EARLY	Check the ETA, and re-request at the correct time.
RCL REJECTED RCL RECEIVED TOO LATE REVERT TO VOICE PROCEDURES	Clearance request received less than 30 minutes prior to the boundary. Check ETA. If less than 30 minutes from the boundary, OCL cannot be used. Contact OCA by voice immediately. If more than 30 minutes from the boundary, amend ETA and resubmit RCL.
RCL REJECTED REQUEST BEING PROCESSED AWAIT TRANSACTION COMPLETION	Await clearance issued on the basis of the original RCL, then input new RCL if required.
RCL REJECTED FLIGHT PLAN NOT HELD	Check that the correct callsign was used. Amend and re-request or contact via voice
RCL REJECTED REGISTRATION DOES NOT MATCH FLIGHT PLAN REVERT TO VOICE PROCEDURES	Revert to voice
RCL REJECTED MULTIPLE FLIGHT PLAN HELD REVERT TO VOICE PROCEDURES	Revert to voice
RCL REJECTED INVALID <Callsign, Mach No, Level, OEP> RESUBMIT YOUR REQUEST	Check the identified error, amend and re-submit the RCL.
(CLA or) RCL REJECTED ERROR IN MESSAGE	An error has been detected and further datalink communication should not take place. Revert to voice
RCL REJECTED INVALID REGISTRATION REVERT TO VOICE PROCEDURES	Revert to voice
RCL REJECTED CALLSIGN ALREADY IN USE	Revert to voice

Message	Flight Crew Action
RCL REJECTED NETWORK CONGESTION REVERT TO VOICE PROCEDURES or RCL REJECTED OCL SERVICE NOT CURRENTLY AVAILABLE REVERT TO VOICE PROCEDURES or RCL (or CLA) REJECTED GROUND SYSTEM ERROR REVERT TO VOICE PROCEDURES	A network or ground system error has been detected. Revert to voice
RCL RECEIVED (OCA) CLEARANCE NOT ACKNOWLEDGED SEND DATALINK ACKNOWLEDGEMENT NOW	Clearance Acknowledgement has not been received. Acknowledge clearance by datalink now. Failure to do so will result in transaction termination.
RCL REJECTED TRANSACTION TIMEOUT REVERT TO VOICE PROCEDURES	Acknowledgement has not been received. Clearance is not valid.
RCL/CLARECEIVED NEGOTIATION REQUIRED CONTACT SHANWICK BY VOICE	Negotiation is required, or communications problems encountered. Contact Shanwick by voice immediately. Anticipate that clearance will be issued via datalink.
RCL/CLA REJECTED CLEARANCE CANCELLED REVERT TO VOICE PROCEDURES	Invalid CLA received at OCL. Transaction failed. Contact Shanwick by voice immediately. OR A Reclearance message has not been delivered. The current clearance may not be valid. Contact Shanwick by voice immediately.

11. FLIGHT CREW CHECKLIST

1	Complete ACARS logon
2	Send the RCL
3	Ensure confirmation message is received
4	If error message received, revert to voice
5	Receive ACARS data link oceanic clearance
6	Confirm call sign in clearance matches the call sign in the flight plan
7	Confirm that route coordinates match the full Lat/Long coordinates in the FMS and on the NAT Track Message (if on the OTS)
8	Send CLA
9	Ensure confirmation message is received
10	If error message received, revert to voice

12. EXAMPLE OF ACARS DATA LINK OCEANIC CLEARANCES



Example 1 – clearance on a NAT track
CLX 1259 060224 CZQX CLRNCE 026
ABC123 CLRD TO LFPG VIA NEEKO
NAT W
NEEKO 54N050W 56N040W 57N030W 57N020W PIKIL SOVED FM NEEKO/1348 MNTN F330 M082
END OF MESSAGE

Example 2 – clearance on a random route
CLX 1523 060530 CZQX CLRNCE 118
ABC456 CLRD TO EGLL VIA TUDEP
RANDOM ROUTE
TUDEP 52N050W 53N040W 53N030W 52N020W LIMRI DOLIP FM TUDEP/1632 MNTN F350 M080
END OF MESSAGE

Example 3 – reclearance from the clearance in Example 1
CLX 1325 060224 CZQX CLRNCE 097
ABC123 CLRD TO LFPG VIA NEEKO
RANDOM ROUTE
NEEKO 54N050W 55N040W 56N030W 57N020W PIKIL SOVED FM NEEKO/1430 MNTN F340 M082
ATC/ ROUTE CHANGE LEVEL CHANGE RECLEARANCE 1
END OF MESSAGE

Example 4 – reclearance from the clearance in Example 2
CLX 1558 060530 CZQX CLRNCE 135
ABC456 CLRD TO EGLL VIA TUDEP
RANDOM ROUTE
TUDEP 52N050W 53N040W 53N030W 52N020W LIMRI DOLIP FM TUDEP/1702 MNTN F350 M082
ATC/ MACH CHANGE RECLEARANCE 1 END OF MESSAGE

Example 5 – reclearance from the clearance in Example 4
CLX 1605 060530 CZQX CLRNCE 149
ABC456 CLRD TO EGLL VIA TUDEP
RANDOM ROUTE
TUDEP 52N050W 52N040W 53N030W 52N020W LIMRI DOLIP FM TUDEP/1711 MNTN F350 M082
ATC/ ROUTE CHANGE RECLEARANCE 2 END OF MESSAGE

ATTACHMENT A - GANDER ONLY – UNSOLICITED OCEANIC CLEARANCES – NO RCL

Gander provides a service specific to aircraft not equipped to send an RCL. This service needs to be set up in advance with your communication service provider and NavCanada. Aircraft registration occurs twice per month on the 1st and 15th day.

1.1 Procedures for flights intending to receive an unsolicited clearance or that are not capable of sending a Request for Clearance (RCL) downlink message via ACARS data link should include 'AGCS' in field 18 of the ICAO flight plan.

1.2 Flights not equipped to send an RCL must complete the ACARS logon and expect a clearance automatically in Gander's airspace.

1.3 Flights not equipped to send an RCL, but equipped to receive an ACARS data link oceanic clearance should:

- Include 'AGCS' in field 18 of the ICAO flight plan; and
- Expect to receive their ACARS data link oceanic clearances automatically. If the ACARS data link oceanic clearance is not received within the time limits listed above, the oceanic clearance must be requested via voice

1.4 Departures from Gander (CYQX), Goose Bay (CYYR), and St. John's (CYYT); oceanic clearance will be sent at the same time or with a departure clearance.

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APPENDIX H — CHANGES TO BE INSERTED INTO NAT OPS BULLETIN - DATA LINK PERFORMANCE IMPROVEMENT OPTIONS (SERIAL NO: 2019_003 REV 2)

(*paragraph 2.1.2, NAT SPG Conclusion 56/6, refers*)

PROBLEM / ISSUE	SOLUTIONS / ACTIONS
2. VHF to SATCOM Transitions 2.1 Transitions from using VHF to using SATCOM, especially when they occur repeatedly in a short period of time, reduce datalink performance because the ACARS protocols are generally not designed to maximize performance but rather to minimize cost by persistently attempting to use less costly VHF.	*Solution a): Disable VHF datalink just prior to entering oceanic airspace* Implement flight crew procedures to disable VHF datalink (usually by placing the VHF radio used for VHF datalink into voice mode) just prior to entering oceanic airspace or prior to leaving contiguous VHF coverage in order to proactively force SATCOM use. Conversely, enable VHF datalink when exiting oceanic airspace or entering contiguous VHF coverage. *Caution: In the event of an oceanic diversion, when SATCOM and HF data link (if installed) are lost or otherwise unavailable, flight crews will need to re-enable VHF data link to provide ACARS AOC communication with company.*
	Solution b): Implement more precise VHF region definitions In avionics that offer the capability to prefer specified subnetworks in defined geographic regions (including 777 DCMF and 787 CMF), implement more precise VHF region definitions that exclude areas of the world with only intermittent VHF subnetwork coverage in order to force SATCOM use in those areas. Such areas, in which the DLMA has observed consistent performance problems, include the North Pacific near the Aleutian Islands and the Kamchatka Peninsula, the South Pacific near New Caledonia and Vanuatu, and the North Atlantic near Bermuda and the Azores. *Caution: In the event of an oceanic diversion, when SATCOM and HF data link (if installed) are lost or otherwise unavailable flight crews will not have ACARS AOC communication with company.*
	Solution c): Implement the ARINC 618 RAT1 timer Upgrade ACARS router avionics (CMU or equivalent) software to include the new ARINC 618 RAT1 timer when it becomes available. This timer is intended to improve performance for FANS downlink messages during VHF- to-SATCOM transitions by additionally attempting to send a message via SATCOM when attempts to send it via VHF have not been successful for 60 seconds (such as when exiting land-based VHF coverage). This feature is available on some new aircraft types and will gradually become available for retrofit via software updates on existing aircraft.

APPENDIX I — NAT OPS BULLETIN ON SURVEILLANCE SERVICE IN THE NAT / FLIGHT CREW OPERATING PROCEDURES

(*paragraph 2.2.2, NAT SPG Conclusion 56/7, refers*)

NAT OPS BULLETIN

Serial Number: 2020_00x
Subject: DRAFT Surveillance Service in the NAT Region / Flight Crew Operating Procedures
Originator: NAT SPG

Issued: Daymth2020
Effective: DayMth2020

The purpose of North Atlantic Operations Bulletin 2020-00x is to provide NAT Region operators and flight crews material to be included in pilot training programs and operations manuals in preparation for operations in the North Atlantic following implementation of expanded ATS Surveillance with Space Based ADS-B.

Any queries about the content of the attached document should be addressed to:

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NAT OPERATIONS BULLETIN – SURVEILLANCE SERVICE IN THE NAT REGION / FLIGHT CREW OPERATING PROCEDURES

1. Introduction

1.1. The purpose of this North Atlantic Operations (NAT OPS) Bulletin is to provide NAT Region operators and flight crew material to be included in pilot training programs and operations manuals in preparation for operations in the North Atlantic following implementation of expanded ATS Surveillance with Space Based ADS-B.

2. General

2.1. Prior to entering the NAT Region from adjacent continental FIRs, most flights are provided air traffic control service by domestic Air Navigation Service Providers (ANSPs) using radar and/or ADS-B combined with direct controller to pilot VHF Voice communications.

2.2. These flights are, in many cases, advised that "radar service is terminated", or "surveillance service is terminated" upon transfer to the appropriate oceanic control centre. Prior to ADS-B enabled Air Traffic Service (ATS) surveillance service being available in Gander, Reykjavik, Shanwick and Santa Maria, pilots often used this phraseology as a reminder to adopt NAT Region flight crew procedures required for non- surveillance "procedural" airspace, or airspace where ATS surveillance services are not provided.

2.3. ATS surveillance services have now become more widely available in the NAT Region. The transition of aircraft (operating ADS-B and SSR equipment) across adjoining areas of radar and/or ADS-B systems coverage will not normally constitute an interruption in identification, and therefore the existing practice of announcing 'surveillance/radar services terminated' to most flights entering the NAT Region may no longer occur.

2.4. Furthermore, the termination of an ATS surveillance service by any individual ANSP no longer implies that the identification of the aircraft to the ATC system is also terminated.

3. Flight Crew Procedures

3.1. Operator and flight crew procedures for flights operating in the NAT Region can be found in ICAO Annex 2, ICAO Doc 8168, ICAO Doc 4444, ICAO Doc 7030, NAT Doc 007, NAT OPS Bulletins, and State AIPs.

3.2. Operators are reminded to evaluate their own flight crew procedures and practices to ensure they include those identified in NAT OPS Bulletin 2017_005 - *Sample Oceanic Checklist*.

3.3. Regardless of whether or not ATC issues a termination of "surveillance/radar service", when direct controller to pilot VHF Voice communication for the provision or air traffic control is no longer used, existing flight crew procedures continue to be required and remain unchanged while operating in the NAT region oceanic airspace.

4. Websites

4.1. The ICAO EUR/NAT Office Website is at: **www.icao.int/eurnat**. Click on **EUR & NAT Documents** >> **NAT Documents** to obtain NAT Operations and NAT Region Update Bulletins and related project documents.

5. Contacts

5.1. The following are the contacts for information or to provide feedback on this operations bulletin:

- UK NATS - colin.houston@nats.co.uk
- NAV CANADA - edisonj@navcanada.com
- ISAVIA - procedures@isavia.is
- NAV PORTUGAL - Jose.Cabral@nav.pt

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APPENDIX J — TERMS OF REFERENCE OF THE NAT DLM TEMPORARY ACCOMMODATION PROJECT TEAM

(*paragraphs 2.3.3 and 2.3.4, NAT SPG Conclusion 56/8, refer)*

NAT DLM Temporary Accommodation Project Team	
Project Title:	NAT DLM Temporary Accommodation PT (DLMTA PT)
Parent Group:	NAT SPG
Project Period:	30th June 2020 – 31st August 2020
Project Objective:	Develop criteria for the extension or withdrawal of the NAT DLM temporary accommodation measures.
Project Outcomes:	1. Develop criteria for the extension or withdrawal of the NAT DLM temporary accommodation measures. 2. Determine trigger actions for the extension or withdrawal of the NAT DLM temporary accommodation. (i.e. forecast traffic or actual traffic). 3. Agree any methods and monitoring protocols that may be required whilst the temporary accommodation measures are in effect. 4. Agree pre-notification timelines to ensure timely publication and notification of any extension or withdrawal of the temporary accommodation.
Membership:	Members of POG and TIG, representing States and airspace users.
Coordination Requirements:	NAT SOG, NAT IMG and their contributory bodies as appropriate.
Project High Level Tasks:	1. Establish Project Team. 2. Complete work by web conference, telephone conference, and correspondence prior to 31st August 2020. 3. Present draft documentation and conclusion to joint NAT IMG/SOG forum to allow an SPG draft decision to be formulated and discussed prior to the end of the current 3-month extension on 30th September.
Project Lead:	Luis Tojais, Portugal
Project Secretariat Support:	NAT IMG Secretariat

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APPENDIX K — UPDATES FOR *NAT AIR TRAFFIC MANAGEMENT OPERATIONAL CONTINGENCY PLAN - NORTH ATLANTIC REGION* (NAT DOC 006, PART I, V1.14) RELATED TO SCOTTISH FIR

(paragraph 4.1.2, NAT SPG Conclusion 56/11, refers)

The following changes in NAT Doc 006, Part I, Chapter 1, para 2.1 concerning the Scottish FIR will be published in NAT Doc 006, Part I, v1.14:

It is probable that the Scottish ACC will have been evacuated along with Shanwick OACC. In this event, whilst operating within the Scottish FIR, all flights are requested to make position reports on the last assigned frequency, stating position, level and next fix. ~~The following airfield frequencies may also be used:~~

~~*Airfield*~~	~~*VHF Approach Channel*~~
~~*Glasgow*~~	~~*119.100*~~
~~*Edinburgh*~~	~~*121.205*~~
~~*Aberdeen*~~	~~*119.055*~~
~~*Prestwick*~~	~~*129.450*~~
~~*Belfast Aldergrove*~~	~~*128.500*~~

APPENDIX L — UPDATES FOR *NORTH ATLANTIC OPERATIONS AND AIRSPACE MANUAL* (NAT DOC 007, V2020-2) RELATED TO OPERATION OF TRANSPONDERS AND HLA APPROVALS IN THE SHANWICK OCA SOUTH EAST CORNER

(*paragraph 4.2.2, NAT SPG Conclusion 56/12, refers*)

The following changes in NAT Doc 007 section 6.8: and Section 3.2.1. concerning operation of transponders and HLA approvals in the Shanwick OCA South East Corner will be published in NAT Doc 007, v2020-2:

For section 6.8.1 the following amendment (replace struck-out text with greyed text) will be made:

> *"All aircraft operating as IFR flights in the NAT region shall be equipped with a pressure- altitude reporting SSR transponder. Unless otherwise directed by ATC, pilots flying in NAT airspace will operate transponders continuously in Mode A/C Code 2000, except that the last assigned code will be retained for a period of 30 minutes after entry into NAT airspace or after leaving a radar service area. Pilots should note that it is important to change from the last assigned domestic code to Code 2000 since the original domestic code may not be recognised by the subsequent Domestic Radar Service on exit from the oceanic airspace. ~~Because of the limited time spent in the NAT HLA, when flying on Route Tango 9, the change from the last assigned domestic code to Code 2000 should be made Northbound 10 minutes after passing BEGAS and Southbound 10 minutes after passing LASNO".~~ However, because of the limited time spent in the NAT HLA, when flying on route Tango 9 or Tango 290 the change from the last assigned domestic code to Code 2000 should be made Northbound 10 minutes after passing BEGAS or ADVAT and Southbound 10 minutes after passing LASNO or GELPO."*

For section 3.2.1.b the following amendment (additional text in grey) will be made:

> "routes between Northern Europe and Spain/Canaries/Lisbon FIR. (T9*#, T290*#, T13, T213 and T16. State approval for NAT HLA operations is required"

LIST OF ACRONYMS

ACM	Atlantic Coordination Meeting
ADS	Automatic Dependent Surveillance
ADS-B	Automatic Dependent Surveillance – Broadcast
SB ADS-B	Space-Based Automatic Dependent Surveillance – Broadcast
ANSP	Air Navigation Service Provider
ASR	Annual Safety Report
CRE	Collision Risk Estimate
DLM	Data Link Mandate
EUR	(ICAO) European (Region)
EUR/NAT	European and North Atlantic
FIR	Flight Information Region
HMS	Height Monitoring System
HMU	Height Monitoring Unit
NAT	(ICAO) North Atlantic (Region)
NAT CMA	North Atlantic Central Monitoring Agency
NAT Doc	
NAT Doc 006, Part I	*Air Traffic Management Operational Contingency Plan – North Atlantic Region*
NAT Doc 007	*North Atlantic Operations and Airspace Manual*
NAT EFFG	North Atlantic Economic, Financial and Forecast Group
NAT HLA	NAT High Level Airspace
NAT IMG	North Atlantic Implementation Management Group
NAT MWG	North Atlantic Mathematicians Working Group
NAT POG	North Atlantic Procedures and Operations Group
NAT Project Team	
NAT ADS-B HMS PT	North Atlantic ADS-B Height Monitoring System Project Team
NAT SSC PT	North Atlantic Surveillance Service Clarification Project Team
NAT SG	North Atlantic Scrutiny Group
NAT SOG	North Atlantic Safety Oversight Group
NAT SPG	North Atlantic Systems Planning Group
NAT TIG	North Atlantic Technology and Interoperability Group
OCA	Oceanic Control Area
PfA	Proposal for Amendment
SAT	South Atlantic
SB ADS-B	Space-Based Automatic Dependent Surveillance – Broadcast
SKPI	Safety Key Performance Indicator
ToR	Terms of Reference
VHF	Very High Frequency

— END —