INTERNATIONAL CIVIL AVIATION ORGANIZATION

SUMMARY OF DISCUSSIONS AND CONCLUSIONS OF

THE FIFTIETH MEETING OF

THE NORTH ATLANTIC SYSTEMS PLANNING GROUP

Paris, 23 to 27 June 2014

PREPARED BY THE EUROPEAN AND NORTH ATLANTIC OFFICE OF ICAO JUNE 2014

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INTRODUCTION

PLACE AND DURATION

0.1 The Fiftieth Meeting of the North Atlantic Systems Planning Group (NAT SPG) was held in the European and North Atlantic (EUR/NAT) Office of ICAO from 23 to 27 June 2014.

0.2 In order to commemorate its 50th Meeting, a dedicated session was held on 23 June 2014 to review the achievements of the NAT SPG since its inception and outlook towards the future. This session was kindly hosted by the Direction Générale de l'Aviation Civile (DGAC) of France and was attended, in addition to the regular participants, by numerous distinguished guests, including Mr. Yves Lambert – former Secretary General of ICAO, Mr. Patrick Gandil – Director General of the DGAC France, former ICAO Regional Directors and former Chairmen of the NAT SPG. Special video addresses had been delivered by the ICAO Secretary General Mr. Raymond Benjamin and Director of the ANB Mrs, Nancy Graham. Mr. Farid Zizi – President of the ICAO Air Navigation Commission (ANC) had sent his address that was delivered by Mr. Luis Fonseca de Almeida, ICAO Regional Director, Europe and North Atlantic. A congratulation letter from Mr Phil Roberts – Chairman of the European Air Navigation Planning Group (EANPG) was presented to the Meeting by Mr Ásgeir Pálsson – Chairman of the NAT SPG.

0.3 The remaining parts of the agenda were dealt with in the premises of the European and North Atlantic (EUR/NAT) Office of ICAO on 24 to 27 June 2014.

OFFICERS AND SECRETARIAT

0.4 The Meeting was chaired by Mr Ásgeir Pálsson, the Representative from Iceland. Mr Luis Fonseca de Almeida, ICAO Regional Director, Europe and North Atlantic, was the Secretary of the Meeting and he was assisted by Mr George Firican, Deputy Regional Director / Technical Team Leader and Messrs Celso Do Couto Figueiredo, Sven Halle, Elkhan Nahmadov, Nicolas Rallo, Rodolphe Salomon, Regional Officers from the same Office; additional assistance was provided by Mrs Patricia Caviston, Mrs Nikki Goldschmid and Ms Isabelle Hofstetter from the EUR/NAT Office of ICAO.

ATTENDANCE

0.5 The Meeting was attended by 29 participants from 9 States and 4 international organisations. In addition to the Representatives of the NAT SPG member States, representatives from the International Air Transport Association (IATA), the International Business Aviation Council (IBAC), the International Federation of Air Line Pilots Associations (IFALPA) and Inmarsat attended the meeting. The International Federation of Air Traffic Controllers' Associations (IFATCA) did not attend. Lists of participants and contacts are at **Appendix A**.

AGENDA

0.6 The NAT SPG agreed to the following agenda for organising the work of the Meeting and the structure of the report:

Agenda Item 1: NAT SPG/50 Celebrations - 50 years of History and the Future Outlook

Agenda Item 2: Review of significant international aviation developments

Agenda Item 3: Proposed air navigation systems performance monitoring and measurement

Agenda Item 4: NAT planning and implementation management issues

4.1 Implementation programme updates

4.2 Performance monitoring

Agenda Item 5: NAT operational and safety improvements

Agenda Item 6: Safety Monitoring

Agenda Item 7: NAT Documentation

Agenda Item 8: Work programme, including sub-groups

Agenda Item 9: Any Other Business

1. REVIEW OF SIGNIFICANT INTERNATIONAL AVIATION DEVELOPMENTS

1.1 ICAO UPDATE

1.1.1 The NAT SPG was informed about recent significant international aviation developments and took note of the amendments to a number of ICAO Annexes and Procedures for Air Navigation Services (PANS) that had been adopted since NAT SPG/49. The meeting was also informed about the proposed amendments to ICAO Annexes and PANS Documents (Annexes 10, 14, 18, PANS-ATM and PANS-Aerodromes). A number of ICAO State Letters and ICAO Documents on a wide range of subjects had also been published since the last meeting.

1.1.2 The NAT SPG noted the approvals of the Proposals for Amendment (PfA) to the NAT Regional Supplementary Procedures (SUPPs, Doc 7030/5) related to the application of 50 nautical mile (NM) longitudinal, 30 NM longitudinal and 30 NM lateral separation in New York Oceanic Flight Information Region (FIR) (Serial No.: EUR/NAT-S 13/29-NAT), transition of NAT Minimum Navigation Performance Specifications (MNPS) to Performance-Based Navigation (PBN) on 1 January 2015 (Serial No.: EUR/NAT-S 13/33-NAT 4) and Automatic Dependent Surveillance - Broadcast (ADS-B) (Serial No.: EUR/NAT-S 13/42 - NAT 5-3).

1.2 ALIGNMENT OF ANPS WITH 4TH EDITION OF GANP

1.2.1 The NAT SPG noted the progress report on the actions that were undertaken in follow-up to Recommendation 6/1 [*Regional performance framework – planning methodologies and tools*] of the 12th Air Navigation Conference (AN-Conf/12) regarding the alignment of regional air navigation plans (ANPs) with the Fourth Edition of the *Global Air Navigation Plan* (GANP) and the work that had been carried out by the ICAO Secretariat working group on the electronic Air Navigation Plan (eANP-WG). It was noted that final drafts of the three Volumes of the ANP had been completed and endorsed by the Air Navigation Commission (ANC) and approved by the Council on 18th of June 2014.

1.2.2 The NAT SPG noted that following the Council approval of the ANP template, the respective Planning Implementation Regional Groups (PIRGs) would be involved in the further development of the respective regional eANP. In this respect, the NAT SPG recalled that the *NAT Service Development Roadmap Document* (NAT Doc 009) was already providing a mapping of the GANP versus the NAT planning and implementation activities and that this document could meet the intent of Volume III.

1.2.3 In this respect, the NAT SPG agreed to the following:

NAT SPG Conclusion 50/01 – Development and Endorsement of the NAT eANP

That, in support of ICAO efforts to align the regional Air Navigation Plans (ANP) with the Fourth Edition of the *Global Air Navigation Plan* (GANP) (Doc 9750):

a) the development of the NAT eANP based on the Council-approved ANP Template, be included in the work programme of the different NAT SPG contributory bodies; and

b) the relevant Parts of the NAT eANP be presented to NAT SPG/51 for endorsement.

1.3 REVISION OF THE REGIONAL SUPPLEMENTARY PROCEDURES (DOC 7030)

1.3.1 The NAT SPG was informed on the progress made by the Secretariat to implement the Recommendation 6/11 — *Alignment of air navigation plans and regional supplementary procedures*, formulated by AN-Conf/12, to align the areas of applicability of the SUPPs (Doc 7030) with those of the ANP in order to simplify the procedures for regional performance framework management for the PIRGs and also support more efficient planning and implementation of the aviation system block upgrades (ASBUs).

1.3.2 The NAT SPG noted the following table providing updated information related to the status of approval of amendments to ANPs:

ANP Interface	FIR	Status
AFI-EUR	Canarias and Casablanca	Approved by the Council
	Algeria and Tunisia	Pending approval by the Council
AFI-ASIA/PAC-EUR-MID	Tripoli and Khartoum	Approved by the Council
	Cairo	Approved by the Council
ASIA/PAC-NAM	Anchorage Arctic and Anchorage Continental	Pending
EUR-NAT	Bodo Oceanic	Approved by the Council
ASIA/PAC-CAR/SAM	Eastern Island	Approved by the Council

1.3.3 In this regard, Norway informed the NAT SPG that with respect to the area of undetermined responsibility existing between Norway and the Russian Federation, a proposal had been sent to the Russian Federation about 12 months ago to regularise the existing situation, however, no feedback was received. The NAT SPG noted that despite the current status, there was no impact on operations and all issues had been dealt with through bilateral coordination at the operational level.

1.4 PIRGS ACTIVITIES IN OTHER REGIONS

1.4.1 The NAT SPG was presented with an update on the activities of the PIRGs in other regions and a summary of the corresponding meeting reports' review by the ANC up to March 2014.

1.5 RASG-EUR OUTCOME

1.5.1 The NATSPG was provided with an update on the activities undertaken since NAT SPG49 under the framework of the European Regional Aviation Safety Group (RASG-EUR) and its contributory groups, in particular the ICAO EUR Regional Expert Safety Team (IE-REST) and the four IE-REST ad-hoc groups.

1.5.2 The NAT SPG noted the main outcomes of the RASG-EUR/03, and in particular:

i) the endorsement of eight Safety Enhancement Initiatives (SEIs), along with associated Detailed Implementation Plans (DIPs) and Outputs, to be launched in the IE-REST area (part of the ICAO EUR Region composed of non-EASA Member States);

ii) the priority safety targets and associated metrics adopted by the RASG-EUR for the ICAO EUR Region; and

iii) the creation of the RCOG reporting (R-REP) ad-hoc group to work on issues related to the development of annual safety reports for the ICAO EUR Region.

1.5.3 The NAT SPG was informed that the R-REP had already met once and had started developing a template for the RASG-EUR annual safety report.

1.6 REVIEW BY THE AIR NAVIGATION COMMISSION OF THE NAT SPG/49 REPORT

1.6.1 The Secretariat presented the NAT SPG with the actions taken by the ANC on the NAT SPG/49 Report. The NAT SPG recalled that following each PIRG meeting, the report was first reviewed by the Working Group for Strategic Review and Planning (WG/SRP) of the ANC followed by the ANC itself. In the case of the NATSPG/49 Report, as there were no specific items that required action by the Council, the report was not submitted to the Council.

1.6.2 The NAT SPG noted the ANC discussion with respect to Conclusions 49/03, 05 and 06 and the queries regarding the interest in required communication performance (RCP) and required surveillance performance (RSP), while not addressing other significant criteria needed to reduce separation. The NAT SPG felt that the NAT plans for reductions in separation were in fact comprehensively addressing all associated criteria and expressed its readiness to provide any additional clarifications, if required.

1.6.3 The NAT SPG noted the ANC's discussion regarding the progress of work in the Separation and Airspace Safety Panel (SASP) and parallel trial activities in the NAT Region. The NAT SPG concurred with the ANC that in order to standardize proposed separation minima, the aim should be to develop an amendment to PANS-ATM for global application rather than a SUPPs amendment. At the same time, the ANC also suggested that events may however dictate that the SUPPs would be published first. The NAT SPG agreed with the view that global harmonization was the prime objective. However, it was highlighted that the objective of the global harmonization should not hinder the progress of regional developments. The NAT Region had pioneered several regional initiatives that later had become global provisions. Reasonable balance between the need for global harmonization and flexibility to permit regional developments as a catalyst for future global development should be allowed.

1.6.4 The NAT SPG noted the ANC concern that inadequate consultation amongst all stakeholders had or would take place with respect to the GNSS lateral separation trial (Conclusion 49/04 refers). In this respect, the NAT SPG emphasized that all necessary consultation took place and expressed its readiness to provide further clarification, if required.

1.6.5 Finally, the NAT SPG noted with appreciation the ANC's assessment regarding the quality of the NAT SPG report and the scope of the work undertaken, which at times was breaking new grounds.

1.7 STATUS OF NAT SPG/49 CONCLUSIONS

1.7.1 The ICAO Secretariat presented the NAT SPG with information on the status of the NAT SPG/49 agreed Conclusions. The NAT SPG noted that 25 of the 27 NAT SPG/49 Conclusions had been closed and the remaining 2 were on the Agenda of the current meeting.

2. PROPOSED AIR NAVIGATION SYSTEMS PERFORMANCE MONITORING AND MEASUREMENT

2.1 KEY PERFORMANCE INDICATORS COMMON TO NAT EFG AND NAT IMG

2.1.1 The NAT SPG recalled that it tasked the NAT Economic and Financial Group (NAT EFG) and NAT Implementation Management Group (NAT IMG) (NAT SPG Conclusion 49/24 refers), to review their respective lists of Key Performance Indicators (KPIs), and identify those of common interest.

2.1.2 The NAT SPG noted that NAT EFG/25 reviewed an update on the NAT Fee Analysis Model (NATFAM) developed by the United States, and agreed that the "*Cost per 100km flown*" and the "*Cost per oceanic flight hour*" provided by NATFAM were the only KPIs that were of common interest between the NAT EFG and the NAT IMG (*NAT EFG/25 Summary of Discussions,* paragraph 5.12 refers). The names of

the KPIs being self-explanatory the NAT EFG agreed these KPIs did not need to be further described. At its forty-fourth meeting, the NAT IMG concurred with the NAT EFG on all points (*NAT IMG/44 Summary of Discussions*, paragraph 5.6 refers).

2.1.3 The NAT SPG therefore accepted that the aforementioned KPIs were of common interest between the NAT EFG and the NAT IMG, but asked the NAT EFG to further describe what was really understood under the term "cost", and whether the costs covered air traffic control (ATC), communications and meteorological aspects and to which extents.

3. NAT PLANNING AND IMPLEMENTATION MANAGEMENT ISSUES

3.1 IMPLEMENTATION PROGRAMME UPDATES

Performance Based Communication and Surveillance Implementation Plan

3.1.1 The NAT SPG was provided with updates to the NAT Performance Based Communication and Surveillance (PBCS) implementation plan. It was noted that in order to simplify the progress tracking, the updated version had merged into a single document two previously separately maintained documents, i.e. the NAT PBCS plan and the status report.

3.1.2 The NAT SPG also noted that the NAT PBCS plan was linked to the planned NAT operational implementations of 5 minutes reduced longitudinal separation minimum (RLongSM) and 25 NM reduced lateral separation minimum (RLatSM) per the original terms of reference (NAT SPG Conclusion 44/11 refers). In this regard, the NAT SPG recalled its Conclusion 49/05 that provided further clarification on the role of PBCS in support of RLongSM and RLatSM, as well guidance on determination of compliance and actions in case of non-compliance.

3.1.3 The NAT SPG noted the list of remaining tasks of the PBCS plan as follows:

a) Task 4 – conduct additional workshops specifically on operational approvals/authorisations when Task 16 would be completed;

b) Task 9 – identify flight plan (FPL) requirements prior to operational implementations, either through Doc 4444 or, if required, Doc 7030;

c) Task 10 – continue work on appropriate SUPPs proposals for amendment (PfAs) for operational implementations supported with associated PBCS requirements;

d) Task 12 – implement ATC automation changes following the PBCS FPL descriptors related provisions approval and prior to operational implementation;

e) Task 16 – State regulations and guidance material. Develop PBCS operational approvals/authorisations material prior to operational implementation; and

f) Task 17 – future of DLMA. Ensure that the NAT DLMA would continue to function in line with the approved Terms of Reference (ToR).

3.1.4 In reviewing the list, the NAT SPG noted that there were some dependencies on the activities undertaken at the global level. In this regard, the NAT SPG recalled the desire for a performance based approach and avoidance of overly prescriptive language of the PBCS plan. In view of the foregoing discussion, the NAT SPG agreed to the following:

NAT SPG Conclusion 50/02 – NAT PBCS Implementation Plan v.2014_1

That:

a) the ICAO Regional Director, Europe and North Atlantic, take appropriate actions to publish the updated NAT Performance Based Communication and Surveillance (PBCS) Implementation Plan v 2014-1 as provided at **Appendix B** to the NAT SPG/50 Report;

b) That the NAT IMG monitor the global developments, update the NAT PBCS plan as appropriate in the spirit of performance based philosophy and report to NAT SPG/51.

NAT Region Data Link Mandate Phase 2

3.1.5 The NAT SPG was provided with the status of work leading to the implementation of NAT Data Link Mandate (DLM) Phase 2A on 5 February 2015. It was recalled that the NAT DLM Phase 2A was planned to be implemented for flights on all Organized Track System (OTS) tracks between flight levels 350-390 (inclusive) on 5 February 2015 with limited exceptions. The exceptions were specified in the NAT DLM Phase 2 Aeronautical Information Circulars (AIC) published by the NAT air navigation service providers (ANSPs).

3.1.6 The NAT SPG noted the following summary of the major tasks listed under NAT DLM Task P2A-7 (Assess readiness for 5 Feb 2015 implementation) and their status:

a) Task 7.1 **(Review ANSP plans, policies and system readiness for Phase 2A).** The NAT Air Traffic Management Group (NAT ATMG/43) meeting categorized Gander, Shanwick, Santa Maria and Reykjavik oceanic control areas (OCAs) as capable of implementing NAT DLM Phase 2A and categorized this task as **COMPLETE**;

b) Task 7.2 **(NAT Document Update).** NAT ATMG/43 and NAT Safety Analysis and Reduced Separation Implementation Group (NAT SARSIG/19) categorized this task as **COMPLETE;**

c) Task 7.3 **(Operator/aircraft issues).** NAT ATMG/43 and NAT SARSIG/19 did not identify any outstanding operator/aircraft issues for the NAT DLM Phase 2A implementation and categorized this task as **COMPLETE;**

d) Task 7.4 **(NAT fleet status: FANS 1/A data link equipage and use).** NAT ATMG/43 and NAT SARSIG/19 noted that data link equipage and use was tracked by the NAT Communications, Navigation and Surveillance Group (NAT CNSG). (Paragraph 3.2.3 further refers); and

e) Task 7.5 **(Safety Aspects of DLM Implementation (NAT SPG Conclusion 49/18).** (Paragraph 3.1.8 below further refers).

3.1.7 The NAT SPG also noted that the following automatic dependent surveillance-contract (ADS-C) functionality had been confirmed to be available for the OCAs where NAT DLM Phase 2A was scheduled to be implemented (i.e., Gander, Shanwick, Reykjavik and Santa Maria). With the exception of items f) and g), these functionalities were also planned to be available in Bodø OCA on 29 May 2014:

a) Conformance monitoring to alert controllers when reports do not match the current clearance;

b) ADS-C periodic contracts;

c) Lateral deviation event (LDE) with a lateral deviation threshold of 5 NM or less;

d) Level range deviation event (LRDE) with a vertical deviation threshold of 300 ft or less;

e) Waypoint change event (WCE) contracts;

f) Flight data processing system (FDPS) and human-machine interface (HMI) to alert controllers when aircraft are not equipped to operate on DLM tracks and flight levels (not applicable to Bodo OCA); and

g) FDPS and HMI to identify designated DLM tracks and FLs (not applicable to Bodø OCA).

3.1.8 With regard to the NAT DLM Phase 2A, Tasks 5.2 and 7.5, the NAT SPG noted that the individual effect of the NAT DLM, Air Traffic Services Interfacility Data Communications (AIDC) and enhanced automation was projected to be significant, with the combined effects holding the potential to reduce vertical operational collision risk toward vertical Target Level of Safety (TLS) levels. More specifically, the NAT SPG noted the positive estimated effect in reducing time at incorrect flight levels projected by the uniform application of the DLM in NAT Minimum Navigation Performance Specification (MNPS) Airspace. In this regard, the NAT SPG noted that further actions were undertaken by the NAT Safety Oversight Group (NAT SOG) in connection with NAT SPG Conclusion 49/18 – *Safety Aspects of DLM Implementation*.

3.1.9 Furthermore, the NAT SPG noted that the following NAT DLM Phase 2A tasks were in progress or were scheduled:

a) Task 2.7 (**Aircraft types without retrofit packages**). The United States continued to track the availability of retrofit packages for aircraft types for which packages were previously reported unavailable.

Note - A Supplemental Type Certificate solution had become available for a legacy commercial aircraft type that was the most frequently seen aircraft type without a retrofit package. Retrofit packages were available or in development for the most frequently seen business jet aircraft operating between flight levels 350-390 in MNPS airspace.

b) Task 3.3 (**NAT Operations Bulletin for NAT DLM Phase 2**). The United States would coordinate with the ICAO EUR/NAT Office staff to discuss publication of the NAT ANSP AIC information on NAT DLM Phase 2 in a NAT Ops Bulletin format.

c) Task 3.5 (**Update DLM Phase 2 AICs with current depiction of air traffic services (ATS) surveillance airspace**). The United States would coordinate with the NAT ATMG to address the update of the AICs with the 2014 depiction of ATS surveillance airspace at NAT ATMG/44 (September 2014).

d) Task 4.1 (**EUR/NAT DLM Airspace Interface**). The United Kingdom and Portugal had started coordination with European ANSPs and were scheduled to report to NAT ATMG/44 (8-12 September 2014).

Alignment of Work Programmes to support Future Implementations

3.1.10 The NAT SPG was presented with a proposal to respond to the NAT SPG Conclusion 49/25 [Explore ideas to expedite current work processes]. The NAT SPG recalled that the NAT SPG/45 (June 2009) agreed to make adjustments to its working structure and to the terms of reference of its contributory bodies to accommodate the change in emphasis to performance based requirements, as driven by the *Global Air Navigation Plan* (GANP, Doc 9750), and to take account of the *Global Aviation Safety Plan* (GASP). NAT SPG/45 also approved a high level safety policy detailing its safety management focus.

3.1.11 The NAT SPG also recalled that the NAT SPG/45 elaborated basic principles when it revised its working structure. At that time, it was agreed that the work of the NAT SPG would be centered

on three main areas: safety oversight, planning and implementation, and financial considerations. The proposal, in line with the recent NAT SPG agreement that ideas to improve the efficiency of the working structure should be explored (NAT SPG Conclusion 49/25 – *Explore ideas to expedite current work processes*) had the goal to evolve and streamline the working structure of the NAT SPG so as to focus its efforts in these three core areas. It also sought to foster stakeholder participation, effective use of resources, retention and expansion of expertise so as to achieve the improvements foreseen in the *NAT Service Development Roadmap* (NAT Doc 009).

3.1.12 Furthermore, the NAT SPG noted that at its most recent meeting, the NAT EFG highlighted that most of its economic assessments relied on frequently updated traffic forecasts compiled by its members' organizations, which could easily be made available to the NAT SPG working structure to supplement the NAT official traffic forecast currently updated every two years. The NAT SPG agreed to amend the NAT EFG terms of reference to include provision of traffic forecasts for the ICAO NAT Region (paragraph 6.11.2 and NAT SPG Conclusion 50/19 refer). Concurrently, NAT SPG agreed that it would be beneficial to assess whether advances in statistical methods and data gathering and sharing had overcome a requirement for the NAT SPG to maintain a NAT-specific traffic forecasting function. Therefore the NAT SPG agreed to the following:

NAT SPG Conclusion 50/03 – Confirm Requirement to Maintain the NAT TFG

That the NAT SPG contributory bodies:

a) determine whether they require the inputs of the NAT Traffic Forecasting Group in order to support their and the NAT SPG's work programmes; and

b) provide recommendations to NAT SPG/51.

3.1.13 The NAT SPG considered the proposal for restructuring of its working arrangements and agreed that more time would be required to assess it in details, together with the direct involvement in this assessment of the contributory bodies reporting directly to the NAT SPG (NAT EFG, NAT IMG and NAT SOG). The outcome coming from the three contributory bodies would be used as an input to a dedicated two day Symposium, to be organized early 2015.

3.1.14 In this respect, the NAT SPG agreed with the following roadmap:

a) The NAT SPG50 WP28 be submitted to the attention of the Fall sessions of the NAT EFG (24-26 September), NAT IMG (4-7 November 2014) and NAT SOG (1-5 December 2014) for assessment and contributions;

b) The NAT SPG50 WP28 together with the contributions from the three Groups would be consolidated by the Secretariat to produce input to a special Symposium;

c) A two day Symposium would be organized early 2015 (23 to 24 February 2015), to be held in Paris at the EUR/NAT Office of ICAO;

d) The outcome of the Symposium would be presented to the Spring sessions of the NAT EFG (28-30 April 2015), NAT IMG (11 to 14 May 2015) and NAT SOG (1 to 5 June 2015) for final assessment and contributions;

e) The outcome of the Symposium together with the contributions from the NAT EFG, the NAT IMG and the NAT SOG would be presented to the NAT SPG/51 (June 2015). To facilitate the discussions and reach a consensus, the NAT SPG/51 would be organized as a five day meeting, starting on Monday 22 June. The first day of the meeting would address solely the restructuring of its working arrangements.

NAT SPG Conclusion 50/04 – Review of NAT SPG Working Structure

That the NAT SPG/51 review its working structure, following the approach developed in 3.1.14 above.

Volcanic Ash Exercises Steering Group

3.1.15 In light of the proposed changes to the Volcanic Ash Contingency Plan (VACP), the NAT SPG discussed the role of the EUR/NAT Volcanic Ash Exercises Steering Group (VOLCEX/SG) and agreed that the questions posed in WP29, paragraph 2.6 would be considered by the NAT IMG and NAT SOG. The advantages of continuing such exercises included following:

a) Stakeholders preparedness and coordination;

b) Learning the behavior of airlines and regulators regarding SRA approach (State intentions and mutual recognition);

c) Learning the behavior of Air Navigation Service Providers (ANSP) with regards to relaxing of airspace and re-route orientation; and

d) Testing ATM measures based on the above.

3.1.16 In terms of membership, the NAT SPG agreed the present group could continue to perform the tasks in the terms of reference and could include airports which could test how they manage diversions. One exercise per year would be organized with a rotation from NW (e.g. simulated eruption in Iceland), SW (e.g. simulated eruption in Spain or Portugal), and SE (simulated eruption in Italy). Exercises would be conducted by an Exercise Leader (State) with support from Eurocontrol determined at the planning meetings.

Volcanic Ash Exercises

3.1.17 The NAT SPG was briefed on exercises conducted in the EUR/NAT Regions in the past year which included two exercises west of the Ural Mountains and one east of the Ural Mountains. The NAT SPG noted a brief account of these exercises as provided below. More information can be found in the respective reports at the following website http://www.paris.icao.int/Met/index.htm.

VOLCEX13/02 – Furnas, Portugal 23 Oct 2013 0730 – 1730 UTC

a) Dissemination of special air-reports on volcanic ash still needs improvement – improved guidance in exercise directive needed
b) Continue developing harmonized SRA methodology approach and monitor European Aviation Crisis Coordination Cell (EACCC) collation of SRA approach (State intentions and mutual recognition)

VOLCEX14/01 – Stromboli, Italy 1-2 April 2014 0800 – 1600 UTC

3.1.18 The following improvements were recommended:

a) Exercise ANSPs' response in terms of airspace relaxation and route orientation to changed flight plan requests
b) Provide guidance in the Exercise Directive for the dissemination of special air-reports on volcanic ash in accordance to Annex 3 as required and Doc 9766 as recommended as well as include guidance provided by the working group led by Eurocontrol (ATFCM Operations & Development Sub-Group/31) in relation to receipt of such reports at the NOP portal
c) Based on exercise objectives, coordinate with participants well in advance of the exercise via State letter, EACCC State focal points, and preparation teleconferences and possibly additional workshops to explain participants' roles and expectations in exercises in order to meet objectives
d) Consider providing NOTAM that indicates a significant change in status of volcanic activity (e.g. increased volcanic activity (eruption imminent), start of eruption, significant changes in the volcanic ash activity – colour code changes in VONA, and end of eruption for the FIR where the volcano is located) and reference SIGMET information (mainly for tactical decision making) and volcanic ash products provided by the VAACs (mainly for planning purposes)

VOLKAM14 – Bezymianny, Kamchatka, Russian Federation 4-5 March 2014 2100 – 0400 UTC

a) Successfully utilized contingency re-route and associated procedures as per the Exercise Letter of Agreement (LOA) between Petropavlovsk-Kamchatsky and Fukuoka FIRs; Recommend a permanent LOA between Petropavlovsk-Kamchatsky and Fukuoka for handling cross border flights (including contingencies)
b) Special air-reports on volcanic ash were successfully sent from ACC (received by email from dispatch) to VAAC Tokyo by AFTN and email and from ACC to MWO to SADIS via AFTN with the correct bulletin header
c) Volcanic ash advisory centre handover from Tokyo to Anchorage was successful, but will improve acknowledgement of handover in the future
d) VAAC Tokyo will consider issuance of Volcanic Ash Advisory (VAA) and corresponding graphic (VAG) every 3 hours (versus 6 hours), when necessary, which would assist airlines in their re-routes by not overcompensating for the forecast of volcanic ash
e) Recommend formalizing procedure generating/adjusting Pacific Organized Track System (PACOTS) in case of contingencies
f) Develop document containing procedures for volcanic ash events that impact trans-east routes, northern Pacific (NOPAC) routes and PACOTS that contains contact information for a real eruption as well as re-route procedures, sequence of events to be conducted by stakeholders, teleconference procedures, and examples of volcano observation notification for aviation (VONA), volcanic ash advisories (VAA) and corresponding graphic (VAG), SIGMET, NOTAM and special air-report on volcanic ash – to be reviewed at the EUR (EAST) VOLCEX/SG/5 meeting in Petropavlovsk-Kamchatsky, Russian Federation from 5-7 August 2014.

Space Weather

3.1.19 The NAT SPG was provided with information on Space Weather Information Services, necessary for the safe operations of various CNS systems. The information provided was a Draft Concept of Operations for Space Weather Information Services developed by the International Airways Volcano Watch Operations group (IAVWOPSG) intended to be a guiding document that would evolve as the science and technology improve and operational requirements would be consequently developed. As the number of flights utilizing cross-polar and trans-polar routes would continue to grow, the demand for space weather information would grow as phenomenon such as solar radiation storms may pose a hazard to communications and navigation systems as well as pose a health risk to flight crew members and passengers due to radiation. The NAT SPG noted that ASBU module B1-AMET concerning enhanced operational decisions through integrated meteorological information acknowledged the needs for space weather information services. The NAT SPG also noted that introducing provisions in Amendment 77 to Annex 3 (November 2016) related to space weather were planned to be considered at the Meteorology Divisional Meeting in July 2014.

3.2 PERFORMANCE MONITORING

NAT Data Link Performance Report

3.2.1 The NAT SPG was provided with the NAT data link performance report for the period from 1 July 2013 to 31 December 2013. It was noted that the report was produced in collaboration between the NAT service providers, NAT DLMA and NAT IMG contributory groups, using the agreed reporting form and grouped by the following areas:

a) Performance by media type;

b) Performance by remote ground station (RGS)/ ground earth station (GES);

c) Automatic dependent surveillance-contract (ADS-C) message type;

d) Uplink message elements;

e) Communications service provider (CSP)/network;

f) Performance by operator/aircraft type.

3.2.2 The NAT SPG noted the following conclusions of the report:

a) The 95% criteria of the required surveillance performance (RSP) 180 and required communication performance (RCP) 240 over satellite communications (SATCOM) and very high frequency (VHF) media were met;

b) Neither the 95% nor the 99.9% criteria for RSP400 were met for high frequency (HF);

c) The RSP180 and RCP240 met the targeted 99.0% level;

d) The SATCOM traffic represented approximately 80% of the controller pilot data link communications (CPDLC) sample and 71% of the ADS-C; and

e) Mixed media mode types represented about 2.2% of the total.

3.2.3 The NAT SPG also noted sttatistical data on the ADS-C and CPDLC usage levels as recorded by the NAT service providers that indicated steady growth in the usage since the previuous meeting (paragraph 3.1.6-d) also refers).

Oceanic Control Area (OCA)	As of Mar. 2014
Gander	84-85% sent ADS-C report (20% increase over Jan 2013)
Reykjavik flights at/above FL 280, flights to/from Greenland, Iceland & Faroe Islands filtered out	81% filing FANS 1/A equipage
Santa Maria	72% using data link (11% increase over Jan 2013)
Shanwick	78% using data link (12% increase over Jan 2013)

3.2.4 Based on the information provided (**Appendix C**, **Appendix D**, **Appendix E**, **Appendix F**, **Appendix G**, and **Appendix H** refer), the NAT SPG noted that the NAT data link performance in 2013 met the requirements as established by NAT SPG Conclusion 48/07 and 49/05 on applicability of required communication performance (RCP) 240 and required surveillance performance (RSP) 180 to 25 NM lateral separation minimum (RLatSM) and 5 min longitudinal separation minimum (RlongSM) implementations.

3.2.5 The NAT SPG also noted that, in line with Conclusion 49/05, work was undertaken in several directions to determine actions that could further improve performance.

3.2.6 Based on the above, the NAT SPG endorsed the following:

NAT SPG Conclusion 50/05 – NAT Data Link Performance Report 2013

That,

a) the 2013 NAT data link performance report as provided at Appendices **C**, **D**, **E**, **F**, **G** and **H** be noted; and

b) the ICAO Regional Director, Europe and North Atlantic, take appropriate actions to publish the 2013 NAT data link performance report.

4. NAT OPERATIONAL AND SAFETY IMPROVEMENTS

4.1 ACAS II CLARIFICATION

4.1.1 The NAT SPG received an update on the effort to clarify the ICAO NAT Region Policy for equipage and operation of Aircraft Collision Avoidance System (ACAS II), subsequent to NAT IMG Decision 44/9 that tasked the United States to coordinate with NAT stakeholders to develop a proposal for amendment of the NAT SUPPs, if required, and submit a proposal or update to NAT SPG/50. The NAT SPG recalled that this stemmed from a sentence in NAT Doc 007 paragraph 17.6.30, mentioning the possibility that MEL relief could be provided for inoperative ACAS/TCAS, which appeared to contradict the provisions set in the NAT SUPPs (Doc 7030) paragraph 5.3.1.1, that "*ACAS II shall be carried and* operated *in the NAT Region by all turbine-engined aeroplanes having a maximum certificated take-off mass exceeding 5 700 kg or authorized to carry more than 19 passengers*.".

4.1.2 The NAT SPG noted the progress in the work performed by the United States and expressed the support that this should be carried on until a consensual course of action, as regards the clarification of the NAT regional policy for ACAS II carriage and operation, would be proposed to NAT IMG/45 for endorsement (paragraph 6.12.1 also refers).

4.2 SPLIT WESTBOUND OTS PROCEDURE

4.2.1 The NAT SPG noted that the NAT IMG recalled that the NAT SARSIG, at its fifteenth meeting, reviewed a proposal from Canada and the United Kingdom, to accommodate opposite direction flows of traffic in situations where the OTS would be split. The work continued since this first proposal

within the framework of various NAT IMG contributory bodies and a report was presented to NAT SARSIG/17 in April 2013, and the NAT ATMG and the NAT MWG had been informed about the progress of this issue.

4.2.2 It was noted that NAT IMG/44 was informed of a review at NAT SARSIG/19 (April 2014) of an update on the trial of the procedure used by Canada and the United Kingdom to accommodate opposite direction flows of traffic in situations where the OTS was split. The NAT IMG noted that although the procedure was not often used, it was of interest to accommodate opposite direction traffic flights in the "gap" that existed when the OTS was split, and that Canada and the United Kingdom confirmed that the procedure was effective (*NAT IMG/44 Summary of Discussions*, paragraph 5.14 through 5.18 refer) through their internal standard SMS procedures The United Kingdom further confirmed that the procedure was reviewed by the regulatory authority.

4.2.3 The NAT SPG was informed that an update on its use would to be presented at NAT SARSIG/20 and NAT SOG/11.

4.2.4 During the discussions, the NAT DMO also suggested that some publicity about the procedure being no longer a trial should be made in addition to its mention in NAT Doc 007, especially considering that, if the procedure was not fully followed, this might have a negative impact. Therefore, the NAT SPG agreed that the NAT IMG and its contributory bodies provide appropriate guidance on whether and how to publicize the procedure.

4.2.5 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/06 – Split Westbound Organised Track System (OTS)

That the:

a) procedure to accommodate opposite direction traffic in a split westbound OTS, as provided at **Appendix I** to this Report be endorsed;

c) States concerned amend their Aeronautical Information Publication (AIP), as appropriate;

d) NAT DMO include the procedure in the North Atlantic Operations and Airspace Manual (NAT Doc 007) for guidance;

e) NAT IMG and its contributory bodies provide appropriate guidance on whether and how to publicize the procedure; and

f) ICAO Regional Director, European and North Atlantic Office, take the necessary steps to inform on the adoption of this procedure.

4.3 SPACE-BASED ADS-B INITIATIVE

4.3.1 The NAT SPG was presented with a paper seeking recommendations with respect to the project to implement ATS surveillance capability using space-based reception of Automatic Dependent Surveillance-Broadcast (ADS-B) signals. As the NAT Region was envisaged as the first place that satellite based ADS-B ATS surveillance be used, the paper considered appropriate that the NAT SPG be involved in the decision making process. Supporting work would need to be progressed through many, if not all of the NAT SPG contributory bodies. Concurrently to this, the NAT SPG noted that work was being done at the global level through several ICAO Panels, Working Groups and Task Forces.

4.3.2 The NAT SPG welcomed the proposal in order to ensure that all aspects would be addressed in a balanced way, taking into account the fairness and equality principles for all NAT members. Consequently, the NAT SPG agreed to the following:

NAT SPG Conclusion 50/07 – Space-Based ADS-B Initiative

That:

a) the NAT SPG support the expanded use of Air Traffic Services (ATS) surveillance in the ICAO NAT Region;

b) the NAT Implementation Management Group (NAT IMG):

i) review and provide input, as appropriate, to the Space-Based Automatic Dependent Surveillance - Broadcast (ADS-B) CONOPS;

ii) identify all activities supporting the implementation of ATS surveillance services, including the associated communication requirements and operational trials in the ICAO NAT Region using space-based ADS-B; and

iii) propose amendments to procedures and documentation;

c) the NAT Safety Oversight Group (NAT SOG) review updates on the conduct and results of the safety management activities supporting the implementation of ATS surveillance services in the ICAO NAT Region using space-based ADS-B;

d) the NAT Economic and Financial Group (NAT EFG) review economic assessments concerning the implementation of ATS surveillance services using space-based ADS-B in NAT airspace; and

e) the NAT IMG, NAT SOG and NAT EFG report progress to NAT SPG/51.

4.4 PROACTIVE ATC INTERVENTION ACTIONThe NAT SPG was provided with a proposal for a mitigation procedure to address aircraft deviations owing to flight management computer (FMC) waypoint errors and detected by ATC through ADS position reports. The proposed mitigation would enable proactive ATC intervention to either prevent or curtail lateral deviations. It was noted that the proposed mitigation was implemented by Canada using a free-text CPDLC message "ADS report indicates incorrect position – confirm" to encourage pilots to verify the coordinates programmed in the FMC using an expanded presentation e.g. "scratch pad" or other means, and not review an abbreviated position such as the Legs Page.

4.4.2 In this regard, the NAT SPG noted that GOLD Table 4-5 was providing globally standardized solution to address and follow up on detected deviations through ADS-C position reports. It was agreed that, although the GOLD solution would not fully address the deviations due to FMC waypoint errors, it would nevertheless provide a globally coordinated procedure to address general cases of deviations detected through ADS-C position reports. If modifications to the GOLD procedure were deemed necessary, these should be developed as part of the work on identifying long-term mitigation procedures.

4.4.3 Accordingly, the NAT SPG agreed on the following:

NAT SPG Conclusion 50/08 – Proactive ATC Intervention Action

That, considering the aircraft sometimes deviate from route owing to FMC waypoint errors (visible to ATC in ADS position reports), and pilots may confirm their intended routing without reference to the expanded waypoints in the FMC:

a) all NAT ANSPs are invited to consider, as an interim mitigation procedure, the use of the standard messages as reflected in Table 4-5 of GOLD;

b) the NAT IMG, in coordination with NAT SOG, analyse causal factors and if necessary, develop long term mitigation procedures and amendments to the NAT documents concerned;

c) the NAT SOG include the information in the Oceanic Errors Safety Bulletin (OESB) in order to provide additional explanation to airspace users;

d) the NAT DMO develop and update the *North Atlantic Operations and Airspace Manual* (NAT Doc 007) to reflect the new procedure; and

e) the ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish and promulgate the updated NAT Doc 007.

5. SAFETY MONITORING

5.1 NAT SOG OUTCOME

5.1.1 The NAT SPG reviewed the outcome of the tenth meeting of the North Atlantic Safety Oversight Group (NAT SOG), which had taken place from 2 to 6 June 2014 in New-York, the United States of America. It was noted that although there was an overall increasing trend in reported lateral errors, both actual and potential, in comparison with the previous review period (April – September 2013), an increase in interventions and preventions allowed the number of GNEs to be reduced. In addition, there was a reduction in the vertical risk estimates for the same reporting period. It was noted that the increase in the number of preventions and interventions probably had a direct relationship to the uptake of data link aircraft equipage in the NAT region/area. Add text to highlight the reduction in the vertical risk estimate.

5.1.2 Furthermore, the NAT SPG noted that human performance contributed to many operational errors and was associated with the top three error types reported by both airspace users and ATC. Therefore there was a potential benefit to be gained by having Human Factors specialists attend the NAT Scrutiny Group in order to better identify underlying causal factors.

5.1.3 The NAT SPG also noted that the major concern of the NAT SOG was that the airspace users were not responding to inquiries about oceanic errors, including incorrect application of contingency procedures which may result in loss of separation.

5.1.4 The NAT SPG was informed that the NAT Vertical Risk Task Force had completed its work and consequently had been disbanded.

5.1.5 The NAT SPG agreed that the NAT SOG/11 would take place in the ICAO EUR/NAT Office in Paris, France from 1 to 5 December 2014.

5.1.6 The NAT SPG noted the agreement by the NAT SOG that in order to facilitate Secretariat's preparations for the NAT SPG meetings, the spring sessions of the NAT SOG would be held at the ICAO EUR/NAT Office in Paris and the Fall sessions could be hosted outside the ICAO EUR/NAT Office.

Reporting of the required data to the NAT Mathematicians' Working Group (NAT MWG)

5.1.7 The NAT SPG was provided with the outcomes of the follow up actions on NAT SPG Conclusion 48/17 that tasked the NAT IMG to investigate the feasibility of the NAT ANSPs to provide air

traffic activity data from the 4th and the 15th of each month to the NAT MWG that would include the following:

i) operator and aircraft type, time, position, level and assigned Mach number from all compulsory reporting points (waypoints), including oceanic entry and oceanic exit points;

ii) estimated time of arrival at each subsequent waypoint to the waypoints listed in i), except the oceanic exit point; and

iii) suitable identification, e.g., registration or other unique indication, so that the disparate data sources can be combined;

5.1.8 The NAT SPG was informed that the NAT IMG determined that the requested data was available from all NAT ANSPs with exception of Portugal. Portugal informed that they would be ready to start providing the required information in 6 months.

5.1.9 The NAT SPG noted that there were additional data fields identified as potentially useful for the purpose of the NAT MWG work. However, it was highlighted that the NAT SPG Conclusion 48/17 agreed scope responded to the NAT MWG needs for the immediate future. If further expansion of the data set would be required, such requests should be submitted together with associated costs/benefits assessments to the NAT SOG and the NAT IMG for their evaluation.

5.1.10 In view of the above, the NAT SPG had endorsed the following Conclusion:

NAT SPG Conclusion 50/09 – Additional Data for Use by the NAT Mathematicians' Working Group

That:

a) the following data be collected for operations on the 4th and 15th of each month within the Gander, Shanwick, New York East, Reykjavik and Santa Maria Oceanic Control Areas (OCA):

   i) operator and aircraft type, time, altitude and position from all compulsory reporting points (waypoints), including the OCA entry and exit points; and

   ii) suitable identification so as to distinguish the individual data, such as registration;

b) the data described in a) above be provided every three months in ASCII text in comma-separated-variable (CSV) format;

c) Canada act as the repository of the data provided; and

d) provider States concerned implement necessary measures to provide the data from 1 September 2014.

6. NAT DOCUMENTATION

6.1 GASP IMPLEMENTATION AND NAT ASR

6.1.1 The NAT SPG had reviewed a proposal to assign the responsibility for monitoring the implementation of the GASP in the ICAO NAT Region to the NAT SOG. In this regard, the NAT SPG also recalled that the ICAO ANC in its review of the NAT SPG/49 outcome had suggested that the NAT SOG should evolve into the NAT RASG equivalent group. In doing so, due respect should be given to the NAT Region specificities of being an oceanic airspace with specific priorities and targets.

6.1.2 Furthermore, the NAT SPG noted that close coordination between the NAT SOG and adjacent RASGs would be required in order to avoid duplication of efforts. In this regard, the NAT SPG noted that the NAT SOG Chairman was already attending the RASG-EUR meetings

NAT SPG Conclusion 50/10 – GASP Implementation in the NAT Region

That:

a) the NAT SOG be responsible of monitoring the implementation of the GASP in the ICAO NAT Region; and

b) NAT SOG's terms of reference be amended to incorporate the new responsibility.

6.1.3 The NAT SPG reviewed the draft 2013 NAT Annual Safety Report (NAT ASR) and invited the Secretariat to take appropriate actions in order to coordinate with the ICAO Legal Affairs and External Relations Bureau to assess if it could be made public, taking into consideration some safety sensitive information published in the document that could be misunderstood or misinterpreted by an unaware reader.

6.1.4 The ICAO Secretariat highlighted that the information available in the draft 2013 ASR would be used to populate the ICAO Regional Performance Dashboards that provided a glance of both Safety and Air Navigation Capacity and Efficiency strategic objectives. Accordingly, the NAT SPG agreed to the following:

NAT SPG Conclusion 50/11 – Draft 2013 Annual Safety Report & Safety Priorities and Targets Summary

That:

a) the *Draft 2013 Annual Safety Report & Safety Priorities and Targets Summary* as presented in **Appendix J** be endorsed; and

b) the ICAO Secretariat investigate the availability of the *Annual Safety Report (ASR)* outside the NAT SPG and provide feed-back to the NAT SPG by correspondence.

6.2 REVISED TIME ESTIMATES

6.2.1 The NAT SPG was presented with a PfA to the NAT SUPPs regarding the dispensation to report errors in excess of 3 minutes for time estimates to the next applicable reporting point (NAT SUPPs, Doc 7030/5, paragraph 3.1.3.7 refers) for aircraft that were equipped with and operated ADS-C.

6.2.2 The NAT SPG noted the rationale for the proposed amendment was to take into account that the ADS-C application was providing regular updates to the ATS Units on the actual position of the aircraft and on the aircraft time estimates while the aircrew were not aware of the information provided.

6.2.3 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/12 – PfA to the SUPPs, that Revised Time Estimates are not Required in Case of ADS-C

That:

a) the following proposed change to section 3.1.3.7 of the *NAT Regional Supplementary Procedures* (NAT SUPPs, Doc 7030/5) be endorsed:

"3.1.3.7 If the estimated time for the next position last reported to air traffic control is found to be in error by three minutes or more, a revised estimated time shall be transmitted as soon as possible to the ATS unit concerned.

3.1.3.8 If the aircraft is equipped with and operates ADS-C the requirement for revised estimates is considered fulfilled."

b) the ICAO Regional Director, Europe and North Atlantic process the proposed amendment in accordance with the formal procedures.

6.3 OPERATIONS OF NON-MNPS AIRCRAFT IN MNPS AIRSPACE

6.3.1 The NAT SPG was presented with a PfA to the NAT SUPPs that was developed to allow non-MNPS aircraft to operate in MNPS airspace where ATS surveillance was provided and direct controller-pilot very high frequency (VHF) voice communication was maintained (NAT SUPPs, Doc 7030/5, paragraph 6.9.1 refers).

6.3.2 The NAT SPG noted that current provisions in the NAT SUPPs indicated that there was no impediment to permit non-MNPS approved aircraft to operate in MNPS airspace under appropriate conditions. (NAT SUPPs, Doc 7030/5, paragraph 4.1.1.5.1.7 refers).

6.3.3 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/13 – PfA to the SUPPs, on non-MNPS Aircraft Operations in MNPS Airspace

That:

a) the following proposed change to section 6.9.1 of the *NAT Regional Supplementary Procedures* (NAT SUPPs, Doc 7030/5) be endorsed:

"6.9.1 Aircraft not meeting the requirements of 4.1.1.5.1 shall not be allowed to operate in MNPS airspace unless all the following conditions are satisfied:

a) the aircraft is being provided with ATS surveillance service,

b) direct controller-pilot VHF voice communication is maintained, and

c) the aircraft has a certified installation of equipment providing it the ability to navigate along the cleared track."

b) the ICAO Regional Director, Europe and North Atlantic process the proposed amendment in accordance with the formal procedures.

6.4 CONSOLIDATED REPORTING RESPONSIBILITIES HANDBOOK

6.4.1 The NAT SPG was presented with a draft version of the "NAT Consolidated Reporting Responsibilities Handbook", based on numerous different sources. The NAT SPG noted that opportunities for contributions to the document had been offered to the NAT Central Monitoring Agency (NAT CMA), the NAT DLMA, the NAT SG, the NAT MWG and NAT ANSPs. The document's primary goal would be to

serve as reference to the NAT Provider States (regulators and ANSPs). It was envisioned as a living document, which would need periodic updating.

6.4.2 The NAT SPG noted that the ability to learn the root causes, safety trends, and effective mitigations was directly related to the data collected and shared. Therefore, reliable and consistent reporting of occurrences to the NAT CMA was critical. It was also a fundamental part of an ANSP's Safety Management System as described in Annex 19 to the Chicago Convention as well as the ICAO Safety Management Manual (SMM) (Doc 9859).

6.4.3 In this regard, the NAT SPG noted that the reporting requirements existed in numerous different source documents, making them difficult to assess. Therefore, NAT SPG/48 (NAT SPG Conclusion 48/20 refers) tasked the NAT SOG to develop a single source document ("handbook") to consolidate all the NAT Regional reporting requirements. Such a document would also need to take account of the relationship amongst various stakeholders involved (e.g. between the NAT DLMA and the NAT CMA.

6.4.4 Consequently, the NAT SPG agreed that further work would be undertaken in relation to the draft Handbook, in coordination with the NAT IMG, in order to provide further input to consolidate an updated version of the handbook. Accordingly, the NAT SPG agreed to the following:

NAT SPG Conclusion 50/14 – Consolidated ICAO NAT Region Safety Occurrence Reporting Requirements Document

That:

a) the NAT Safety Oversight Group (NAT SOG), in coordination with ICAO Secretariat and NAT IMG, update the *Consolidated Reporting Responsibilities Handbook* (**Appendix K** refers) in which all NAT Region specific safety related reporting requirements, excluding those covered by ICAO Annex 13, will be consolidated and present it to NAT SPG/51; and

b) this conclusion replaces NAT SPG Conclusion 48/20.

6.5 SUPPS PFA PROCESS

6.5.1 The NAT SPG was presented with a proposal to establish a procedure for the initiation and agreement for further processing of PfAs to the NAT SUPPs. In order to increase efficiency, it was proposed that in the future, all PfAs to the NAT SUPPs be reviewed and endorsed by the NAT SPG and thereafter processed by the ICAO Secretariat, on the behalf of the originating State(s) or NAT SPG, without an individual State(s) being required to officially submit to the Secretariat the agreed PfAs.

6.5.2 The proposed procedure (**Appendix L** refers), which would remove the requirement for a State(s) to officially submit the NAT SPG-agreed PfAs to the ICAO Secretariat, was aimed at increasing efficiency in the follow-up of actions agreed by the NAT SPG.

6.5.3 The normal procedure would ensure that the NAT SUPPs PfAs be presented to the NAT SPG meetings. However, for exceptional cases, when a PfA would require urgent processing between two NAT SPG meetings, a NAT SPG expedite procedure to get approval by correspondence could be applied. Nonetheless, it was expected that the PfA would be coordinated with the NAT IMG and NAT SOG before its circulation to the NAT SPG member States and Observers by correspondence for agreement.

6.5.4 Based on the above considerations, the NAT SPG endorsed the proposed procedure and agreed to include it in the NAT SPG Handbook, (NAT Doc 001), after "Meeting Documentation" (p. 12) section. In line with the foregoing, the NAT SPG agreed to the following:

NAT SPG Conclusion 50/15 – Procedure for Processing of Proposals for Amendment to the NAT SUPPs

That:

a) the procedure for processing of Proposals for Amendment to the NAT *Regional Supplementary Procedures* (SUPPs, Doc 7030) as detailed in **Appendix L** to this Report is endorsed; and

b) the ICAO Regional Director, Europe and North Atlantic, take the necessary steps to update the *NAT SPG Handbook* (NAT Doc 001) to reflect the above agreed procedure.

6.6 NAT FAST TRACK PROCEDURE FOR SAFETY OCCURRENCES

6.6.1 The NAT SPG was presented with a revised version of the NAT Fast Track Procedure developed for safety occurrences following the proposal for revision raised at NAT SPG/49 and reflecting the replies received to the ICAO State letter (EUR/NAT 14-0226.TEC refers).

6.6.2 It was noted that the proposal for revision to the NAT Fast Track Procedure had been developed by the ICAO Secretariat in the form of a flowchart and a reporting form for safety occurrences. This new Fast Track Procedure was meant to explain the whole process and ensure transparency and feed-back.

6.6.3 Therefore, the NAT SPG agreed to the following:

NAT SPG Conclusion 50/16 – NAT Fast Track Procedure for Safety Occurrences

That:

a) the *NAT Fast Track Procedure for Safety Occurrences* as presented in **Appendix M** be endorsed; and

b) the ICAO Regional Director, European and North Atlantic Office:

iii) take the necessary steps to update the *NAT SPG Handbook* (NAT Doc 001) to reflect the updated *NAT Fast Track Procedure for Safety Occurrences*; and

iv) publish the updated version of NAT Doc 001 on the ICAO EUR/NAT website.

6.7 NAT SERVICE DEVELOPMENT ROADMAP

6.7.1 The NAT SPG was provided with proposed updates to NAT Doc 009, endorsed at NAT IMG/44, regarding the ADS-B implementation and the Greenland ATM Improvement Program which were missing in the previous version of the document.

6.7.2 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/17 – Updated *NAT Service Development Roadmap* (NAT Doc 009)

That:

a) the amendment to the *NAT Service Development Roadmap* (NAT Doc 009) as detailed in **Appendix N** to this Report be endorsed; and

b) the ICAO Regional Director, Europe and North Atlantic publish the updated NAT Doc 009 on the ICAO EUR/NAT website.

6.8 SANTA MARIA 50 NM LAT SEPARATION PFA

6.8.1 The NAT SPG was presented with a PfA to the NAT SUPPs, regarding the application of 30 NM or 50 NM longitudinal separation and 30 NM or 50 NM lateral separation in the control area (CTA) of Santa Maria Oceanic.

6.8.2 The NAT SPG noted that the PfA was subsequent to the endorsement at NAT IMG/43 of the "Concept of Operations for the application of 30NM or 50NM longitudinal separation and 30NM or 50NM lateral separation (CONOPS) in Santa Maria Oceanic CTA in accordance with the Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444)" (NAT IMG Decision43/10 refers), and of the "Implementation Plan for the application of 50NM lateral separation between RNAV10 (RNP10) and RNP4 approved aircraft in Santa Maria Oceanic CTA in accordance with the Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444)" (NAT IMG Decision 43/11 refers).

6.8.3 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/18 – PfA to the SUPPs, on 50 NM Lateral Separation in Santa Maria Oceanic CTA

That:

a) the proposed changes to section 4.1.1 and 6.2.1 of the *NAT Regional Supplementary Procedures* (NAT SUPPs, Doc 7030/5) as indicated in **Appendix O**to the NAT SPG/50 Report be endorsed:

b) the ICAO Regional Director, Europe and North Atlantic process the proposed amendment in accordance with the formal procedures.

6.9 MACH NUMBER PFA

6.9.1 The NAT SPG was presented with a PfA to the NAT SUPPs, regarding the mandatory provision of Mach number in each clearance.

6.9.2 The NAT SPG noted that a speed distribution analysis of aircraft flying in the Reykjavik Control Area (CTA) confirmed that speed information received via ADS-C periodic reports was reliable, suitable for use in fix-time calculation, and in association with CPDLC could enable discontinuation of the practice of assigning a fixed Mach speed to all turbojet aircraft regardless of whether the speed assignment was required for separation or not.

6.9.3 The NAT SPG noted that the mandatory assignment of a fixed Mach was preventing the adoption of more economical speed profiles when longitudinal separation was not an issue. It was reminded that in the absence of an assigned speed in the clearance, the longitudinal minimum separation reverted to 15 minutes by default, and that application of a smaller longitudinal separation, e.g. of 10 minutes, would still require the application of the Mach number technique. The NAT SPG also noted that air operators (AOs) practice to include a speed in their flight plans was not changed.

6.9.4 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/19 – PfA to the SUPPs, to Remove the Mandatory Provision of Mach Number in Each Clearance

That:

a) the following proposed change to paragraph 6.1.1.7 of the NAT *Regional Supplementary Procedures* (SUPPs, Doc 7030/5) is endorsed:

~~6.1.1.7 The ATC-approved true Mach number shall be included in each clearance given to subsonic turbo-jet aircraft operating within Bodø Oceanic, Gander Oceanic, New York Oceanic, Reykjavik, Santa Maria Oceanic and Shanwick Oceanic control areas.~~

b) the ICAO Regional Director, Europe and North Atlantic process the proposed amendment in accordance with the formal procedures; and

c) the NAT Document Management Office (NAT DMO) develop guidance material to be included in the *North Atlantic Operations and Airspace Manual* (NAT Doc 007).

6.10 VOLCANIC ASH CONTINGENCY PLAN – NORTH ATLANTIC REGION (NAT DOC 006)

6.10.1 The NAT SPG discussed the proposed changes to the *Volcanic Ash Contingency Plan– North Atlantic Region* (NAT Doc 006, Part II) as a follow-up to NAT IMG/43 Decision 43/14 with support from NAT ATMG which took into account

a) The final version of amended *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) section 15.8 scheduled to take effect in November 2014, which transfers the responsibility for Volcanic Ash (VA) avoidance or the decision to fly or not to fly into an area of known or forecast VA contamination from Air Traffic Management (ATM) to Aircraft Operators (AO);
b) The ICAO Air Traffic Management Volcanic Ash Contingency Plan (VACP) from the International Volcanic Ash Task Force (IVATF); and
c) The possible need to separate the NAT Volcanic Ash Contingency Plan from the one for the European Region.

6.10.2 and addressed the following items:

a) Establishment of a Danger Area at the start of eruption while information is not available;
b) NOTAM distribution to include the notification of increased volcanic activity (eruption imminent), start of eruption, significant changes in the volcanic activity and end of eruption. NOTAMS will also list sources of information available to airspace users;
c) ATM to pass SIGMET information to aircraft in flight. SIGMET to be distributed as well through other channels such as Meteorological (MET) data banks and AOs. For flight planning purposes AOs can use the advisories issued by the Volcanic Ash Advisory Centres (VAACs);
d) ATM to impose traffic flow restrictions as necessary to handle the air traffic safely noting there was significant uncertainty at the moment regarding aircraft operators "behavior" under the new rules. Would aircraft operators choose to avoid such areas?
e) The NAT Organized Track System (OTS) should normally be designed to remain outside forecast contaminated areas. It was understood that any aircraft penetration into contaminated areas would be based on specific safety assessments that were expected to vary between aircraft operators. Therefore it was expected that ATM would not be able to take these into account in the OTS design. Designing an OTS though a contaminated area would also falsely lead operators to believe that operation on a published track within the contaminated area had been deemed to be safe <u>without an (operator-specific) safety assessment</u>.

6.10.3 Before deliberating on the proposed NAT VACP, the NAT SPG reviewed a paper to be submitted by the United Kingdom and France to the EANPG COG/59 meeting (1-4 July 2014) which described a proposal to replace volcanic ash concentration charts with volcanic ash contamination safety risk charts using a total ash-column based approach. This proposed product was based on satellite and linked to the definition of discernable ash (*volcanic ash detected by: defined impacts on/in aircraft; or by agreed in-situ and/or remote sensing techniques*) as 0.2 g/m^2 (+-0.150g/m^2) under the most favorable conditions. This was now recognized (IVATF/4 – WP/11) as the minimum quantitative satellite-based discernible ash detection threshold, used globally by the VAACs to produce their Volcanic Ash Advisories (VAA). This would translate to an equivalent ash mass concentration threshold of $2x10^{-4}$ g/m^3 for a uniformly mixed ash cloud of 1000 m thickness. This thickness value was chosen based on observed ash layer thickness which typically ranged from a few hundred metres to around 3000 metres. In relation to the EUR and NAT VACP, contamination levels would yield the following:

- 'low contamination' ash column loading threshold value
    - Model ash column loading output (0.2 g/m^2 as proxy for $2x10^{-4}$ g/m^3) verified, validated and amended against agreed sources of qualitative in-situ and remote sensing information
- 'medium contamination' ash column loading threshold value
    - Model ash column loading output (2 g/m^2 as proxy for $2x10^{-3}$) verified, validated and amended against available quantitative in-situ and remote sensing data
- 'high contamination' ash column loading threshold value
    - Model ash column loading output (4 g/m^2 as proxy for $4x10^{-3}$ g/m^3)

6.10.4 These contamination levels and ash top height assessment could be captured on one product. Implementation of these products is under consideration and could be available as early as 2015. The authors of the paper did not believe changes to SRAs were necessary, however, the NAT SPG noted that even a nomenclature change could result in documentation change processes and coordination between operators, regulators, European Aviation Safety Agency (EASA) and ICAO may be necessary.

6.10.5 The NAT SPG noted that the proposed changes to the VACP in the NAT were based on the ATM VACP template provided by the IVATF which did not mention concentration values and only references contamination. Therefore, any changes to nomenclature to the NAT proposed changes should be minimum, such as using the minimum quantitative satellite-based discernible ash detection threshold as part of the definition of contamination.

6.10.6 The NAT SPG noted that it was not clear what the meteorological watch office would issue in terms of SIGMET if the volcanic ash contamination safety risk charts were made available. In addition, it was not yet clear if the volcanic ash contamination safety risk charts would be an official ICAO product, which may have implications for high seas airspace. The NAT SPG agreed that these issues should be discussed by the NAT IMG in coordination with the NAT SOG and EANPG COG to promote harmonization of the NAT and EUR VACPs where possible. Gaps identified in this forum could be assigned for assessment and possible resolution to a future EUR/NAT volcanic ash task force if deemed necessary.

6.10.7 Given the above, the NAT SPG agreed to the following Conclusion:

NAT SPG Conclusion 50/20 – New NAT *Volcanic Ash Contingency Plan*

That:

a) the *Volcanic Ash Contingency Plan– North Atlantic Region* (NAT Doc 006, Part II) be updated as provided at **Appendix P** to this Report, as Provisional Edition 2014 effective 13 November 2014;

b) the ICAO Regional Director, Europe and North Atlantic take appropriate actions to publish and promulgate the updated NAT Doc 006, Part II, Provisional Edition 2014 effective 13 November 2014;

c) the NAT IMG together with the NAT SOG coordinate with the EANPG COG to produce a gap analysis between the EUR and NAT Volcanic Ash Contingency Plans and address identified discrepancies;

d) the NAT IMG be mandated to update the Provisional NAT Volcanic Ash Contingency Plan, using the outcome of c) above; and

e) the NAT IMG advise NAT SPG on the opportunity to establish (after November 2014) a EUR/NAT Volcanic Ash Task Force if further review of the plan would be required.

6.10.8 The NAT SPG noted that other issues to be addressed separately or in the future would include:

a) Definition of contamination
b) Responsibility/accountability of air traffic services in light of the new provisions in the PANS-ATM noting that normally the controller would not be in a position to make such decisions or take action
c) Simulate the effects on operational environment of a large-scale miscalculation by airspace users resulting in requests for massive re-routings by a large number of aircraft

6.11 NORTH ATLANTIC SYSTEMS PLANNING GROUP HANDBOOK (NAT DOC 001)

6.11.1 The NAT SPG received several proposals to amend NAT Doc 001 coming from different sources.

Provision of NAT air traffic forecast

6.11.2 The NAT SPG noted that, in the context of the discussions taking place at NAT EFG/26, the NAT EFG highlighted that most of their economic assessments relied on frequently updated traffic forecasts that they compiled, which could easily be made available to the NAT SPG working structure to supplement the NAT official traffic forecast currently updated every two years.

6.11.3 The NAT SPG welcomed the offer and approved the following:

NAT SPG Conclusion 50/21 – Provision of NAT Traffic Forecast by the NAT EFG

That the *North Atlantic Systems Planning Group* (NAT SPG) *Handbook* (NAT Doc 001) be amended to include the provision of NAT traffic forecasts in the Terms of Reference (ToRs) of the NAT Economic and Financial Group (NAT EFG).

NAT DMO attendance at NAT ATMG

6.11.4 The NAT SPG noted that the NAT IMG supported the view of NAT ATMG that it would be very beneficial to have the opportunity of the physical presence of NAT DMO in the NAT ATMG meetings to support its work programme on a yearly basis.

6.11.5 Therefore the NAT approved the following:

NAT SPG Conclusion 50/22 – Proposed Amendment to the NAT ATMG Composition

That:

a) the amendment to the *North Atlantic Systems Planning Group* (NAT SPG) *Handbook* (NAT Doc 001), regarding the composition of the NAT Air Traffic Management Group (NAT ATMG) as detailed in **Appendix Q** to this Report be approved; and

b) the ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish and promulgate the updated NAT Doc 001.

NAT OPS/AIR

6.11.6 The NAT SPG noted that the NAT IMG, through NAT IMG Decision 43/22, adopted revised Terms of Reference (ToRs) for the NAT Operations and Airworthiness (NAT OPS/AIR) sub-group and changed its reporting lines to the NAT CNSG (*NAT IMG/43 Summary of Discussions*, Appendix Y refers). The NAT SPG noted that, subsequent to this decision, NAT IMG/44 was informed that the transition had been carried out.

6.11.7 In view of the above the NAT SPG approved the following:

NAT SPG Conclusion 50/23 – Amendment to the *NAT SPG Handbook* Regarding the NAT OPS/AIR

That:

a) the amendment to the *North Atlantic Systems Planning Group* (NAT SPG) *Handbook* (NAT Doc 001) as detailed in **Appendix R** to this Report be approved; and

b) the ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish and promulgate the updated NAT Doc 001.

Publication of the NAT OESB and the NAT SOC

6.11.8 The NAT SPG noted that NAT SOG/10, in view of its responsibility for approving amendments to the Oceanic Errors Safety Bulletin (OESB) and the Sample Oceanic Checklist (SOC), proposed an amendment to improve the effectiveness of the visibility of the OESB and SOC.

6.11.9 The NAT SPG agreed to the suggestion from the NAT SOG, and adopted the following:

NAT SPG Conclusion 50/24 – Amendment to the *NAT SPG Handbook* Regarding the NAT OESB and NAT SOC

That the:

a) amendment to the *North Atlantic Systems Planning Group* (NAT SPG) *Handbook* (NAT Doc 001) as detailed in **Appendix S**to this Report be approved; and

b) ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish and promulgate the updated NAT Doc 001.

6.12 NAT OPERATIONS AND AIRSPACE MANUAL (NAT DOC 007)

ACAS carriage and operation

6.12.1 In continuation of the discussion on the NAT policy for ACAS II (paragraphs 4.1.1 and 4.1.2 refer), the NAT SPG was presented with a proposal to amend NAT Doc 007 to remove material regarding

ACAS II related MEL requirements, as this subject was strictly within the remit of the State of the Operator or the State of Registry. The NAT SPG noted that further discussion of this subject was required, in order to ensure that all stakeholders agreed upon and understood the airspace requirements and operator obligations in regards to the carriage and operation of ACAS II in the ICAO NAT Region, and accepted the United States offer to facilitate the discussion on the subject (.

6.12.2 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/25 – Proposal for Amendment to NAT Doc 007 to Remove References to MEL Relief

That:

a) the NAT Document Management Office (NAT DMO) amend the *North Atlantic Operations and Airspace Manual* (NAT Doc 007) to remove references to possible Minimum Equipment List (MEL) relief, as indicated in **Appendix T** to this Report; and

b) the ICAO Regional Director, Europe and North Atlantic, take appropriate actions to publish and promulgate the updated NAT Doc 007.

NAT Doc 007 issues

6.12.3 The NAT SPG noted that NAT Doc 007 Edition 2013 incorporated all proposed updates (NAT SPG Conclusion 49/23 refers), with one exception, i.e.: "*Replace the* separate *jurisdiction surveillance coverage charts in Chapter 10 with two NAT-wide conglomerations, based on consistent coverage criteria and in similar format to the VHF Coverage chart at Attachment 5 in NAT Doc 007*". However subsequent to the publication of Edition 2013, it had been noted that information on the "Withdrawal of the North Atlantic European Routing Scheme (NERS)" and the "Division of the New York Oceanic Flight Information Region (FIR) into two new "East" and "West" FIRs", had not been included in the updates. This and other issues regarding NAT Doc 007 were identified by the NAT DMO and addressed at NAT ATMG/43.

6.12.4 The NAT SPG also noted that NAT IMG/44 reviewed the aforementioned list, and endorsed the required modifications to NAT Doc 007.

6.12.5 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/26 – Amendment to NAT Doc 007 by NAT DMO

That:

a) the NAT DMO develop, in coordination with the NAT SPG contributory bodies, the necessary amendments to NAT Doc 007 to address the changes listed in **Appendix U**to this Report;

b) the NAT IMG be tasked to review the documentation for the readback on Oceanic Clearance and to take steps to align the procedures and the documentation;

c) the NAT DMO correct any inaccuracy or inconsistency in NAT Doc 007, subject to NAT IMG endorsement; and

d) the ICAO Regional Director, Europe and North Atlantic, take appropriate actions to publish and promulgate the updated NAT Doc 007.

Strategic Lateral Offset Procedures (SLOP)

6.12.6 The NAT SPG noted that NAT SOG/10 was presented with a discussion that took place at the NAT MWG regarding the use of the SLOP and a proposed amendment to the guidance regarding SLOP

in NAT Doc 007, subsequent to NAT SPG Conclusion 49/17. At NAT SOG/10 the Vertical Risk Task Force (VRTF) also suggested a new SLOP wording for NAT Doc 007.

6.12.7 The NAT SPG noted the NAT MWG's concerns that the current wording did not help achieve optimal SLOP usage and hence maximize the benefit of SLOP. The NAT SPG also noted that NAT SOG/10 reviewed and endorsed a new wording.

6.12.8 In the discussion, it was noticed that the guidance text on SLOP in NAT Doc 007 had been frequently modified since its inclusion, and that unless justified by some inconsistency with the SLOP text in the ICAO SARPs, it was advisable not to modify it in the future.

6.12.9 In view of the above, the NAT SPG approved the following:

NAT SPG Conclusion 50/27 – Clarify SLOP Guidance within Nat Doc 007

That:

a) the NAT Document Management Office (NAT DMO) amend the *North Atlantic Operations and Airspace Manual* (NAT Doc 007) pertaining to the application of SLOP to provide clarity to operators as indicated in **Appendix V** to this Report; and

b) the change and its rationale be publicized, so that the application of SLOP by NAT airspace users provides optimal safety benefit for the region.

6.12.10 The NAT SPG identified that several actions were required in order to update NAT Doc 007 to reflect the split of the former New York Oceanic FIR in the New York Oceanic FIR EAST and New York Oceanic FIR WEST and tasked the NAT DMO in coordination with the NAT IMG to carry out this exercise and report back to NAT SPG/51.

NAT SPG Conclusion 50/28 – Update the Nat Doc 007 to Reflect the Split of the New York Oceanic FIR

That the NAT Document Management Office (NAT DMO):

a) amend the *North Atlantic Operations and Airspace Manual* (NAT Doc 007) pertaining to the split of the New York Oceanic FIR in coordination with the NAT IMG; and

b) report progress to NAT SPG/51.

7. WORK PROGRAMME INCLUDING SUB-GROUPS

7.1 NAT IMG OUTCOME

7.1.1 The NAT SPG noted that the NAT IMG met twice since NAT SPG/49 (NAT IMG/43 took place from 5 to 8 November 2013 in Paris, France and NAT IMG/44 was held from 13 to 16 May 2014 in Ottawa, Canada). The outcomes of these meetings had been reported in various parts of this report. In addition, several other issues had been discussed that are reported on in this section of the NAT SPG report.

Transition from MNPS to PBN; the MNPS to PBN Task Force

7.1.2 The NAT SPG noted the NAT IMG's decision to establish a dedicated Task Force (NAT MNPS to PBN Task Force) to advance the work to transition from the MNPS airspace to NAT High Level Airspace (HLA) based on PBN. This work that would require extensive coordination amongst the NAT IMG contributory bodies should ensure that the changes to different ICAO and NAT documents were synchronised and ready for the 2015 milestone. It was also acknowledged that clarification on how the transition process should be put in practice during the 2015-2020 timeframe was required from the regulatory

authorities. The *Rapporteur* of the NAT MNPS to PBN Task Force would be provided by Canada (NAT IMG Decision 44/1 refers).

7.1.3 Additionally, the NAT SPG noted that in support of Task 4.2.1 of the NAT MNPS to PBN transition plan, a PfA to the NAT SUPPs meant to ensure that operators requesting a NAT MNPS authorization had addressed all applicable crew and operator procedures requirements, had been agreed at NAT IMG/43 (NAT IMG Decision 43/07 refers). As this PfA did not cover the transition from MNPS to PBN, nor beyond, the NAT IMG agreed to put it on hold and tasked the MNPS to PBN Task Force to revisit it in light of the above.

Trial Implementation of RLatSM in the ICAO NAT Region

7.1.4 The NAT SPG noted that the NAT IMG had reviewed and amended the Task List for the trial implementation of RLatSM plan (NAT IMG Decision 44/3 refers).

Navigation errors associated with pilot navigation procedures and the ARINC 424 half-degree waypoint naming convention

7.1.5 The NAT SPG was informed about a series of NAT lateral deviation events that occurred recently, related to the unannounced incorporation of half degree waypoints into aircraft navigational databases and subsequent pilot misuse of the ARINC 424 naming convention for half (½) degree waypoints.

7.1.6 The NAT SPG noted that corrective actions had been undertaken to resolve the issue in the short term as the half degree waypoints would be used for the North Atlantic's upcoming RLatSM trial, set to begin in November 2015. In this regard the NAT SPG was informed that the NAT IMG sub-groups had been tasked to investigate potential mitigations and explore measures to help pilots readily distinguish half degree from whole degree of latitude waypoints entered into flight management computers and shown on aircraft map displays.

7.1.7 The NAT SPG noted that the United States agreed to facilitate this discussion in close coordination with NAT CNSG, all NAT ANSPs, flight operations authorities, avionics suppliers, operators and navigation data providers, and develop a proposal for presentation at the appropriate NAT SPG working groups in the Fall of 2014 (NAT IMG Decision 44/1 refers).

NAT Bulletin Containing Special Emphasis Items for Operation in NAT RLatSM Trial

7.1.8 The NAT SPG was informed that NAT IMG, based on the information received from IATA regarding the development of a NAT OPS Bulletin meant to highlight special emphasis items (SEI) related to RLatSM, agreed to task the NAT SARSIG, in coordination with the ICAO Secretariat and NAT OPS/AIR, to review the SEI document to ensure that an appropriate wording was adopted in regard to operator practices and policies in order to avoid flight crew confusion. A progress report was expected at NAT IMG/45.

Status of Proposal for Amendment to NAT SUPPs to incorporate reduced longitudinal separation

7.1.9 The NAT SPG was informed on the progress of the proposal for amendment to the NAT SUPPs (Serial No.: EUR/NAT - S14-04-NAT 6-3) which had been approved at NAT IMG/43 (NAT IMG Decision 43/15 refers).

7.1.10 In this regard, the NAT SPG noted that the above-mentioned draft PfA had been sent on 3 March 2014 to ICAO HQ in order to obtain an approval for further circulation. The NAT SPG noted that in view of the ongoing work within the SASP and OPLINKP, expected to be completed in 2016, the PfA was still under consideration. Depending on the outcomes of this ongoing work at the global level, the NAT PfA may need to be revisited.

7.1.11 In this regard, the NAT SPG had expressed its concern that if the SASP and OPLINKP work would extend beyond 2016, this would have a negative impact on the progress of the NAT implementation plans. Therefore, the NAT SPG agreed that it was important to continue cooperation with the global groups and tasked the NAT IMG to monitor the progress of the global work in order to recommend further course of action. The NAT SPG agreed that if the 2016 target for availability of global provisions would not be met, the SUPPs amendment would be pursued. The NAT SPG also requested that the ICAO Secretariat seek a formal response regarding the proposal for amendment Serial No.: EUR/NAT - S14-04-NAT 6-3.

7.1.12 The NAT SPG noted that the NAT IMG/44 considered a draft proposal for amendment to NAT SUPPs developed by Iceland to make the requirements on data link equipment apply throughout the region. The Secretariat provided an update on this subject to the NAT SOG. Although the proposal was subsequently endorsed by the NAT SOG, technical issues had prevented its submission to this meeting. Based on the developments at the global level, it would be further refined by the NAT IMG and its sub-groups and reintroduced at a later date.

NAT Voice Communications System Performance and Optimisation

7.1.13 The NAT SPG was provided with a summary of the NAT voice communications system status report for 2013. It was noted that the total amount of 3.317.841 messages for all NAT aeronautical radio stations was distributed as follows: 69.8% by HF, 30.1% by VHF and 0.1% by SATVOICE. The relative percentage of traffic handled by States was as follows: 28% by Canada, 50% by Ireland and Iceland, 10% by Portugal, 11% by the United States and 1% by Norway. It was also noted that an increase of 0.03% had occurred in the NAT air-ground voice communications volume from 2012 to 2013.

7.1.14 The NAT SPG was informed that due to the increasing data link equipage and new regional and domestic air routes area (RDARA) frequencies implemented by some of the NAT radio stations, HF network congestion was no longer seen as a concern.

7.1.15 The NAT SPG noted that with regard to NAT IMG Decision 43/13 – Space Weather Contingency Procedures, and the potential effects of extreme space weather events on the ATC infrastructure, no need for additional contingency procedures, apart from the existing ones, had been identified for the NAT voice communications system operations.. In this respect, it was noted that all NAT radio stations currently monitored relevant websites providing notifications on space weather phenomena and had already put in place contingency measures to notify the ATS units about the possibility of reduced HF propagation. It was also noted that in cases of severe space weather phenomena forecasts, a teleconference would be established with all on-duty radio stations' supervisors to discuss possible measures to minimize the impact and improve cooperation and support between stations. Amongst the mitigation measures, forwarding of position report (POS) messages between stations would be extended to provide earlier information from flights to the relevant stations.

7.1.16 Furthermore, the NAT SPG noted that further examination would be required with regard to the potential effects of space weather on the satellite communications systems. In this respect, it was noted that Inmarsat and Iridium would provide information to the NAT IMG sub-groups on the measures taken to protect their systems, the likelihood of the impact on their system's performance and any contingency measures.

CPDLC route clearances

7.1.17 The NAT SPG noted that in follow up to NAT SPG Conclusion 49/09 to "…*facilitate the use of automated systems to upload routes directly into the Flight Management Computer*", the NAT IMG had tasked the NAT CNSG to develop a draft NAT CPDLC route clearances implementation plan (to address all route clearances issued via CPDLC) and report back to NAT IMG/46 (NAT IMG Decision 44/7 refers).

Interpretation of FANS-1/A Exemption to the EU Data Link Mandate

7.1.18 The NAT SPG recalled that the European Union (EU) Data Link Implementing Rule (EC Regulation 29/2009) was providing exemptions for FANS-1/A equipped aircraft that obtained airworthiness certificate prior to 1 January 2014. The NAT SPG noted that a different interpretation of the FANS-1/A exemption (EC 29/2009, Article 3, paragraph 4 b) refers) was recently discovered where the equipment would have had to be fitted prior to 1 January 2014. In addition, the interpretation required the proof that the equipment had been operational before that date. This interpretation greatly restricted the scope of the exemption. This was a matter of concern since FANS-1/A capable aircraft could have been transferred from a Region where there had been no benefit to use FANS-1/A and therefore had not been used.

7.1.19 Two variations on the limitation of the scope of the exemption had been encountered on the "frequently asked questions" page at https://www.eurocontrol.int/faq/link2000?type=All&page=1. Although the clarification appeared not to impact users of the NAT Region as the applicability was limited to "aircraft based in Europe and flying predominantly within Europe", it was noted that requests for further clarification had been met with a slightly different interpretations where this nuance was lost.

7.1.20 Furthermore, the NAT SPG was informed that EASA has published a report on the technical issues observed in the performance of the aeronautical telecommunication network (ATN)/VHF data link mode 2 (VDL2) data link selected for the application of the EU data link mandate. A consultation workshop was held by the European Commission (EC) to review the outcomes of the EASA report and identify a way forward. The workshop had concluded that the current implementation of the ATN/VDL2 technology was not viable to support the intent of the EU DLS IR. Therefore, the EC had proposed to suspend the timelines of the rule and revise it.

7.1.21 The outcome of the workshop had been reported to the EUROCONTROL Agency Advisory Board (AAB) and would be further discussed at the EU Single Sky Committee on 1 July 2014. A concrete proposal with the new timelines was expected to be prepared before the next AAB meeting in October 2014 with the intent to approve the revised rule at the SSC meeting in November 2014. The NAT SPG noted that this revision would have impact on the timelines for the exemptions as well. The NAT SPG members were invited to take active participation in the revision process so that to ensure that the needs of the FANS 1/A users would be taken into account.

NAT Data Link Mandate Implementation Task List Update

7.1.22 The NAT SPG noted that the NAT DLM Implementation Plan (Task Lists) had been updated (NAT IMG Decision 44/10 refers).

7.1.23 The NAT SPG also noted that in follow up to Conclusion 49/18 [Safety Aspects of Data Link Mandate (DLM) Implementation], the NAT IMG had ascertained that the occurrence/event and other data presently collected to calculate the collision risk would not be sufficient to properly assess the impact on safety produced by the contributing elements associated with the DLM implementation. It was noted that in order to correctly assess the aircraft exposure, sufficient data should be collected (e.g. flight activity or preferably accumulated flight time in relation to the use of data link, AIDC and enhanced automation etc.). Such data could be obtained from the air traffic activity data, as referred to in NAT SPG Conclusion 48/17 [Collection of traffic activity data to improve system performance estimation].

7.1.24 The NAT SPG concurred that additional information would be needed to correctly assess the resources required to collect the additional data envisaged and resolved that the task should be shared between the NAT IMG and the NAT SOG with the NAT SOG taking the lead.

7.1.25 Therefore, the NAT SPG agreed that the following:

NAT SPG Conclusion 50/29 – Collection of Data to Support NAT Data Link Mandate (NAT DLM) Phase 1 Evaluation

That:

a) all NAT ANSPs, as soon as possible but not later than 1 February 2015, include the following data in each occurrence/event report to the NAT CMA:

   i) whether the aircraft involved had an established ADS contract and communication via CPDLC;

   ii) in case of ATC coordination errors, include information whether coordination interface was manual, "semi-automatic" or fully AIDC[1];

b) all occurrence/event reports be retained in the NAT CMA data base[2] and be used in its regular report;

c) data collected be sufficient to assess the aircraft exposure; and

   Note: The amount and type of data required to assess the aircraft exposure will be determined by NAT Scrutiny Group; such data (e.g. flight activity or preferably accumulated flight time in relation to the use of data link, AIDC and enhanced automation, etc.) could be obtained from the air traffic activity (NAT SPG Conclusion 48/17 refers).

d) the NAT IMG review the cost and workload associated with the data collection implementation.

7.1.26 Furthermore, the NAT SPG noted the need to develop a process to use the data, once collected, for estimating the effects of the data associated with each contributing elements (i.e. data link, ATS inter-facility data communication (AIDC) and enhanced automation) and was informed that the NAT SARSIG was tasked to develop such a process.

7.1.27 The NAT SPG also noted that the data collected and reported to the NAT CNSG could be suitable to respond to the NAT SPG Conclusion 49/18 item c) *continued assessment of DLM equipage on the NAT Organised Track System (OTS) and in the ICAO NAT Region*, provided that this data could be further divided into OTS traffic and non-OTS traffic and tasked the NAT CNSG to ensure the appropriate collection of data.

7.1.28 The NAT SPG noted that the NAT IMG/43 agreed not to proceed with any further work on Phase 2B and 2C of the NAT DLM until further assessment. The NAT SPG noted as well that the work required in response to NAT SPG Conclusion 49/18 required considerable resources and, therefore, it was not possible to complete it prior to NAT SPG/50.

Election of Chairman and vice-Chairman

7.1.29 The NAT SPG noted that in accordance with the common approach to the review and the calendar of review/elections of Chairmen and Rapporteurs of the NAT SPG and its Contributory Groups (NAT SPG Conclusion 49/26 and 49/27 refer), the NAT IMG was presented with the candidature of Mr Alastair Muir from the United Kingdom for Chairman of the NAT IMG. Mr Muir was nominated by the NAT SPG Member from the United Kingdom and seconded by the NAT SPG Member from Canada. The NAT IMG unanimously elected Mr Alastair Muir as its new Chairman. It was agreed that the election of the Vice-Chairman would be conducted at the next meeting in view that no nominations had been received at NAT IMG/44.

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[1] *"Semi-automatic" refers to coordination interface that are not fully AIDC compliant (ABI, CPL, CDN, REJ, ACP, MAC messages).*

[2] *If this information existed from past reports, it should be also included in the data base for the conduct of the evaluation of DLM Phase 1.*

7.1.30 The NAT SPG joined the NAT IMG in expressing their sincere appreciation and admiration to Mr Ásgeir Pálsson, who had been Chairman of the NAT IMG since 1996, for his leadership and valuable contributions to the work in the NAT Region.

Future NAT IMG meetings

7.1.31 The NAT SPG agreed that the NAT IMG/45 meeting would take place in the ICAO EUR/NAT Office in Paris, France from 4 to 7 November 2014.

7.1.32 The NAT SPG noted that the NAT IMG agreed that, in order to facilitate Secretariat preparations of the NAT SPG, the venue for the Spring meetings of the NAT IMG would be the ICAO EUR/NAT Office in Paris and the Fall sessions could be hosted outside of the ICAO EUR/NAT Office.

7.1.33 Consequently, the NAT SPG agreed that the NAT IMG/46 meeting would be held at the ICAO EUR/NAT Office in Paris. The NAT SPG noted the kind offers of Ireland and Iceland to host the 47th meeting in Ireland and the 49th meeting in Iceland.

7.2 REPORT OF THE NAT EFG

7.2.1 The NAT SPG was presented with the outcome of the Twenty-fifth meeting of the NAT EFG, held in Lisbon on 13-15 November 2013, and its Twenty-sixth meeting that took place in the EUR/NAT Office of ICAO, form 30 April to 2 May 2014.

Traffic levels/patterns

7.2.2 The NAT SPG noted information on the traffic levels and patterns and that the current decline in aviation operations in the ICAO NAT Region was perceived to be slowing although the number of passengers in the NAT continued its upward trend as a consequence of the average load factor for both the United States and Europe still increasing.

NAT Fees, Cost impact

7.2.3 The NAT SPG also noted that the NAT Fee Analysis Model (NATFAM), developed by the United States, could be used to analyze the impact of changes to charging, and to support the development of financial Key performance indicators (KPIs) for the ICAO NAT Region, as the tool had demonstrated its performances was good for the NAT as a whole, with an average difference of 5% compared to the actual validation data, although there was sometimes a significant difference for data specific to individual ANSPs. Additionally it was possible to create a specific area by defining its boundary in NATFAM, and specifically perform a fee analysis restricted to this user defined area. The NAT SPG was informed that an overall anonymized Cost Impact analysis (specific ANSPs figures and detailed reduced vertical separation minima (RVSM) and admin charges all removed) coming from the NATFAM tool was made available for the benefit of the NAT SPG working structure.

NAT Region Data Link Mandate (DLM) economic analysis

7.2.4 The NAT SPG noted the NAT DLM economic analysis performed at NAT EFG/25 and completed at NAT EFG/26, that estimated the fuel savings of the NAT DLM for OTS and for due-to-climb traffic were substantial, and that an equipage rate of 95% would significantly improve the saving than one of 90%. The NAT SPG noted also that NAT EFG estimated the annual travel time benefits[3], for OTS, although sometime negative, were relatively small compared to fuel savings.

[3] *Travel time benefits relies on a money value being assigned to the difference in travel time (a saving if travel time is reduced)*

Safety value proposition in relation to the NAT DLM

7.2.5 The NAT SPG noted that the NAT EFG performed a safety value proposition in relation to the NAT DLM, first in the NAT DLM airspace, then extended to the non-DLM airspace of the NAT MNPS airspace. It was recalled that the introduction of the NAT DLM reduced the probability of a collision by an estimated 90%, and was essential to meet the Target Level of Safety of 0.05 mid-air collision expected for the period between 2014 and 2028, the risk projection being currently far higher (0.54 mid-air collision for the same period). The NAT SPG noted that the overall social and economic valuation of the NAT DLM was slightly above 1.7 billion USD – with almost equal values from DLM airspace and Non-DLM airspace – which significantly exceeded the NAT DLM investments of $1.1 billion USD by aviation stakeholders. It was also noted that the methodology used was fairly conservative, and that the valuation was likely to be higher.

Business case analyses for planned separation improvements

7.2.6 The NAT SPG was informed on the approach presented to the NAT EFG by Canada and the United Kingdom to develop a cost/benefit analysis (CBA) for Phase 2 of the NAT RLatSM (NAT IMG Decision 40/3, and Task 3 of the *Task List Supporting the Trial Implementation of RLatSM in the ICAO NAT Region* refer) where both States considered that further simulation analysis was not required for the other phases, and their approach was to estimate the increased benefits for the subsequent implementation phases by extrapolating from the benefits values derived in the Phase 1 RLatSM Analysis. The CBA methodology was progressing, and was also being coordinated in the context of the North American / European Air Traffic Flow Management Task Force meetings (NAM/EUR ATFM), to ensure consistency and customer support, and would be ready in time for the NAT SPG to decide proceed with RLatSM Phase 2 trials.

Economic impact of aviation on the NAT Region

7.2.7 NAT SPG noted that NAT EFG/26 received a presentation on the preliminary economic impact of civil aviation on the NAT, which showed that aviation in the ICAO NAT Region amounted to nearly 600 billion USD, which was more than one quarter of the global economic impact of aviation (2,200 billion USD), and supported 4.7 million jobs (close to 10%, of 57 million jobs globally).

Space-Based ADS-B OUT

7.2.8 The NAT SPG noted that NAT EFG/25 received a presentation on the benefit assessment performed to support Canada's plans to implement space based Automatic Dependent Surveillance - Broadcast (ADS-B), where it was estimated that in an environment where RLongSM and RLatSM had already been implemented the benefits to be expected if aircraft were able to climb as a result of ADS-B being used would be 450 litres (855 pounds) in fuel saving for the oceanic portion only, assuming that by 2018 all aircraft would be data link capable and that 90% of them would be equipped with ADS-B. It was estimated that in 2018, at least 282,000 flights in the Gander and Shanwick OCAs could benefit from Space-Based ADS-B, with a potential fuel savings of 127 million litres (240 million pounds).

7.2.9 The NAT SPG noted that Canada informed NAT EFG/26 that space based ADS-B was no longer a proposal and was going to be implemented, and that NAT EFG/26 subsequently extensively discussed a presentation that tried to identify for the ICAO NAT Region the main potential benefits, costs and risks of space based ADS-B, which would support the development of a collaborative business case analysis (BCA) for the ICAO NAT Region.

7.2.10 The NAT SPG noted that space based ADS-B had the potential to eventually significantly change air operations and ATC in the ICAO NAT Region, and supported the need for an initial BCA (NAT EFG Decision 26/1 refers), which would first address the currently planned or foreseen improvements of the NAT, in a time wise manner, and would be reported to NAT SPG/51.

Future NAT EFG meetings

7.2.11 The NAT SPG noted that NAT EFG/27 would take place in Oslo, Norway, from 24 to 26 September 2014, and that NAT EFG/28 was planned to convene in the ICAO EUR/NAT Office in Paris from 28 to 30 April 2015. Both NAT EFG meetings would be held before the NAT IMG meeting of the same period for that year.

7.3 UPDATE TO TORS OF NAT SPG AND ITS SUBGROUPS

Updates to the NAT CMA Terms of Reference

7.3.1 The NAT SPG noted the information regarding the revision of activities and responsibilities of the NAT CMA and the proposal for the revision of its Terms of Reference.

7.3.2 Furthermore, the NAT SPG noted that the conclusion of the revision of the overall workload of the CMA was that current staff resources appeared adequate for most scenarios and the that the opportunity was taken to compare, contrast and align the two sets of Terms of Reference under which the NAT CMA was required to operate.

7.3.3 Taking into account the foregoing, the NAT SPG agreed to the following:

NAT SPG Conclusion 50/30 – NAT CMA Terms of References

That:

a) the proposed amendment of the Terms of References for the NAT CMA be endorsed as presented at **Appendix W**;

b) the NAT *SPG Handbook* (NAT Doc 001) be updated accordingly; and

c) the ICAO Regional Director, Europe and North Atlantic, take appropriate action to publish and promulgate the updated NAT Doc 001.

Updates to the NAT DLMA Terms of Reference and DLMA Funding Mechanism

7.3.4 The NAT SPG was provided with the outcomes of the follow up actions on NAT SPG Conclusion 49/14 that had tasked the NAT IMG to define the NAT Region requirements for data link performance monitoring, and the NAT EFG to study and identify regional funding solutions for the NAT data link monitoring function. It was recalled that the foregoing Conclusion was endorsed in view of anticipated discontinuation of the NAT DLMA funding by the end of 2014.

7.3.5 The NAT SPG noted that the draft terms of reference for the NAT data link performance monitoring entity had been developed addressing two groups of tasks: Priority 1 to ensure uninterrupted functioning of the NAT DLMA within its current scope of work, and Priority 2 to address further evolution of the regional data link monitoring function towards more advanced solutions.

7.3.6 In view of the above, the NAT SPG has endorsed the following:

NAT SPG Conclusion 50/31 – NAT DLMA Terms of Reference and Funding Mechanisms

That:

a) the NAT DLMA ToR as provided in **Appendix X** to this Report be approved; and

b) the NAT IMG examine further improvements of the NAT DLMA for Priority 2 functions, and report the progress to NAT SPG/51

7.3.7 With regards to the funding solution, the NAT SPG was informed by the United States that in an effort to maintain the current DLMA service beyond 2014, the United States had analyzed the technical and financial aspects of continued funding including: security to protect confidentiality; corrective action system for problem reports; retrieving required data; data analysis; data classification; trend identification; coordination with stakeholders; technical report generation; corrective action recommendation; configuration control; and NAT and/Asia and Pacific (APAC) Regions meeting support.

7.3.8 The analysis had determined that for the identified period of performance from 1 January 2015 through 31 December 2019, the updated cost estimate for the joint NAT DLMA/APAC Central Reporting Agency (CRA) service would be $1.2M. This cost and performance period encompassed both NAT DLMA and APAC CRA services to encourage regional harmonization and shared lessons-learned. The DLMA/CRA website would continue to be maintained by Airways New Zealand as a service to the NAT/APAC Regions and the global FANS community.

7.3.9 The NAT SPG noted that the United States efforts to extend the current NAT DLMA funding arrangement were ongoing; funding sources had been identified and interested vendors had responded to a Market Survey that solicited statements of interest from businesses capable of providing the services. The NAT SPG thanked the United States for their efforts and commitment to support this very important work for the benefits of the NAT Region and global community and agreed that NAT SPG Conclusion 49/14 had been closed.

8. ANY OTHER BUSINESS

8.1 NAT SPG POSITION ON THE GEOGRAPHICAL APPLICABILITY OF THE EUROPEAN UNION LAW AND ESPECIALLY THE SINGLE EUROPEAN SKY REGULATIONS

8.1.1 The representative from the United Kingdom presented on behalf of Ireland, Portugal and the United Kingdom, a working paper on the geographical applicability of the European Union Single European Sky Regulations, especially in respect to Functional Airspace Blocks (FABs). It had always been the opinion of the United Kingdom, Ireland and Portugal, and also the ICAO Secretariat, that the geographical applicability of the European Union regulations and consequently the scope of the Single European Sky regulations was limited to the sovereign airspace of EU Member States. Consequently EU regulations would not apply to the airspace in which EU Member States provided services outside their sovereign airspace.

8.1.2 The NAT SPG was informed that at the 52nd meeting of the Single Sky Committee (SSC) in December 2013, the European Commission introduced a new rationale to argue their view that FABs should include the high seas airspace in which EU Member States provide services. This conflicted with the United Kingdom, Ireland and Portugal's understanding and suggested that the European Commission was challenging the current service provision arrangements due to EC's view of the "need" to ensure consistency in application of the SES regulations to the Air Navigation Service Providers and airspace users operating in the ICAO NAT Region. The situation has become more critical as the European Commission had announced their intention to pursue legal infringement proceedings against several EU Member States providing services in high seas airspace under delegation from ICAO.

8.1.3 The State Agreements establishing the FABs between the United Kingdom and Ireland, and between Portugal and Spain respectively included provisions for the creation of a FAB, which did not include the Shanwick nor Santa Maria Flight Information Regions (FIRs). Until the time of the NAT SPG/50 meeting, the European Commission failed to provide a full legal argument for its assertion that the FAB legislation should apply to the Shanwick and Santa Maria FIRs. However, the United Kingdom and Ireland have conducted their own legal analysis and they had responded to the Commission setting out reasons why they disagreed with the European Commission's interpretation of the issue of territorial scope. The States concerned (the United Kingdom, Ireland and Portugal) continued to be of the view that the FIRs in the NAT Region (e.g. Shanwick and, Santa Maria) were Oceanic (high seas) airspace and were outside of the scope of the EU treaties and the SES legislation specifically. In these FIRs the States concerned provided

air navigation services under the ICAO regional air navigation agreements. Despite the States' clearly stated position, the Commission had nonetheless decided to implement formal EC infringement proceedings.

8.1.4 The United Kingdom, Ireland and Portugal continued to strongly believe that mandatory imposition of FAB legislation, or parts thereof, could not be applied without the agreement of ICAO and other States who provided services within or used the North Atlantic airspace. Therefore, the working paper had the aim to improve the understanding and to reach a common position of all NAT Provider States regarding the European Commission's view on the application of the Single European Sky regulations to the airspace within the NAT Region.

8.1.5 The ICAO Regional Director, Europe and North Atlantic, as the Secretary of the NAT SPG presented the following ICAO perspective on airspace over the high seas and FABs:

a) ICAO policy aims to support initiatives which sustain aviation safety and provide for the maximum efficiency at a reasonable cost to the customer/s. In line with that policy, ICAO provides support to the Single European Sky to the extent that the common set of rules and regulations to be implemented in FABs is consistent with the applicable ICAO provisions and policies. It is not the responsibility of ICAO to check these rules a priori although advice may be provided as support for implementation if requested;

b) The establishment of FABs in accordance with the EU Regulations on the Single European Sky is not subject per se to the process for amendment of ANPs. However, should changes to the FIR boundaries or to the facilities and services provided be required at a later stage, such changes might be subject to the Air Navigation Plan (ANP) amendment procedure and should therefore be examined on a case-by-case basis.

c) Pursuant to Article 83 of the ICAO Convention, agreements or arrangements for FABs are subject to registration with ICAO in accordance with the applicable Rules in ICAO Doc 6685.

8.1.6 The ICAO Regional Director based his intervention on the following grounds:

a) As per Articles 1 and 2 of the Chicago Convention, States have sovereignty over the airspace above their territory where air navigation services and facilities are to be provided pursuant to Article 28. For airspace over the high seas, the basic principle of freedom of overflight above the high seas applies (Article 87 of the United Nations Convention on the Law of the Sea). By virtue of Article 12 of the Chicago Convention, the ICAO rules of the air fully apply above the high seas, i.e. Annex 2 – Rules of the Air, as reflected in the Foreword of Annex 2: "Flight over the high seas. It should be noted that the Council resolved, in adopting Annex 2 in April 1948 and Amendment 1 to the said Annex in November 1951, that the Annex constitutes Rules relating to the flight and manoeuvre of aircraft within the meaning of Article 12 of the Convention. Over the high seas, therefore, these rules apply without exception."

b) Regarding ATS management over the high seas, attention is drawn to paragraph 2.1.2 of Annex 11 - Air Traffic Services to the Chicago Convention: "Those portions of the airspace over the high seas or in airspace of undetermined sovereignty where air traffic services will be provided shall be determined on the basis of regional air navigation agreements. A Contracting State having accepted the responsibility to provide air traffic services in such portions of airspace shall thereafter arrange for the services to be established and provided in accordance with the provisions of this Annex."

c) Assembly Resolution A38-12: Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation, APPENDIX G - Delimitation of air

traffic services (ATS) airspaces, states more particularly in resolving clause 5 and declaring clause 7:

-"5. any delegation of responsibility by one State to another or any assignment of responsibility over the high seas shall be limited to technical and operational functions pertaining to the safety and regularity of the air traffic operating in the airspace concerned;"

-"7. the approval by the Council of regional air navigation agreements relating to the provision by a State of air traffic services within airspace over the high seas does not imply recognition of sovereignty of that State over the airspace concerned."

d) Paragraph 1.3.3 of Part I, Section 2, Chapter 1 of the Air Traffic Services Planning Manual (Doc 9426) specifies about the responsibility of a Contracting State accepting the responsibility for providing air traffic services over the high seas: "(…) it should be noted that the assumption of such delegated responsibility by a State, by virtue of a regional air navigation agreement, does not imply that this State is then entitled to impose its specific rules and provisions in such airspace at its own discretion. In fact, conditions of operation therein will be governed by applicable ICAO provisions of a worldwide and supplementary regional nature and specific national provisions may only be applied to the extent that these are essential to permit the State the efficient discharge of the responsibilities it has assumed under the terms of the regional air navigation agreement."

e) As stipulated in the first sentence of Article 82 of the Chicago Convention, the latter treaty has primacy in international law: "The contracting States accept this Convention as abrogating all obligations and understandings between them which are inconsistent with its terms, and undertake not to enter into any such obligations and understandings." In this regard, the European Union's Framework Regulation (549/2004), in its 4th whereas clause, states: "(4) The single European sky initiative should be developed in line with the obligations stemming from the membership of the Community and its Member States of Eurocontrol, and in line with the principles laid down by the 1944 Chicago Convention on International Civil Aviation. Accordingly, ICAO Member States always remain individually responsible at international law for such ATS management as governed by applicable national or regional (EU) legislation which must remain consistent with the Chicago "system"".

8.1.7 The representative from Portugal fully supported the presented working paper and added that Portugal presented its official position at the highest level to the EC. In addition, the European Parliament decided during the first reading of the SES II+ regulation proposals to exclude the oceanic areas from the EC proposal as in their view the oceanic (NAT) airspace was out of the scope of the EU Treaties. In a further meeting of States with the upcoming Italian Presidency of the EU, this position was addressed by several concerned States.

8.1.8 The representative from Norway recalled their choice to include the Bodø Oceanic airspace into the NEFAB on a voluntary basis, as previously presented to NAT EFG and NAT IMG meetings. Due to the specific situation of the provision of ATS services in the Bodø ATCC area (with low traffic and services provided from a combined NAT/EUR sector) with no clear distinction of costs related to NAT and EUR Regions. The Norwegian ANSP (AVINOR) used the same ATM infrastructure and common resources (ATCOs) for providing services in both regions. Norway also had a common charging scheme covering both the Norway FIR and the Bodø Oceanic FIR.

8.1.9 Norway confirmed that the Single European Sky legislation (549/550/551/552-2004) was not applicable to the activity in the NAT region. Accordingly, Norway would adhere strictly to the legal framework developed and agreed with respect to the Bodø Oceanic within the ICAO structure and the NAT Region and ensured that this was properly reflected during the finalization of the legal framework for NEFAB. The Norwegian delegation expressed their support to the presented WP and the NATSPG

confirmed that the voluntary inclusion of Bodo Oceanic FIR with adherence to the existing NAT Region legal framework and fully aligned with ICAO provisions would not contradict the intentions of this WP.

8.1.10 The representative from Iceland supported the WP and noted that the European Commission cannot impose fundamental changes to the legal framework existing in the NAT Region without a due process and coordination amongst States and ICAO. Furthermore it was pointed out that it was important that all States in the NAT Region agree to one position/opinion on this important subject, thus showing a clear sign of solidarity amongst all NAT provider States.

8.1.11 The representative from Canada informed the meeting that they would be in full agreement with the principle of the working paper (WP), but that, due to the political nature of the subject, further discussions would be necessary back at the head office in Canada.

8.1.12 The representative from the United Stated felt that the ANC should address this subject in a similar way with other existing airspace structure issues (e.g. Red Sea Area, Simferopol FIR, South Pacific ADIZ). A NAT SPG position from all States would be seen to enhance the chances that the ANC, when discussing the NAT SPG report would note this issue and react accordingly afterwards.

8.1.13 The representative from Denmark and Norway stated that due to the delay in publishing this working paper before the NAT SPG, it was not possible to coordinate a final position/acknowledgement on this subject. Therefore a 14 day period was requested and the Chairman agreed that the NATSPG/50 report with the conclusion from WP30 would not be released before the end of this extended consultation period.

Note: Norway comments received by ICAO on 10 July 2014 (letter reference 14/01018-5 refers):

> *"Due to practical arrangements such as sector configuration, staffing, equipment and charging, Norway has on a voluntary basis included Bodø Oceanic in the NEFAB. However, Norway will strictly adhere to ICAO Annex 2 and Annex 11 and the legal framework developed and agreed with respect to the Bodø Oceanic within the ICAO structure and the NAT Region. This is also reflected in the NEFAB Agreement.*
>
> *Having regard to the fact that Norway has included the Bodø Oceanic FIR into NEFAB, and that we want to retain the Bodø Oceanic FIR in NEFAB, Norway can support some of the conclusions in working paper 30 of NAT SPG/50, primarily points a), b) and d).*
>
> *As we see it, the inclusion of airspace over the high seas in a FAB does not by itself give rise to a conflict with the Member State's obligations towards ICAO. The FAB arrangements must anyway comply with the requirements of Article 9a of EU Regulation 550/2004 (revised) - in particular paragraph 2(g) "Functional airspace blocks shall, in particular comply with conditions stemming from regional agreements concluded within the ICAO".*

8.1.14 In summary, the representatives from the United Kingdom, Ireland and Portugal explained again that the concerned States had been already for some time in this difficult legal position and that it would now be the right time to send a strong message from the NAT provider States. Avoiding a long legal dispute on this issue would be preferred and therefore the NAT SPG support was welcomed by the States.

8.1.15 Therefore the NAT SPG agreed to the following:

NAT SPG Conclusion 50/32 – Geographical Applicability of the European Union Law and Especially the Single European Sky Regulations

That:

a) the NAT SPG Service Provider States confirm:

i) the airspace in the NAT Region is substantially different to the airspace over Europe;

ii) the existing arrangements in the NAT Region are ensuring a safe, interoperable, sustainable and seamless operation for all users in all phases of flight; and

iii) neither the EU, nor any NAT Provider State (as a contracting Member State of ICAO) has the power to unilateraly extend, without due process, the Single European Sky regulations' applicability to the high seas airspace;

b) the European Commission is reminded that the development and implementation of any binding Single European Sky regulation must be fully consistent with the provisions of the ICAO Convention and specifically with regard to the airspace over the High Seas, with the provision the UN Convention on the Law of the Sea (UNCLOS III);

c) it is therefore inappropriate for the European Commission to pursue legal infringement proceedings against EU Member States who are observing ICAO's responsibility for the NAT airspace and therefore not applying EU regulations to it; and

d) ICAO is invited to further engage the European Commission to help bring this matter to a conclusion.

8.2 FAREWELLS

8.2.1 A fond farewell was bid to Mrs Nikki Goldschmid, the outgoing member of the Secretariat, who would be stepping down in view of her retirement. Nikki had a long experience working for ICAO for the last 35 years and with the NAT SPG since 1989 and her constructive support would be missed.

8.2.2 Another fond farewell was bid to Mr Larry Lachance, the outgoing representative of Canada, who would be stepping down in view of his new responsibilities. Larry had a long experience working with the NAT SPG for the last 6 years and his constructive contribution would be remembered.

8.2.3 The NAT SPG wished Nikki and Larry and their families all the best in their future endeavours.

8.3 NEXT MEETING

8.3.1 The Group agreed to convene its Fifty-First Meeting at the EUR/NAT Office of ICAO in Paris, France, from 22 to 26 June 2015.

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APPENDIX A — LIST OF PARTICIPANTS

(Paragraph 0.5 refers

Chairman

Ásgeir PÁLSSON

CANADA

Larry LACHANCE
Denis GUINDON
Rob THURGUR

DENMARK

Hans HOLST
Peter MAJGÅRD NØRBJERG

FRANCE

Christophe GUILPAIN
Murielle SUFFRIN

ICELAND

Leifur HAKONARSON
Hlín HÓLM
Reynir SIGURDSSON

IRELAND

Peter KEARNEY
Sean PATRICK

NORWAY

Roald Anton LARSEN
Per HARALD PEDERSEN

PORTUGAL

Carlos ALVES

UNITED KINGDOM

Stuart LINDSEY
Alastair MUIR (*NAT IMG Chairman*)
Finlay SMITH

UNITED STATES

Anthony FERRANTE (*NAT SOG Chairman*)
Kevin HAGGERTY
Heather HEMDAL
Dave KNORR
Leslie SMITH

NAT CMA

Beverely ASHTON

IATA

Jeffrey T. MILLER

IBAC

Peter INGLETON

IFALPA

Mike HYNES

ICAO

Luis FONSECA DE ALMEIDA
(ICAO RD, NAT SPG Secretary)
George FIRICAN *(NAT IMG Secretary)*
Celso FIGUEIREDO
Elkhan NAHMADOV
Nicolas RALLO
Rodolphe SALOMON
Nikki GOLDSCHMID
Patricia CAVISTON
Isabelle HOFSTETTER

APPENDIX B — NAT PERFORMANCE BASED COMMUNICATION AND SURVEILLANCE (NAT PBCS) IMPLEMENTATION PLAN V 2014-1 (AS UPDATED AT NAT IMG/44)

(paragraph 3.1.4 refers)

Note 1.— This plan addresses the application of Required Communication Performance (RCP) and Required Surveillance Performance (RSP) associated with the NAT data link operations, including the NAT Data Link Mandate, services in support of RLongSM and RLatSM . Further applications of RCP/RSP to communication and surveillance capability may be considered by NAT SPG in situations where it has been found to be beneficial. At such time, the NAT Performance Based Communication and Surveillance Implementation Plan would be amended. The application of RCP and RSP may include any one or more of the following:

a) Air traffic services (ATS) provision and prescription (in accordance with ICAO Annex 11, paragraph 2.8) in ICAO Doc 7030 and/or Aeronautical Information Publication (or equivalent publication) of a RCP specification for a communication capability and/or a RSP specification for a surveillance capability, either of which is required for the ATS in a particular airspace;

b) Operator authorization (under Air Operator Certificate, special authorization or equivalent, in accordance with ICAO Annex 6) of a communication and/or surveillance capability including aircraft equipage where RCP and/or RSP specifications have been prescribed for the communications and/or surveillance capabilities supporting the ATS provision; and

c) Post-implementation monitoring of actual communication and surveillance performance, including compliance determination against RCP and RSP specifications, as provided in the Global Operational Data Link Document (GOLD), Appendix B and C, respectively, and corrective action, as appropriate, in accordance with ICAO Annex 11, paragraph 2.27.5, and the GOLD, Appendix D.

Note 2.— Consistent with ICAO Doc 4444, Appendix 2, Item 10, a communication or surveillance capability comprises the following elements: a) presence of relevant serviceable equipment on board the aircraft; b) equipment and capabilities commensurate with flight crew qualifications; and c) where applicable, authorization from the appropriate authority.

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
GENERAL PROJECT DEVELOPMENT & MANAGEMENT					
1	**Plan**	NAT IMG/38 and NAT SPG/47	NAT CNSG	Prepare a draft plan outlining the tasks to implement performance based communication and surveillance for consideration by the NAT IMG.	**ONGOING** Periodically reviewed and updated The plan was completed and endorsed by NAT SPG/47 (NAT SPG Conclusion 47/5). The NAT IMG was directed to manage and execute the plan. The NAT CNSG was assigned lead Latest update by NAT SPG Conclusion 49/03
2	**Target dates**	NAT IMG/38 and NAT SPG/47	NAT IMG	Identify Key Target Dates on implementing performance based framework for communication and surveillance and prescribing RCP/RSP specifications to support RLongSM, and RLatSM.	**PENDING** NAT SPG Conclusion 44/11 targets 2015. Target dates for prescribing RCP/RSP specifications are dependent on target dates for associated operations and need to be coincident with or prior to the target dates for RLongSM and RLatSM operational implementation. Pending determination of operational implementation dates for RLongSM and RLatSM.

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
3	**RCP/RSP specifications**	NAT SPG/4~~8~~	NAT SARSIG	a) Confirm applicable performance specifications that will be used for operational implementation of data link services in support of RLongSM. Detail and validate CRM assumptions against actual performance measurements in accordance with GOLD. b) Confirm applicable performance specifications that will be used for operational implementation of data link services in support of RLatSM. Detail and validate CRM assumptions against actual performance measurements in accordance with GOLD.	**COMPLETED** a) For NAT data link operations, CPDLC performance will be measured against RCP 240 and ADS-C performance will be measured against RSP 180. b) RCP 240 and RSP/180 are the candidate specifications to be prescribed for RLatSM and RLongSM operations (subject to validation during the trials and Doc 4444 amendments). Note.— As agreed in the plan, during trials of RLongSM and RLatSM, specifications are not prescribed, but will provide guidelines against which the actual performance is measured. (NAT SPG Conclusion 48/7 and NAT SPG/48 SoD, Appendix I, refers) Additional guidance on RCP/RSP compliance determination are provided by NAT SPG Conclusion 49/05
4	**Workshop(s)**	2012-2013	ICAO/ States	Conduct workshops to raise awareness on performance based communication and surveillance. Establish a planning team to work with ICAO and subject matter experts to develop and present material at the workshop.	**PENDING** One workshop held on 20-22 Feb 2013. More workshops will be convened, if needed Pending availability of additional guidance, e.g operational approvals.

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
DOCUMENTATION					
5	**Operational concepts**	NAT IMG/42and NAT SPG/49	NAT ATMG in coordination with CNSG	a) Update operational concepts for implementation of RLatSM and RLongSM supported by data link to include associated RCP/RSP specifications. b) Develop operational concept (of use), including procedures using CPDLC and ADS C to reduce the number and exposure of operational errors and pilot deviations, regardless of whether or not reduced ADS C based separations are applied. For example, concept of use should detail conformance monitoring, intervention and route re-clearances when using data link. c) Review and comment on material for incorporation in GOLD, as appropriate, NAT Doc 006 and Doc 007.	**COMPLETED** for RLongSM and RLatSM. RLongSM - Concept of Operations – NAT SPG/48 SOD, Appendix F RLongSM Plan – NAT SPG/48 SOD, Appendix F RLongSM Task List – NAT SPG/48 SOD, Appendix F RLatSM - Concept of Operations – NAT SPG/48 SOD, Appendix D. IMG Decision 43/04, Appendix F RLatSM Plan – NAT SPG/49 Conclusion 49/08 Appendix H RLatSM Task List – NAT IMG Decision 43/06, Appendix I Data Link Mandate (for safety) - Data Link Mandate Plan – NAT SUPPs Data Link Mandate Task List – NAT IMG Decision 43/18, Appendix R and S
6	**GOLD amendments**	NAT IMG/42 and NAT SPG/49	GOLD ad-hoc group	Develop GOLD material, as appropriate, in support of reduced separations: - the provisions for data link service (AIC, guidance for AIPs, eligibility requirements etc) - performance specifications - initial qualifications for operations of operators, aircraft and ATC - post implementation monitoring Specific amendments to GOLD are identified in Tasks 5, 7, 8, 9, 14 and 15.	**COMPLETED** Completed with regards to Tasks 5, 7 through 9, 14 and 15.

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
7	**Contingency procedures**	NAT IMG/42 and NAT SPG/49	NAT ATMG/ CNSG	Develop flight crew and controller contingency procedures in the event of service outage, malfunction or failure that would cause performance to degrade below that required by performance specifications. Doc 006 will include reference to GOLD, Chapters 4 and 5. Review and comment on material for incorporation in GOLD, as appropriate, NAT Doc 006 and Doc 007.	**COMPLETED**. No additional/specific material is needed. NAT ATMG/42 report refers.
8	**Restoration of service**	NAT IMG/42 and NAT SPG/49	NAT ATMG/ CNSG	Develop the criteria for resuming data link service, RLatSM, or RLongSM operations after service communication and/or surveillance capabilities are restored to acceptable level of performance. Include in NAT Doc 006. Amendments are needed to ensure that long duration outages/degradations are also considered. Similar provisions should be included in the GOLD and NAT Doc 007. Review and comment on material for incorporation in GOLD, as appropriate, NAT Doc 006 and Doc 007.	**COMPLETED**. No additional/specific material needed. NAT ATMG/42 report refers.

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
9	**Flight plan requirements**	a) NAT IMG/42 and NAT SPG/49 (as part of the NAT SUPPs PfA) and GOLD b) amend Doc 4444 target date - NAT SPG/50	NAT CNSG ICAO (Global)	Draft guidance material for the flight plan to define the descriptors for performance specifications, as appropriate, using the new format planned for 2012 implementation. Include definition of P descriptors in Item 10a and expansion or redefinition of descriptors for ADS-C. Review and comment on material for incorporation in GOLD, as appropriate.	**COMPLETED**. Awaiting Doc 4444 and/or Doc 7030 amendments OPLINKP agreed: Item 10 for CPDLC P1 – RCP400 P2 – RCP240 P3-P9 – [reserved] Item 18, for ADS-C SUR/RSP400 or SUR/RSP180 (OPLINKP/WG/WHL/3 SOD, paragraph 9 refer) Above changes will require change to the GOLD. Above changes will potentially affect ATC automation. See Task 12.

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
10	**PfA for NAT *Regional Supplementary Procedures* (NAT SUPPS)**	NAT IMG/42 and NAT SPG/49	NAT CNSG NAT ATMG	Draft or update PfA (or revise existing drafts) to the *NAT Regional Supplementary Procedures* (SUPPs) (Doc 7030) to prescribe the performance specifications for communication and surveillance to support RLatSM and RLongSM. PfA should include criteria for operator eligibility, aircraft equipage, requirements for flight planning, monitoring, alerting and reporting.	**COMPLETED for RLongSM (**NAT IMG/43 SoD, para. 6.10 & App Q refer) NAT SPG Conclusion 49/06, Appendix F provides a draft developed by the NAT task force. NAT IMG Decision 43/15, appendix Q provides a draft PfA on RLongSM. This timeline for this task is dependent on the timeline for the PfA for RLatSM and RLongSM . (NAT IMG Decision 40/18, NAT IMG/40 SOD, Appendix N, NAT SPG/48 SOD, paragraph 3.1.20, NAT CNSG/7 WP/6 refers) Pending completion of work by ICAO on documents relating to RCP and RSP the NAT is progressing reduced separation trials based on performance in the airspace being monitored against RCP 240 and RSP 180. This task remains open for NAT SPG action in accordance with NAT SPG Conclusion 48/7 (Applicability of communication and surveillance performance specifications)
11	**AIPs and other State documents supporting NAT SUPPS**	Consistent with Task 10	States	Amend AIPs and other State documents to support NAT SUPPs amendment proposed in Task 10.	**PENDING** The work is pending completion of the PfA for the NAT SUPPS in Task 10.
14	**GOLD proposal for RCP/RSP compliance determination**	NAT IMG/42 and NAT SPG/49	CNSG	Develop a guidance material to clarify the interpretation of performance specifications in terms of compliance/non-compliance. Review and comment on material for incorporation in GOLD, as appropriate. See related Task 17.	**COMPLETED**. NAT SPG Conclusion 49/05 refers

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
15	**GOLD proposal for guidelines on operator eligibility**	NAT IMG/42 and NAT SPG/49	OPS/AIR	Provide guidance to State regulators related to aircraft equipage and operator eligibility requirements taking into account the GOLD and performance specifications. Refer to FAA AC 20-140A and AC 120 70B. Other State material may apply. Review and amend GOLD, if required. See related Task 16.	**COMPLETED**
			IMPLEMENTATION ACTIVITIES		
12	**ATC automation changes**	Before the start of operational trials of RLongSM or RLatSM. For FPL descriptors handling-prior to operational implementation	NAT ANSPs	Implement post-implementation monitoring capability in ATC automation. See related Task 17 Implement changes to recognize new flight plan descriptors defined under Task 9. This task should be complete prior to effective date of data link mandate and start of RLatSM or RLongSM trials.	**ONGOING** Data collection function is completed. The status is reported by each NAT ANSP at NAT CNSG meetings. Gander – completed Shanwick – completed Reykjavik - completed Santa Maria – completed New York – completed Bodø – TBD Shannon - 1Q 2013 FPL related functions – pending Doc 7030 and Doc 4444 amendments

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
13	**Confirm actual CPDLC and ADS C performance**	Prior to operational implementation	ANSPs/ DLMA/ CNSG/	Measure actual performance against specifications for feasibility, i.e., ACP, ACTP, PORT, ADS C latency for operators and aircraft types. Collect and analyze data in accordance with GOLD, Appendix D. Provide a clear indication of whether or not RCP 240 is being met in each NAT Oceanic Control Area currently being assessed. Identify, if RCP 240 is not being met, what aspects of the system's performance are not compliant with the RCP 240 specification. Determine the potential effects of those shortcomings on the implementation of reduced separation minima. See related Task 17.	**ONGOING.** Performance reports provided at CNSG, IMG and SPG meetings. Measuring against RSP180 and RCP240 is implemented NAT SPG Conclusion 48/7 and 49/05 refer) NAT SARSIG work completed for the task (*NAT SARSIG/19 SoD*, para **Error! Reference source ot found.** refers)
AIRWORTHINESS AND OPERATIONAL ELIGIBILITY					
16	**State regulations and guidance material**	End of 2014 Prior to operational implementation of RLatSM or RLongSM	SOG/ States/ ANSPs/ Users	Develop or revise State guidance and/or regulations, as necessary. Establish State airworthiness requirements. Establish operational policy/procedures requirements for operational approval. Prepare State inspectors to perform tasks for operational approval. Develop plan to issue operational approval to national operators by [date], to extent possible. Train pilots and, if applicable, dispatchers on RCP/RSP aspects of reduced separation. Develop and distribute operations manuals, pilot bulletins or other appropriate docs containing RCP/RSP policy/procedures. See related Task 15.	**ONGOING** The FAA has published Advisory Circular (AC) 20 140B for design approval of aircraft data link installations and AC 120-70B for operational authorization to use data link services. These ACs are in process of being updated to consider RCP/RSP implementations and to address other issues with data link implementation. Guidance material for operators needs to be developed. Pending the outcome of OPS/AIR Anticipated revised documentation from OPLINK panel and other ICAO groups for late 2014 (also see Task 9)

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
POST IMPLEMENTATION TASKS					
17	**Post-implementation monitoring**		ANSP/s/ DLMA/ CNSG	Post-implementation monitoring, analysis and corrective action per GOLD, Appendix D and any other necessary monitoring tasks. When performance falls below specified levels, operational judgment may be a consideration in determining appropriate actions. See related Tasks 12, 13 and 14.	**ONGOING**

APPENDIX C — DATA LINK PERFORMANCE REPORT BY THE UNITED STATES

(paragraphs 3.2.4 and 3.2.6 refer)

Table 1 provides a summary of the observed ASP for the ADS-C downlink messages within the New York oceanic FIR during the aggregate period from July to December 2013, measured against the RSP180 specifications. The ADS-C downlink latency performance is shown by media type, by ADS-C message type, by station identifier and by operator.

The cells colored in yellow highlight where the performance is not meeting the criteria at the targeted level, below 99.0% for the 99.9% criteria or below 95.0% for the 95.0% criteria.

Table 1. Observed ADS-C performance– New York oceanic FIR

United States FAA Reporting on ADS-C performance				
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**				
Color key: Meets criteria Under criteria		Message Counts	95% RSP180 Benchmark RSP <=90 sec	99.9% RSP180 Benchmark RSP <=180 sec
Media Type				
SATCOM		670,475	**98.45%**	99.47%
VHF		174,554	**99.11%**	99.54%
HF		2,662	**87.19%**	**90.20%**
All		847,691	**98.49%**	99.42%
Message Type				
PER		531,763	**98.83%**	99.48%
WCE		299,262	**97.86%**	99.31%
LDE		16,669	**98.77%**	99.43%
Remote Ground Station (RGS) / Ground Earth Station (GES) (100 messages or more)				
AOW2	SAT	296,467	**98.69%**	99.52%
XXW	SAT	107,735	**97.57%**	99.36%
AOE2	SAT	103,839	**98.93%**	99.48%
AME1	SAT	58,009	**99.10%**	99.63%
XXN	SAT	57,284	**98.91%**	99.68%
XXH	SAT	29,312	**97.13%**	99.27%
BDA	VHF	22,695	**99.47%**	99.63%
BDA1	VHF	21,193	**99.72%**	99.78%
IGW1	SAT	8,957	**94.23%**	**98.10%**
YHZ1	VHF	8,083	**99.55%**	99.81%
YHZ	VHF	7,633	**99.58%**	99.78%
PTP1	VHF	6,963	**99.87%**	**99.97%**
ILM1	VHF	5,389	**98.44%**	99.46%
BOS	VHF	4,595	**99.46%**	99.70%
FPO	VHF	4,449	**98.11%**	99.48%
JFK	VHF	4,009	**99.20%**	99.30%
EUA1	SAT	3,944	**98.86%**	99.54%
SXM	VHF	3,843	**99.77%**	**99.87%**
ANU1	VHF	3,787	**99.23%**	99.76%

United States FAA Reporting on ADS-C performance				
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**				
Color key: Meets criteria / Under criteria		Message Counts	95% RSP180 Benchmark RSP <=90 sec	99.9% RSP180 Benchmark RSP <=180 sec
PLS	VHF	3,691	**98.94%**	99.49%
IG1	SAT	3,392	**94.34%**	**97.64%**
NAS	VHF	3,051	**98.79%**	99.77%
FPO1	VHF	3,014	**98.84%**	99.80%
ACK	VHF	2,627	**98.13%**	99.16%
ACK1	VHF	2,461	**98.82%**	99.47%
SJU1	VHF	2,433	**98.68%**	98.89%
EWR	VHF	2,357	**99.87%**	**100.00%**
BOS1	VHF	2,225	**99.60%**	99.78%
CHS	VHF	1,943	**98.87%**	99.59%
YQY	VHF	1,924	**99.38%**	99.74%
BDA2	VHF	1,861	**99.95%**	**99.95%**
ORF	VHF	1,759	**99.15%**	99.55%
YYT	VHF	1,729	**94.91%**	**97.34%**
MIA	VHF	1,688	**99.70%**	**99.94%**
BOS7	VHF	1,626	**99.69%**	**100.00%**
NAS1	VHF	1,528	**98.63%**	99.21%
BQN	VHF	1,380	**98.70%**	99.64%
XXF	SAT	1,347	**98.96%**	99.48%
PTP	VHF	1,340	**99.70%**	**100.00%**
SJU	VHF	1,306	**99.00%**	99.31%
STX1	VHF	1,282	**99.77%**	99.84%
LGA	VHF	1,243	**100.00%**	**100.00%**
MCO	VHF	1,183	**99.49%**	**100.00%**
FLW1	VHF	1,026	**91.42%**	**92.69%**
FDF1	VHF	975	**100.00%**	**100.00%**
PHF	VHF	958	**97.70%**	99.27%
ISP	VHF	942	**98.94%**	99.68%
ANU	VHF	936	**98.82%**	**100.00%**
BOS4	VHF	913	**100.00%**	**100.00%**
H04	HF	894	**71.48%**	**82.89%**
EWR3	VHF	847	**100.00%**	**100.00%**
JAX	VHF	835	**99.76%**	**100.00%**
PHL	VHF	816	**99.88%**	**100.00%**
ILM	VHF	789	**96.96%**	98.73%
EIS	VHF	776	**99.36%**	**99.87%**
SXM1	VHF	747	**99.73%**	**100.00%**
CHS3	VHF	714	**100.00%**	**100.00%**
SKB	VHF	707	**100.00%**	**100.00%**
SDQ1	VHF	683	**100.00%**	**100.00%**
SDQ	VHF	677	**99.85%**	99.85%

United States FAA Reporting on ADS-C performance				
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**				
Color key: Meets criteria Under criteria		Message Counts	95% RSP180 Benchmark RSP <=90 sec	99.9% RSP180 Benchmark RSP <=180 sec
EWN	VHF	671	**94.63%**	98.66%
BWI	VHF	611	**99.35%**	99.51%
PLS1	VHF	566	**97.35%**	98.94%
MYR	VHF	552	**99.28%**	99.64%
H03	HF	550	**65.82%**	**79.27%**
SBY	VHF	548	**97.26%**	99.09%
DAB	VHF	539	**99.07%**	**100.00%**
MCO7	VHF	538	**98.51%**	99.81%
POP1	VHF	525	**99.24%**	99.24%
BQN1	VHF	514	**98.83%**	99.22%
YHZ2	VHF	512	**99.41%**	99.41%
PBI1	VHF	502	**99.80%**	**100.00%**
YQY1	VHF	435	**99.31%**	99.54%
MIA7	VHF	425	**99.76%**	**100.00%**
JFK7	VHF	425	**99.76%**	**100.00%**
BGI1	VHF	424	**100.00%**	**100.00%**
PSE1	VHF	416	**99.76%**	99.76%
RIC	VHF	408	**99.75%**	99.75%
ORF3	VHF	393	**100.00%**	**100.00%**
JFK8	VHF	382	**100.00%**	**100.00%**
H07	HF	376	**59.84%**	**71.01%**
EWR1	VHF	351	**98.58%**	99.43%
SLU	VHF	340	**100.00%**	**100.00%**
PBI	VHF	330	**98.79%**	**100.00%**
CLT	VHF	299	**100.00%**	**100.00%**
EWR7	VHF	296	**99.32%**	**100.00%**
PDL1	VHF	294	**96.60%**	98.98%
MCO3	VHF	293	**99.66%**	99.66%
GGT	VHF	273	**99.63%**	**100.00%**
BGI	VHF	272	**100.00%**	**100.00%**
MLB	VHF	262	**92.37%**	**97.71%**
MLB1	VHF	255	**97.65%**	**98.04%**
H17	HF	255	**54.90%**	**72.16%**
MCO1	VHF	234	**97.86%**	99.57%
FPOV	VHF	225	**100.00%**	**100.00%**
HPN	VHF	221	**99.10%**	99.55%
PHL7	VHF	218	**99.54%**	**100.00%**
CCS2	VHF	214	**100.00%**	**100.00%**
PWM	VHF	210	**99.52%**	**100.00%**
CHS1	VHF	206	**97.57%**	**100.00%**
ORF7	VHF	204	**100.00%**	**100.00%**

United States FAA Reporting on ADS-C performance				
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**				
Color key: Meets criteria Under criteria		Message Counts	95% RSP180 Benchmark RSP <=90 sec	99.9% RSP180 Benchmark RSP <=180 sec
UVF1	VHF	202	**100.00%**	**100.00%**
HOR	VHF	198	**92.42%**	**95.96%**
STT	VHF	193	**98.96%**	98.96%
OAJ	VHF	189	**97.35%**	**100.00%**
AZS1	VHF	179	**98.88%**	99.44%
AOW3	SAT	177	**97.18%**	**100.00%**
IAD	VHF	176	**100.00%**	**100.00%**
H11	HF	169	**66.86%**	**84.62%**
H13	HF	166	**66.27%**	**80.72%**
H01	HF	166	**67.47%**	**84.34%**
GSO	VHF	158	**100.00%**	**100.00%**
LRM1	VHF	153	**100.00%**	**100.00%**
ORF1	VHF	150	**99.33%**	99.33%
DCA	VHF	143	**100.00%**	**100.00%**
MIA2	VHF	130	**96.92%**	**96.92%**
LGA7	VHF	126	**99.21%**	**100.00%**
MCO5	VHF	123	**100.00%**	**100.00%**
PWM1	VHF	120	**99.17%**	**100.00%**
BOS3	VHF	119	**100.00%**	**100.00%**
CCS	VHF	118	**100.00%**	**100.00%**
FRG	VHF	118	**99.15%**	99.15%
LGA6	VHF	116	**100.00%**	**100.00%**
TPA	VHF	113	**100.00%**	**100.00%**
STT1	VHF	107	**99.07%**	99.07%
HVN	VHF	107	**99.07%**	99.07%
STI1	VHF	104	**100.00%**	**100.00%**
BWI1	VHF	104	**98.08%**	99.04%
MIA3	VHF	104	**100.00%**	**100.00%**
ORH1	VHF	104	**100.00%**	**100.00%**
SAV	VHF	102	**100.00%**	**100.00%**
FLL	VHF	101	**100.00%**	**100.00%**
Operator (100 messages or more)				
DAL		78,694	**98.40%**	99.52%
AFR		78,324	**99.21%**	99.82%
AAL		66,114	**98.17%**	99.49%
IBE		63,707	**99.04%**	99.26%
BAW		48,611	**98.00%**	99.43%
UAL		47,144	**96.15%**	**98.42%**
KLM		46,933	**99.39%**	99.80%
VIR		42,208	**97.39%**	99.33%
DLH		36,912	**99.23%**	99.80%

United States FAA Reporting on ADS-C performance				
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**				
Color key: Meets criteria Under criteria		Message Counts	95% RSP180 Benchmark RSP <=90 sec	99.9% RSP180 Benchmark RSP <=180 sec
AEA		32,597	**98.72%**	99.33%
BER		31,362	**98.99%**	99.44%
FWI		22,041	**99.75%**	99.80%
SAA		21,703	**98.71%**	99.28%
AWE		18,522	**98.61%**	99.68%
AZA		18,256	**99.02%**	99.46%
SWR		16,794	**99.29%**	**99.90%**
TAP		15,371	**99.39%**	99.82%
XLF		14,665	**99.55%**	99.79%
TAM		11,974	**99.80%**	**99.88%**
CRL		11,239	**99.55%**	99.72%
RCH		10,431	**98.75%**	99.41%
AMX		9,604	**98.54%**	99.74%
GLF		7,968	**96.39%**	**98.39%**
TOM		6,932	**97.68%**	98.60%
GTI		5,643	**97.63%**	98.90%
CMV		5,582	**99.75%**	**99.95%**
CLX		5,532	**96.85%**	98.95%
IGA		4,314	**98.01%**	99.47%
TSO		4,287	**96.10%**	**98.30%**
ARA		4,109	**92.38%**	**93.21%**
AFL		3,958	**98.56%**	99.55%
PLM		3,352	**99.76%**	99.82%
THY		3,170	**99.46%**	99.75%
GEC		3,155	**95.37%**	98.86%
EDW		3,087	**99.13%**	99.68%
UAE		3,032	**98.42%**	99.57%
UPS		2,982	**95.98%**	**98.32%**
ETH		2,700	**96.89%**	**98.07%**
ELY		2,509	**97.65%**	99.56%
ORB		2,508	**96.29%**	99.08%
QTR		2,453	**98.90%**	99.80%
ACA		1,924	**97.45%**	99.22%
MIL		1,901	**98.42%**	99.42%
TSC		1,812	**97.02%**	98.79%
SLM		1,341	**100.00%**	**100.00%**
EIN		1,333	**97.52%**	99.62%
ETD		1,323	**99.24%**	**99.92%**
AUA		1,178	**96.94%**	**97.96%**
MSR		1,115	**99.64%**	**100.00%**
SVA		952	**99.37%**	99.79%

United States FAA Reporting on ADS-C performance				
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**				
Color key: Meets criteria Under criteria		**Message Counts**	**95% RSP180 Benchmark** **RSP** **<=90 sec**	**99.9% RSP180 Benchmark** **RSP** **<=180 sec**
OBS		865	**98.61%**	**99.88%**
CUB		814	**99.75%**	99.75%
CMB		801	**96.25%**	**98.00%**
LAE		786	**98.09%**	99.24%
LCO		768	**98.05%**	**99.87%**
NAX		704	**96.59%**	**98.01%**
EVE		654	**99.85%**	**100.00%**
SOO		649	**97.84%**	99.23%
NVR		639	**99.53%**	99.69%
SIA		602	**98.01%**	99.34%
FDX		503	**98.21%**	99.80%
VJT		483	**99.38%**	**100.00%**
AVA		444	**97.97%**	99.32%
FIN		428	**100.00%**	**100.00%**
CKS		355	**96.34%**	98.87%
DHK		323	**96.28%**	**97.52%**
JAI		321	**96.88%**	**100.00%**
LOT		246	**97.56%**	99.19%
BOX		240	**99.17%**	99.58%
XXX		225	**100.00%**	**100.00%**
VCV		205	**99.51%**	**100.00%**
ICV		191	**96.34%**	99.48%
CFG		169	**97.63%**	98.82%
NWS		168	**96.43%**	**100.00%**
NJE		133	**97.74%**	**100.00%**
CNV		131	**97.71%**	**100.00%**
TAY		130	**96.15%**	99.23%
BLX		129	**95.35%**	**97.67%**
SVW		121	**99.17%**	99.17%
CWC		115	**100.00%**	**100.00%**

Table 2 provides a summary of the observed performance for the CPDLC transactions applicable for estimating RCP within the New York oceanic FIR during the aggregate period from July to December 2013, measured against the RCP240 specifications. The RCP performance is shown by media type, by uplink element(s), by station identifier (at least 100 messages) and by operator/aircraft type (at least 100 messages).

The cells colored in yellow highlight where the performance is not meeting the criteria at the targeted level, below 99.0% for the 99.9% criteria or below 95.0% for the 95.0% criteria.

Table 2. Observed RCP performance – New York oceanic FIR

United States FAA Reporting on CPDLC performance							
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**							
Color key: Meets criteria / Under criteria		**Message Counts** *(Wilco Received)*	**95% RCP240 benchmark**		**99.9% RCP240 benchmark**		**PORT**
			ACP <=180 sec	**ACTP <=120 sec** *Network*	**ACP <=210 sec**	**ACTP <=150 sec** *Network*	**<=60 sec** *Pilot Response*
Media Type							
SATCOM		32,164	**99.07%**	**99.68%**	99.39%	99.75%	**96.35%**
VHF		2,870	**99.48%**	**99.90%**	99.65%	**100.00%**	**96.17%**
HF		12					
All		35,324	**99.04%**	**99.66%**	99.37%	99.75%	**96.26%**
Remote Ground Station (RGS) / Ground Earth Station (GES) (100 messages or more)							
AOW2	SAT	14,447	**99.04%**	**99.70%**	99.37%	99.77%	**96.40%**
AOE2	SAT	6,758	**99.45%**	**99.62%**	99.66%	99.67%	**98.05%**
XXW	SAT	3,492	**98.60%**	**99.63%**	99.08%	99.80%	**94.56%**
AME1	SAT	2,721	**99.34%**	**99.78%**	99.52%	99.82%	**96.95%**
XXN	SAT	2,263	**98.98%**	**99.78%**	99.34%	99.78%	**96.02%**
XXH	SAT	1,795	**98.33%**	**99.67%**	98.83%	99.83%	**92.81%**
BDA1	VHF	632	**99.21%**	**100.00%**	99.37%	**100.00%**	**96.84%**
BDA	VHF	586	**99.32%**	**100.00%**	99.66%	**100.00%**	**95.56%**
IGW1	SAT	437	**97.71%**	**98.40%**	98.86%	98.86%	**93.14%**
YHZ	VHF	301	**98.67%**	**100.00%**	98.67%	**100.00%**	**94.02%**
YHZ1	VHF	301	**99.00%**	**100.00%**	99.34%	**100.00%**	**96.01%**
ANU1	VHF	196	**99.49%**	**99.49%**	99.49%	99.49%	**97.45%**
EUA1	SAT	182	**98.90%**	**99.45%**	99.45%	99.45%	**96.15%**
PTP1	VHF	170	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**97.65%**
IG1	SAT	134	**97.76%**	**99.25%**	**98.51%**	99.25%	**92.54%**
ILM1	VHF	123	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**96.75%**
Uplink Messages (UM) (100 messages or more)							
U20 U129		12,729	**99.47%**	**99.69%**	99.64%	99.76%	**97.97%**
U26 U129		11,819	**99.23%**	**99.68%**	99.54%	99.75%	**96.85%**
U106		1,795	**99.16%**	**99.72%**	99.50%	99.83%	**97.88%**
U74		1,117	**98.21%**	**98.84%**	98.66%	99.19%	**95.34%**
U27 U129		987	**98.48%**	**99.90%**	99.19%	**99.90%**	**92.81%**
U26 U129 U166		549	**99.45%**	**99.45%**	99.45%	99.64%	**95.99%**
U28 U129		440	**97.50%**	**99.77%**	**98.18%**	99.77%	**94.09%**
U30		425	**99.29%**	**99.53%**	99.29%	99.53%	**98.82%**
U19		414	**99.03%**	**99.52%**	99.28%	99.52%	**96.86%**
U29 U129		375	**98.13%**	**99.47%**	**98.40%**	99.47%	**94.93%**
U19 U21 U26 U129		372	**98.39%**	**99.46%**	**98.39%**	99.73%	**87.10%**
U23 U129		269	**99.26%**	**100.00%**	99.26%	**100.00%**	**97.77%**
U166 U26 U129		239	**98.33%**	**100.00%**	98.74%	**100.00%**	**92.89%**
U166 U129 U26		232	**99.57%**	**100.00%**	**100.00%**	**100.00%**	**96.55%**
U31		192	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
U111		177	**98.31%**	**100.00%**	**98.31%**	**100.00%**	**95.48%**

United States FAA Reporting on CPDLC performance							
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**							
Color key: Meets criteria / Under criteria		**Message Counts** *(Wilco Received)*	**95% RCP240 benchmark**		**99.9% RCP240 benchmark**		**PORT**
			ACP <=180 sec	**ACTP <=120 sec** *Network*	**ACP <=210 sec**	**ACTP <=150 sec** *Network*	**<=60 sec** *Pilot Response*
U28 U129 U166		177	**97.74%**	**98.87%**	**98.31%**	98.87%	**91.53%**
U113		160	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**99.38%**
U19 U129 U26 U21		119	**99.16%**	**100.00%**	**100.00%**	**100.00%**	**93.28%**
U20 U129 U148		115	**92.17%**	**100.00%**	**95.65%**	**100.00%**	**65.22%**
Aircraft Type (100 messages or more)							
A333		5,868	**99.25%**	**99.76%**	99.51%	99.80%	**96.13%**
A332		5,503	**99.20%**	**99.75%**	99.53%	99.85%	**96.24%**
B772		5,066	**99.23%**	**99.55%**	99.43%	99.66%	**97.71%**
B744		4,310	**98.33%**	**99.68%**	98.93%	99.79%	**93.67%**
B77W		3,214	**99.63%**	**99.78%**	99.78%	**99.88%**	**98.54%**
A343		2,790	**99.25%**	**99.86%**	99.50%	**99.93%**	**96.31%**
A346		2,366	**99.20%**	**99.54%**	99.54%	99.54%	**97.25%**
B763		2,010	**98.51%**	**99.80%**	99.01%	99.80%	**94.53%**
B764		818	**98.90%**	**99.51%**	99.39%	**99.88%**	**95.48%**
B77L		750	**98.93%**	**99.20%**	99.20%	99.33%	**98.00%**
B788		396	**99.75%**	**99.49%**	99.75%	99.49%	**98.48%**
B752		381	**97.11%**	**98.16%**	**98.16%**	**98.16%**	**94.49%**
XXXX		374	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**97.86%**
B748		301	**98.67%**	**99.00%**	98.67%	99.67%	**96.01%**
C17		226	**96.02%**	**100.00%**	**96.90%**	**100.00%**	**87.61%**
A388		161	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**98.76%**
MD11		144	**97.92%**	**97.92%**	98.61%	99.31%	**95.14%**
A345		119	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**97.48%**
GLF5		112	**97.32%**	**98.21%**	**97.32%**	**98.21%**	**88.39%**
Operator (100 messages or more)							
AFR		5,270	**99.39%**	**99.77%**	99.64%	99.83%	**97.31%**
DAL		2,945	**98.68%**	**99.63%**	99.15%	99.76%	**95.45%**
IBE		2,818	**99.36%**	**99.65%**	99.61%	99.65%	**97.87%**
BAW		2,675	**99.03%**	**99.36%**	99.22%	99.51%	**96.93%**
VIR		2,245	**98.31%**	**99.69%**	98.80%	99.82%	**92.65%**
KLM		1,946	**99.23%**	**99.90%**	99.49%	**99.95%**	**96.92%**
AEA		1,928	**99.22%**	**99.59%**	99.53%	99.79%	**96.21%**
FWI		1,640	**99.76%**	**99.82%**	**99.88%**	99.82%	**97.99%**
DLH		1,463	**99.32%**	**99.73%**	99.45%	99.79%	**96.99%**
AAL		1,410	**98.58%**	**99.57%**	99.01%	99.72%	**96.03%**
UAL		1,200	**98.33%**	**98.83%**	98.92%	99.08%	**95.67%**
BER		1,173	**99.32%**	**99.91%**	99.57%	**100.00%**	**96.93%**
AZA		870	**99.20%**	**99.66%**	99.54%	99.66%	**95.75%**
SAA		809	**99.26%**	**99.75%**	99.75%	**99.88%**	**97.03%**
CRL		748	**98.80%**	**99.60%**	99.47%	99.60%	**96.66%**

United States FAA Reporting on CPDLC performance							
Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**							
Color key: Meets criteria / Under criteria		Message Counts *(Wilco Received)*	95% RCP240 benchmark		99.9% RCP240 benchmark		PORT
			ACP <=180 sec	**ACTP <=120 sec** *Network*	**ACP <=210 sec**	**ACTP <=150 sec** *Network*	**<=60 sec** *Pilot Response*
SWR		674	**98.37%**	**99.70%**	99.11%	99.70%	**94.96%**
AWE		509	**99.21%**	**99.61%**	99.61%	99.61%	**93.32%**
TAP		498	**98.80%**	**99.60%**	99.40%	99.80%	**95.98%**
XLF		452	**99.56%**	**100.00%**	99.56%	**100.00%**	**96.02%**
TOM		309	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**99.35%**
AMX		302	**99.67%**	**100.00%**	**100.00%**	**100.00%**	**96.36%**
RCH		287	**96.17%**	**100.00%**	**96.86%**	**100.00%**	**88.15%**
CMV		228	**99.56%**	**100.00%**	**100.00%**	**100.00%**	**95.18%**
GTI		219	**97.72%**	**98.63%**	**97.72%**	99.09%	**94.52%**
PLM		196	**97.96%**	**100.00%**	**97.96%**	**100.00%**	**95.92%**
TAM		195	**99.49%**	**100.00%**	99.49%	**100.00%**	**95.90%**
CLX		192	**97.92%**	**99.48%**	98.96%	99.48%	**92.19%**
GLF		164	**96.95%**	**98.78%**	**96.95%**	98.78%	**89.63%**
TSO		142	**99.30%**	**100.00%**	99.30%	**100.00%**	**93.66%**
EDW		141	**98.58%**	**100.00%**	99.29%	**100.00%**	**95.74%**
ELY		124	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**96.77%**
ARA		117	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**97.44%**

Table 3 contains a summary of the outages reported by the data link service provider (DSP) during the period from July to December 2013 that are relevant to New York oceanic FIR. The outages are grouped according to the combination of satellite system and service provider that were impacted.

Table 3. Observed availability – New York oceanic FIR

United States FAA Reporting of CSP notified and ATSP detected outages

Period: **Jul 01, 2013 to Dec 31, 2013 (6 months)**

CSP Name	Media Type	Number of Unplanned Outages >10 min	Sum of Unplanned Outage (min)
Outages			
Both - Iridium	SAT	1	25
SITA - Iridium	SAT	1	1,135
ARINC	SAT	1	28
	Total (Sum):	**3**	**1,188**

RCP240 Availability criteria

Efficiency at 99.99%		*Max 4 per year*	*Max 52 per year*
Safety at 99.9%		*Max 48 per year*	*Max 520 per year*

Table 4 contains a summary of the conclusions from the analysis results presented in Tables 1, 2 and 3.

Table 4. Analysis conclusions – New York oceanic FIR

Analysis Conclusions **ATSP:** United States - New York oceanic FIR **Period:** July 1, 2013 to December 31, 2013 (6 months)
Media type
• The 95% criteria for RSP180 ASP and RCP240 ACTP, ACP and PORT are met for the aggregate as well as both satellite and VHF media populations. • The 99.9% criteria for RSP180 ASP and RCP240 ACTP, ACP are met at the targeted 99.0% level. • Neither the 95% nor the 99.9% criteria for RSP400 ADS-C are met for HF during this period**.**
Remote Ground Station (RGS) / Ground Earth Station (GES)
• The top three paths, designated by AOW2, XXW and AOE2, were associated with approximately 60% of the ADS-C downlink messages and 70% of the RCP CPDLC transactions. • The observed performance for the messages traveling through these top 3 paths meets the RSP180 95% criteria, and meets the RSP180 99.9% criteria at the targeted level of 99.0%. In addition all 3 meet the 95% criteria for RCP240 ACTP and ACP and meet the RCP240 99.9% criteria for ACTP and ACP at the targeted level of 99.0%. • The performance over the XXW path does not meet the 95% criterion for RCP240 PORT. • The performance for the ADS-C downlink messages that are routed through the paths denoted by IGW1 and IG1, the Iridium satellites with communication service provided by SITA and ARINC, respectively, does not meet the 95% criteria for RSP 180 ADS-C downlink latency during this analysis period. In addition, the performance associated with these paths does not meet the expected RCP240 95% target for PORT.
ADS-C Message Type
• The periodic reports, accounting for 63% of the ADS-C downlink reports and the lateral deviation reports, accounting for 2%, meet the 95% and 99.9% criteria for RSP180 at approximately the same levels. • The waypoint reports account for approximately 35% of the downlink reports and are observed to have slightly lower performance, though the performance targets are still met.
Uplink Message (UM) Elements
• The top 5 CPDLC uplinks/combinations of uplinks account for approximately 80% of the RCP transactions included in the analysis, 3 of which contain a conditional clearance element. • All 5 meet the performance targets for RCP240 ACTP and ACP, but the 95% target for PORT is not met for 1 of the uplinks combinations: UM27/UM129. • Of the 20 uplinks/combinations of uplinks with at least 100 messages during the 6-month period that are shown, 7 do not meet the 95% criteria for PORT and 5 of these 7 contain 3 or more uplinks. • The 2 uplink combinations with the poorest performance overall are UM19/UM21/UM26/UM129 and UM20/UM129/UM148.

Analysis Conclusions **ATSP:** United States - New York oceanic FIR **Period:** July 1, 2013 to December 31, 2013 (6 months)
CSP / Network
Based on the information from the outages reported by the CSP, ARINC and SITA both appear to be meeting the availability in conjunction with Inmarsat for the I-3 and I-4 networks. However, the availability associated with Iridium does not appear to be met at the targeted level.
Pilot / Operator
Of the 80 operators with at least 100 ADS-C downlink reports: • 1 does not meet the RSP180 95% criteria, • 11 do not meet the RSP180 99.9% at the targeted level of 99.0%, • 3 do not meet the RCP240 95% criteria for ACP, • 1 does not meet the RCP240 95% criteria for ACTP, • 9 do not meet the RCP240 99.9% criteria target of 99.0% for ACP, • 2 do not meet the RCP240 99.9% criteria target of 99.0% for ACTP, and • 19 do not meet the RCP240 95% criteria for PORT.

APPENDIX D — DATA LINK PERFORMANCE REPORT BY CANADA

(*paragraphs 3.2.4 and 3.2.6 refer*)

NAV CANADA Reporting on CPDLC performance
Period: **July 01, 2013 to Dec 31, 2013 (6 months)**

Color key:
Meets criteria
Under criteria

			95% RCP 240 benchmark		99.9% RCP 240 benchmark		
		Message Counts *(Wilco Received)*	**ACP <=180 sec**	**ACTP <=120 sec** *Network*	**ACP <=210 sec**	**ACTP <=150 sec** *Network*	**PORT <=60 sec** *Pilot Response*
Media Type							
SATCOM		20,324	**99.19%**	**99.52%**	99.44%	99.70%	**96.57%**
VHF		4,192	**99.64%**	**99.90%**	99.79%	**99.90%**	**97.66%**
SV		254	**97.24%**	**97.64%**	**98.03%**	**98.43%**	**90.94%**
VS		139	**96.40%**	**95.68%**	**97.12%**	**97.84%**	**89.93%**
HS		95	**78.95%**	**85.26%**	**84.21%**	**91.58%**	**67.37%**
HF		52	**65.38%**	**63.46%**	**67.31%**	**69.23%**	**75.00%**
SH		46	**80.43%**	**80.43%**	**89.13%**	**86.96%**	**95.65%**
HV		10	**50.00%**	**60.00%**	**50.00%**	**60.00%**	**50.00%**
VH		2	**100.00%**	**50.00%**	**100.00%**	**100.00%**	**100.00%**
All		25,114	**99.03%**	**99.36%**	99.31%	99.58%	**96.48%**
Remote Ground Station (RGS) / Ground Earth Station (GES)							
AOW2	SATCOM	5,070	**99.35%**	**99.66%**	99.61%	99.84%	**99.84%**
AOE2	SATCOM	4,622	**99.42%**	**99.72%**	99.65%	99.81%	**99.81%**
XXW	SATCOM	3,496	**98.97%**	**99.34%**	99.23%	99.54%	**99.54%**
XXN	SATCOM	3,446	**99.33%**	**99.65%**	99.54%	99.83%	**99.83%**
IGW1	SATCOM	1,097	**96.72%**	**97.63%**	**97.27%**	**98.36%**	**98.36%**
UAK	VHF	1,002	**99.50%**	**99.70%**	99.50%	99.70%	**99.70%**
UAK2	VHF	962	**99.69%**	**99.79%**	99.90%	99.79%	**99.79%**
AME1	SATCOM	851	**98.59%**	**98.71%**	99.29%	99.18%	**99.18%**
UAK1	VHF	785	**99.36%**	**99.75%**	99.87%	99.87%	**99.87%**
IG1	SATCOM	697	**98.13%**	**98.71%**	**98.57%**	99.43%	**99.43%**
EUA1	SATCOM	672	**99.70%**	**99.85%**	99.85%	99.85%	**99.85%**
XXH	SATCOM	389	**97.94%**	**98.97%**	**98.46%**	99.49%	**99.49%**
YYT	VHF	348	**98.85%**	**99.14%**	**98.85%**	99.14%	**99.14%**
KUS	VHF	320	**99.38%**	**99.69%**	99.38%	**100.00%**	**100.00%**
YAY	VHF	251	**99.60%**	**100.00%**	99.60%	**100.00%**	**100.00%**
XXF	SATCOM	215	**100.00%**	**99.53%**	**100.00%**	**100.00%**	**100.00%**
YAY1	VHF	175	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YYT2	VHF	134	**97.01%**	**98.51%**	**97.76%**	**98.51%**	**98.51%**
KEF	VHF	84	**98.81%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YHO	VHF	76	**98.68%**	**100.00%**	**98.68%**	**100.00%**	**100.00%**
YYT1	VHF	67	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YAY2	VHF	65	**98.46%**	**98.46%**	**98.46%**	**98.46%**	**98.46%**
H03	HF	60	**68.33%**	**68.33%**	**75.00%**	**75.00%**	**75.00%**
FLW1	VHF	44	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
AGM2	VHF	34	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YQX	VHF	27	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YHO1	VHF	21	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
HOR	VHF	13	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
AGM1	VHF	11	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
REK2	VHF	11	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YHO2	VHF	11	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
H07	HF	10	**80.00%**	**80.00%**	**90.00%**	**90.00%**	**90.00%**
H04	HF	9	**88.89%**	**77.78%**	**88.89%**	**88.89%**	**88.89%**
REK1	VHF	9	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
PDL1	VHF	8	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
SFJ	VHF	4	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
H13	HF	4	**50.00%**	**25.00%**	**50.00%**	**50.00%**	**50.00%**
H17	HF	4	**25.00%**	**25.00%**	**25.00%**	**25.00%**	**25.00%**
TER	VHF	3	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
AOW3	SATCOM	2	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
H01	HF	1	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
AOE3	SATCOM	1	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YMT1	VHF	1	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YQX1	VHF	1	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
YVO1	VHF	1	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

NAV CANADA Reporting on CPDLC performance
Period: **July 01, 2013 to Dec 31, 2013 (6 months)**

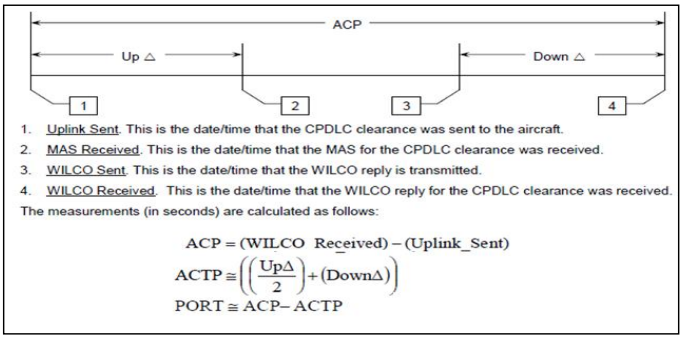
Color key:
Meets criteria
Under criteria

		95% RCP 240 benchmark		99.9% RCP 240 benchmark		
	Message Counts *(Wilco Received)*	**ACP <=180 sec**	**ACTP <=120 sec** *Network*	**ACP <=210 sec**	**ACTP <=150 sec** *Network*	**PORT <=60 sec** *Pilot Response*
Uplink Messages (UM)						
U027 U129	21,013	**99.04%**	**99.36%**	99.31%	99.57%	**96.32%**
U111	1,401	**99.29%**	**99.50%**	99.50%	99.71%	**98.22%**
U113	1,320	**99.02%**	**99.24%**	99.32%	99.55%	**98.41%**
U020 U129	856	**98.71%**	**99.30%**	**98.95%**	99.53%	**96.26%**
U029 U129	305	**98.69%**	**99.34%**	99.67%	**100.00%**	**94.10%**
U111 U027 U129	98	**98.98%**	**98.98%**	**100.00%**	**98.98%**	**90.82%**
U026 U129	46	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
U113 U027 U129	40	**95.00%**	**100.00%**	**95.00%**	**100.00%**	**92.50%**
U023 U129	12	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**91.67%**
U019 U022 U046 U129	10	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
U111 U020 U129	6	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
U113 U020 U129	2	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
U111 U026 U129	1	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
U019 U025 U046 U129	1	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
U019 U025 U046 U129 U169	1	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Negative Value Messages Removed						
U027 U129	245					
U111	28					
U113	27					
U020 U129	14					
U029 U129	5					
U111 U027 U129	1					
Aircraft Type						
A333	3,987	**99.65%**	**99.85%**	99.85%	**99.92%**	**99.92%**
B772	3,690	**99.35%**	**99.57%**	99.62%	99.70%	**99.70%**
A332	3,096	**99.42%**	**99.58%**	99.68%	99.81%	**99.81%**
B744	2,600	**98.88%**	**99.46%**	99.15%	99.54%	**99.54%**
B77W	1,987	**99.50%**	**99.65%**	99.80%	99.75%	**99.75%**
B752	1,854	**96.12%**	**96.71%**	**96.76%**	**97.57%**	**97.57%**
B763	1,731	**98.90%**	**99.54%**	**98.96%**	99.65%	**99.65%**
B764	1,492	**99.26%**	**99.46%**	99.53%	99.87%	**99.87%**
A343	883	**99.66%**	**99.89%**	99.77%	99.89%	**99.89%**
B77L	604	**98.68%**	**98.68%**	99.34%	99.34%	**99.34%**
A388	602	**99.34%**	**99.83%**	99.67%	**100.00%**	**100.00%**
A346	426	**99.53%**	**99.77%**	99.77%	99.77%	**99.77%**
MD11	388	**99.23%**	**99.74%**	99.48%	**100.00%**	**100.00%**
C17	279	**98.21%**	**100.00%**	**98.21%**	**100.00%**	**100.00%**
B788	277	**98.56%**	**98.19%**	**98.56%**	**98.56%**	**98.56%**
B748	244	**98.77%**	**99.18%**	**98.77%**	99.59%	**99.59%**
B773	188	**99.47%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
GLF5	157	**96.18%**	**96.82%**	**96.82%**	**98.09%**	**98.09%**
B762	101	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
GLF4	81	**96.30%**	**97.53%**	**100.00%**	**98.77%**	**98.77%**
B777	60	**98.33%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
GLEX	58	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
A310	47	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
B747	46	**97.83%**	**100.00%**	**97.83%**	**100.00%**	**100.00%**
C5	44	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
B767	35	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
K35R	22	**95.45%**	**100.00%**	**95.45%**	**100.00%**	**100.00%**
B737	19	**100.00%**	**94.74%**	**100.00%**	**100.00%**	**100.00%**
A345	19	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
GLF6	17	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
N772	17	**94.12%**	**100.00%**	**94.12%**	**100.00%**	**100.00%**
GL5T	16	**93.75%**	**100.00%**	**93.75%**	**100.00%**	**100.00%**
B722	6	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
A319	5	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
F900	5	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
FA7X	4	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

NAV CANADA Reporting on CPDLC performance
Period: **July 01, 2013 to Dec 31, 2013 (6 months)**

Color key:
Meets criteria
Under criteria

		95% RCP 240 benchmark		99.9% RCP 240 benchmark		
	Message Counts *(Wilco Received)*	**ACP <=180 sec**	**ACTP <=120 sec** *Network*	**ACP <=210 sec**	**ACTP <=150 sec** *Network*	**PORT <=60 sec** *Pilot Response*
A342	4	100.00%	100.00%	100.00%	100.00%	100.00%
B742	3	100.00%	100.00%	100.00%	100.00%	100.00%
C130	3	100.00%	100.00%	100.00%	100.00%	100.00%
GLF	2	100.00%	100.00%	100.00%	100.00%	100.00%
BLCF	2	100.00%	100.00%	100.00%	100.00%	100.00%
A330	2	100.00%	100.00%	100.00%	100.00%	100.00%
	2	100.00%	100.00%	100.00%	100.00%	100.00%
A772	2	100.00%	100.00%	100.00%	100.00%	100.00%
B738	2	100.00%	100.00%	100.00%	100.00%	100.00%
CL30	1	100.00%	100.00%	100.00%	100.00%	100.00%
CL60	1	100.00%	100.00%	100.00%	100.00%	100.00%
F2TH	1	100.00%	100.00%	100.00%	100.00%	100.00%
B774	1	100.00%	100.00%	100.00%	100.00%	100.00%
C135	1	100.00%	100.00%	100.00%	100.00%	100.00%



1. Uplink Sent. This is the date/time that the CPDLC clearance was sent to the aircraft.
2. MAS Received. This is the date/time that the MAS for the CPDLC clearance was received.
3. WILCO Sent. This is the date/time that the WILCO reply is transmitted.
4. WILCO Received. This is the date/time that the WILCO reply for the CPDLC clearance was received.

The measurements (in seconds) are calculated as follows:

$$ACP = (WILCO\ \ Received) - (Uplink\_Sent)$$

$$ACTP \cong \left(\left(\frac{Up\Delta}{2}\right) + (Down\Delta)\right)$$

$$PORT \cong ACP - ACTP$$

NAV CANADA Reporting on ADS-C performance
Period: **July 01, 2013 to Dec 31, 2013 (6 months)**

Color key: Meets criteria / Under criteria		Message Counts	95% RSP 180 Benchmark RSP <=90 sec	99.9% RSP 180 Benchmark RSP <=180 sec
Media Type				
SATCOM		1,204,070	**98.16%**	99.45%
VHF		465,168	**99.43%**	99.68%
HF		10,125	**58.91%**	**73.68%**
All		1,679,363	**98.28%**	99.36%
Ground Earth Station (GES) providing 1000 or more (representing 98.87%) messages in the period.				
AOW2	SATCOM	289,092	**98.18%**	99.48%
AOE2	SATCOM	271,610	**98.68%**	99.57%
XXW	SATCOM	216,575	**97.86%**	99.52%
XXN	SATCOM	187,653	**98.65%**	99.59%
YYT	VHF	70,118	**99.64%**	99.85%
AME1	SATCOM	58,691	**98.49%**	99.55%
YAY1	VHF	56,877	**99.85%**	**99.91%**
IGW1	SATCOM	52,189	**95.57%**	**98.38%**
EUA1	SATCOM	50,562	**98.62%**	99.45%
UAK2	VHF	43,624	**99.63%**	99.79%
UAK	VHF	42,385	**99.56%**	99.78%
YAY	VHF	33,894	**99.67%**	99.84%
UAK1	VHF	31,832	**99.25%**	99.59%
IG1	SATCOM	31,277	**95.37%**	**98.46%**
XXH	SATCOM	26,453	**98.33%**	99.48%
YYT1	VHF	20,373	**99.59%**	99.89%
YYT2	VHF	20,294	**99.36%**	99.83%
XXF	SATCOM	19,593	**98.69%**	99.44%
YQX	VHF	17,795	**99.89%**	**99.95%**
KUS	VHF	15,141	**99.48%**	99.76%
KEF	VHF	14,237	**99.00%**	99.45%
YHO	VHF	12,790	**99.37%**	99.58%
YHO1	VHF	11,799	**99.58%**	99.75%
YAY2	VHF	10,339	**99.56%**	99.81%
BLY	VHF	9,163	**99.47%**	99.64%
REK2	VHF	7,224	**98.44%**	99.02%
H03	HF	5,810	**61.38%**	**75.63%**
BYT	VHF	5,161	**99.26%**	99.52%
VEY	VHF	3,203	**99.16%**	99.47%
FLW1	VHF	2,847	**97.23%**	99.09%
REK1	VHF	2,602	**98.96%**	99.39%
BRR1	VHF	2,586	**98.45%**	**98.65%**
AGM1	VHF	2,260	**98.72%**	99.29%
AGM2	VHF	2,067	**96.32%**	**98.36%**
SYY	VHF	1,939	**99.85%**	**99.95%**
YHO2	VHF	1,910	**98.17%**	**98.95%**
YQX1	VHF	1,827	**99.95%**	**99.95%**
SFJ	VHF	1,648	**99.03%**	99.45%
H07	HF	1,489	**59.91%**	**74.68%**
H17	HF	1,295	**47.57%**	**64.86%**
YFB1	VHF	1,294	**99.54%**	99.69%
TRE	VHF	1,021	**98.82%**	99.02%

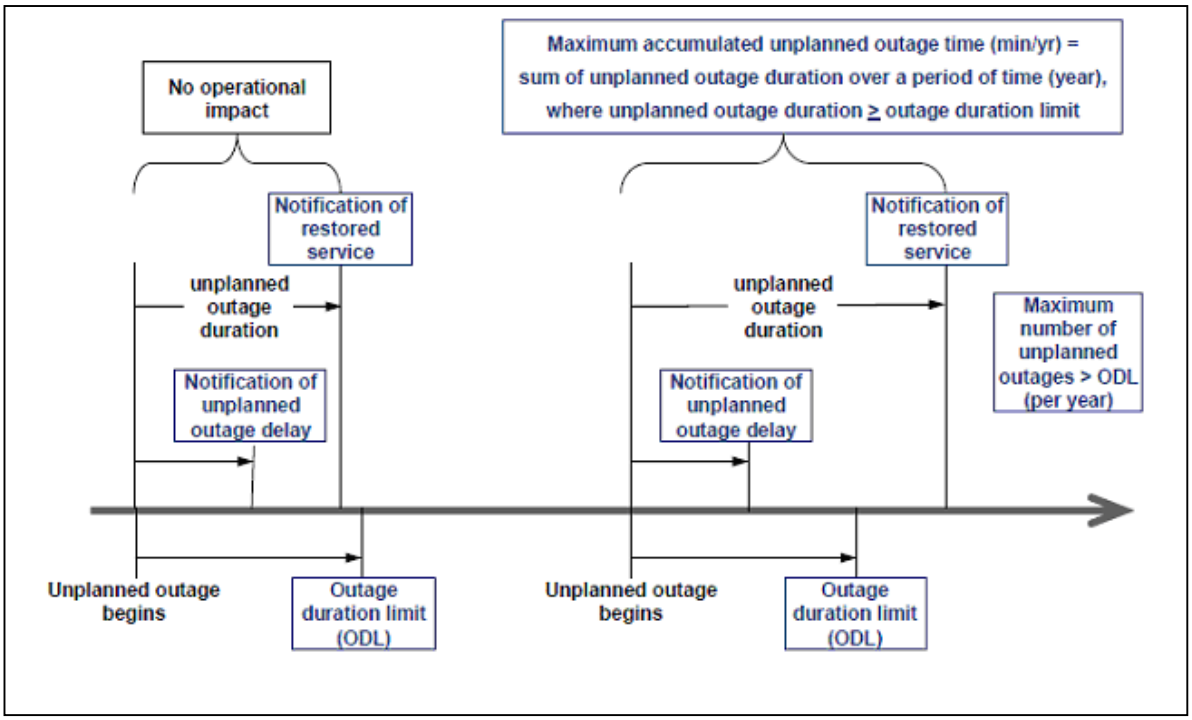
NAV CANADA Reporting of CSP notified and ATSP detected outages

Period: **July 01, 2013 to Dec 31, 2013 (6 months)**

CSP Name	Media Type	Number of Unplanned Outages >10 min	Sum of Unplanned Outage (min)
Outages			
AIRINC	SATCOM	2	53
	Total (Sum):	**2**	**53**

RCP 240 Availability criteria

Efficiency at 99.99%	*Max 4 per year*	*Max 52 per year*
Safety at 99.9%	*Max 48 per year*	*Max 520 per year*



Conclusions & Actions

Media type

SATCOM, VHF and HF media types are not within the 99.9% RCP 240 and 99.9% RSP 180 benchmark

VHF and SATCOM continue to exceed the 95% RCP 240 and 95% RSP 180 benchmarks.

SATCOM traffic (message counts) represented 80% of the CPDLC sample and 71% of the ADS-C sample for the period.

Mixed Mode media types (SV, VS, HS, SH, HV,VH) traffic (message counts) represented 2.2% of the total for the period.

Remote Ground Station (RGS) / Ground Earth Station (GES)

CPDLC

Performance of CPDLC data identified that the top 20 (based on message counts) Ground Earth Stations (GES) identified provided 98.32% of the messages in the period.

A review of CPDLC performance by the top 20 GES shows that all Stations meet the 95% RCP 240 benchmark and 3 of the 20 meet the 99.9% RCP 240 Benchmark.

When reviewing the GES not within 99.9% RCP 240;

- The following 3 GES were identified as having the highest number of messages that did not meet 99.9% RCP 240.

GES	Number of Messages that did not meet benchmark.	% of Messages that did not meet benchmark.	Comments:
IGW1	30	2.7%	SATCOM
XXW	27	0.8%	SATCOM
AOW2	10	0.4%	SATCOM

- The following 3 GES were identified as having the highest percentage of messages that did not meet 99.9% RCP 240.

GES	Number of Messages that did not meet benchmark.	% of Messages that did not meet benchmark.	Comments:
H17	3	75.0%	HF
H13	2	50.0%	HF
H03	15	25.0%	HF

ADS_C

Performance of ADS-C surveillance data identified 42 GES providing 1000 or more messages in the period. These GES represented 98.87% of the messages in the period. A review of ADS-C performance by the top 20 (based on message counts) GES identified that all meet the 95% RSP 180 standard. 2 (YAY1 and YQX) of the 20 showed performance at the 99.9% RSP 180 standard.

When reviewing the GES not within RSP 180;

- The following 3 GES were identified as having the highest number of messages that did not meet RSP 180

GES	Number of Messages that did not meet benchmark.	% of Messages that did not meet benchmark.	Comments:
AOW2	1501	0.5%	SATCOM
H03	1416	24.4%	HF
AOE2	1171	0.4%	SATCOM

- The following 3 GES were identified as having the highest percentage of messages that did not meet RSP 180.

GES	Number of Messages that did not meet benchmark.	% of Messages that did not meet benchmark.	Comments:
SNN2	17	73.9%	VHF
TTN1	4	66.7%	VHF
LCG	5	50.0%	VHF

Uplink Message (UM) Elements

As per the GOLD and CNS agreement, Uplink Messages Elements 79-84 inclusive, 91, 92 116-123 inclusive and 169 have been filtered out of all the CPDLC performance measurements analysis.

15 Uplink messages were used in assessing RCP. 9 meet the 99.9% RCP 240 benchmark.

When reviewing the Uplink Messages not within RCP 240;

- The following 3 UM were identified as having the highest number of messages that did not meet 99.9% RCP 240.

UM	Number of Messages that did not meet benchmark.	% of Messages that did not meet benchmark.	Comments:
U027 U129	144	0.7%	CLIMB TO REACH [level] BY [position] REPORT MAINTAINING [level]
U113	9	0.7%	REDUCE SPEED TO [speed]
U020 U129	9	1.1%	CLIMB TO [level] REPORT MAINTAINING [level]

- The following 3 UM were identified as having the highest percentage of messages that did not meet 99.9% RCP 240.

UM	Number of Messages that did not meet benchmark.	% of Messages that did not meet benchmark.	Comments:
U019 U022 U046 U129 U169	1	100.0%	MAINTAIN [level] AT [time] CLIMB TO [level] CROSS [position] AT [level] REPORT MAINTAINING [level] [free text]
U113 U027 U129	2	5.0%	REDUCE SPEED TO [speed] CLIMB TO REACH [level] BY [position] REPORT MAINTAINING [level]
U020 U129	9	1.1%	CLIMB TO [level] REPORT MAINTAINING [level]

ATSP

Analysis in the Gander OCA shows that data link message performance measures positively toward the RCP 240 standard, as outlined in the GOLD. The 95% RCP 240 benchmark is achievable; however the 99.9% RCP 240 benchmark remains a goal that is not always met.

The analysis of CPDLC Bilateral Communication Performance for RCP 240 (Pilot response and network travel time included) for the period ending Dec 31, 2013 provided a result of 99.3%.

The analysis of ADS-C Surveillance Data Performance range for RSP 180 for the period ending Dec 31, 2013 provided results of 99.4%.

CSP / Network

When reviewing CPDLC performance measurements of those Uplink Message Elements that did not meet the RCP 240 benchmarks,

- U027 U129, most frequent message sent
- U111 2nd most frequent message sent and
- U113 3rd most frequent message sent

all failed to meet the 99.9% RCP 240 (ACTP<=150 (Network)) benchmark.

A review of Mixed Mode media types (SV, VS, HS, SH, HV,VH) ATCP<=150 sec (Network) values ranged from 60.0% to 98.43% not meeting the 99.9% RCP 240 (ACTP<=150 (Network)) benchmark .
VHF met the 99.9% RCP 240 (ACTP<=150 (Network)) benchmark and SATCOM showed 99.7%.

A review of the top 20 GES showed 14 of the 20 did not meet the 99.9% RCP 240 (ACTP<=150 (Network)) benchmark.

Pilot / Aircraft type

When reviewing CPDLC performance measurements by aircraft type, 50 Aircraft types were identified for the period.

N772 and GLF6 were the only 2 aircraft types identified with not meeting the 95% RCP 240 Benchmark.

21 of the 50 aircraft types (representing 81% of the message counts) where identified as not meeting the 99.9% RCP 240 benchmark.

APPENDIX E — DATA LINK PERFORMANCE REPORT BY ICELAND CPDLC PERFORMANCE

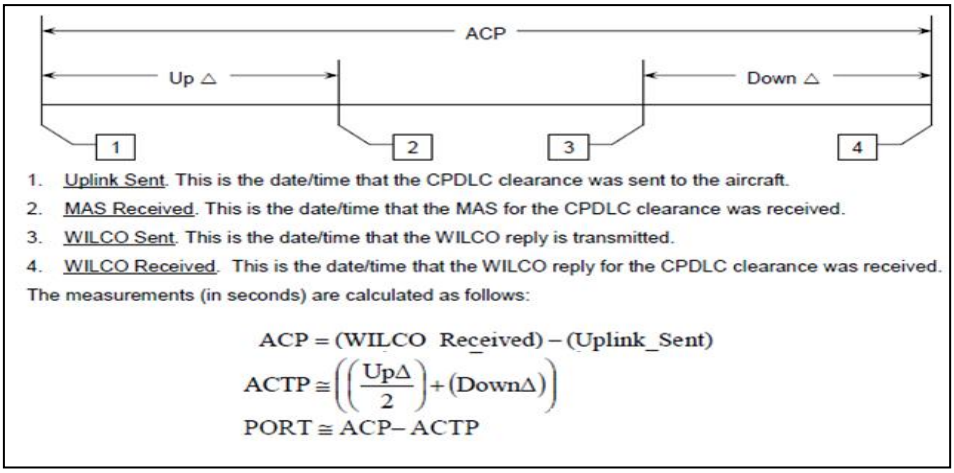
(*paragraphs 3.2.4 and 3.2.6 refer*)

Iceland Reporting on CPDLC performance
Period: **Jan 01, 2013 to June 31, 2013 (6 months)**

Color key:
Meets criteria
Under 90%

			95% RCP 240 benchmark		99.9% RCP 240 benchmark		
		Message Counts *(Wilco Received)*	**ACP <=180 sec**	**ACTP <=120 sec** *Network*	**ACP <=210 sec**	**ACTP <=150 sec** *Network*	**PORT <=60 sec** *Pilot Response*
Media Type							
SATCOM		12 131	**98.56%**	98.69%	98.99%	99.20%	94.56%
VHF		13 169	**98.94%**	99.82%	99.11%	99.91%	96.09%
HF		18	**66.67%**	**66.70%**	**77.78%**	**72.22%**	**77.78%**
HF+SATCOM		31	**41.94%**	**58.06%**	**61.29%**	**75.00%**	**38.71%**
SATCOM+HF		14	**85.71%**	**85.71%**	**85.71%**	93.33%	92.86%
SAT+VHF		1 464	**96.58%**	98.02%	97.34%	98.77%	90.78%
VHF+SAT		764	**98.17%**	97.51%	98.43%	99.35%	94.24%
HF+VHF		11	**72.73%**	**81.82%**	**81.82%**	**81.82%**	**45.45%**
VHF+HF		6	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
All		27 608	**98.53%**	99.08%	98.87%	99.46%	94.99%
Remote Ground Station (RGS) / Ground Earth Station (GES)							
AOE2	VHF	5 279	**98.99%**	98.22%	98.77%	98.69%	95.19%
KEF	VHF	2 381	**98.95%**	99.75%	99.20%	99.96%	95.21%
XXW	SAT	2 372	**98.61%**	99.37%	99.86%	99.62%	94.06%
REK2	VHF	2 334	**98.50%**	99.74%	98.67%	99.91%	95.76%
XXN	SAT	2 084	**98.22%**	98.66%	98.85%	99.62%	92.13%
AOW2		1 892	**98.36%**	98.94%	99.00%	99.37%	93.97%
REK1	VHF	1 556	**98.71%**	99.81%	98.91%	99.94%	95.63%
FAE	VHF	1 511	**98.81%**	99.93%	98.87%	99.93%	96.23%
EUA1	VHF	1 075	**98.79%**	99.16%	99.07%	99.35%	95.35%
VEY	VHF	1 024	**99.12%**	99.90%	99.22%	**100.00%**	97.17%
KUS	VHF	750	**99.80%**	99.80%	99.07%	**100.00%**	93.73%
FAE7	VHF	718	**99.86%**	99.86%	99.86%	99.86%	98.19%
FAE1	VHF	589	**98.30%**	98.64%	98.47%	98.98%	96.10%
LSI1	VHF	547	**99.63%**	99.82%	99.63%	**100.00%**	98.17%
AGM1	VHF	417	**99.04%**	99.76%	99.04%	**100.00%**	96.16%
SFJ	VHF	324	**98.77%**	99.69%	98.77%	99.69%	94.44%
AME1	VHF	313	**98.72%**	99.36%	99.04%	**100.00%**	95.85%
AGM2	VHF	273	**98.53%**	98.59%	98.53%	99.27%	96.70%
SYY	VHF	268	**98.88%**	99.63%	99.63%	**100.00%**	97.76%
XXF	SAT	228	**96.93%**	97.37%	97.37%	98.68%	93.42%
SYY1	VHF	227	**99.56%**	**100.00%**	**100.00%**	**100.00%**	96.04%
LSI1	VHF	201	**99.50%**	**100.00%**	99.50%	**100.00%**	97.01%
IGW1	VHF	195	**95.38%**	93.33%	96.92%	95.90%	**86.15%**
AES1	VHF	157	**98.09%**	99.36%	99.36%	99.36%	91.72%
LSI7	VHF	139	**100.00%**	**100.00%**	**100.00%**	**100.00%**	98.56%
BGO	VHF	122	**99.18%**	**100.00%**	99.18%	**100.00%**	95.90%

Uplink Messages (UM)						
U117	15 651	**98.48%**	**98.83%**	**98.86%**	**99.27%**	**95.32%**
U20 U128 U129	6 639	**98.99%**	**99.32%**	**99.25%**	**99.59%**	**96.50%**
U20 U46 U128 U129	993	**97.89%**	**99.60%**	**98.49%**	**99.80%**	91.26%
U123	574	**98.60%**	**99.30%**	**98.78%**	**99.66%**	**95.99%**
U106	478	**98.75%**	**99.79%**	**98.96%**	**100.00%**	**97.49%**
U118	425	**98.82%**	**99.77%**	**98.82%**	**99.77%**	**95.77%**
U169 U20 U128 U129	324	**99.69%**	**99.69%**	**100.00%**	**100.00%**	**96.91%**
U20 U128 U129 (with additional D3)	230	**97.83%**	**99.56%**	**98.70%**	**100.00%**	94.78%
U19 U22 U128 U129	193	**100.00%**	**99.48%**	**100.00%**	**99.48%**	**82.38%**
U20 U128 U128 (with additional D9)	162	**99.39%**	**100.00%**	**99.39%**	**100.00%**	94.45%
U164 U20 U46 U128 U129	159	**98.11%**	**98.74%**	**98.74%**	**100.00%**	**86.16%**
U166 U20 U128 U129	134	**96.27%**	**98.50%**	**98.51%**	**99.25%**	**95.52%**
U166 U20 U46 U128 U129	130	93.85%	**98.46%**	93.85%	**98.46%**	**81.54%**
U20 U128 U129 (additional DM6)	120	**97.50%**	**97.50%**	**97.50%**	**99.17%**	**95.83%**
U154 U117	118	**100.00%**	**99.15%**	**100.00%**	**99.15%**	98.31%
Negative Value Messages Removed						
U117	138					
U20 U128 U129	24					
U20 U46 U128 U129	2					
U123	3					
U106	1					
U118	1					
U20 U128 U129 (with additional D3)	3					
U164 U20 U46 U128 U129	1					
U166 U20 U128 U129	4					
U154 U117	1					
Aircraft Type						
A333	3 848	**99.04%**	99.33%	99.35%	99.56%	95.56%
B77W	3 528	**99.09%**	98.90%	99.26%	99.27%	97.08%
B763	3 411	**97.65%**	98.87%	98.30%	99.54%	92.88%
B744	3 276	**97.71%**	98.79%	98.11%	99.24%	92.03%
B772	2 939	**98.37%**	99.06%	98.81%	99.53%	95.75%
A343	2 378	**99.03%**	99.75%	99.16%	99.83%	95.71%
A332	2 378	**98.66%**	99.88%	99.04%	99.36%	96.20%
B77L	1 668	**99.16%**	98.87%	99.28%	99.23%	96.16%
A388	886	**99.66%**	99.66%	99.66%	99.78%	97.18%
A346	582	**98.45%**	99.49%	98.97%	99.66%	95.02%
B748	568	**98.42%**	98.95%	98.77%	99.30%	94.89%
B752	501	**97.21%**	98.82%	97.60%	99.01%	91.82%
B773	414	**99.28%**	99.76%	99.76%	99.76%	95.17%
B737	405	**99.26%**	99.51%	99.26%	99.75%	95.31%
B788	365	**98.63%**	98.64%	98.90%	98.91%	96.16%
B764	327	**97.86%**	98.47%	97.86%	99.08%	94.19%
MD11	304	**97.04%**	96.45%	97.70%	98.39%	91.78%



1. Uplink Sent. This is the date/time that the CPDLC clearance was sent to the aircraft.
2. MAS Received. This is the date/time that the MAS for the CPDLC clearance was received.
3. WILCO Sent. This is the date/time that the WILCO reply is transmitted.
4. WILCO Received. This is the date/time that the WILCO reply for the CPDLC clearance was received.

The measurements (in seconds) are calculated as follows:

$$ACP = (WILCO\ \ Received) - (Uplink\_Sent)$$

$$ACTP \cong \left(\left(\frac{Up\Delta}{2}\right) + (Down\Delta)\right)$$

$$PORT \cong ACP - ACTP$$

Iceland Reporting on ADS-C performance

Period: **Jan 01, 2013 to June 31, 2013 (6 months)**

Color key: Meets criteria / Under 90%	Message Counts	95% RSP 180 Benchmark RSP <=90 sec	99.9% RSP 180 Benchmark RSP <=180 sec
Media Type			
SATCOM	258 33	**96.85%**	98.78%
VHF	222 602	**99.33%**	99.57%
HF	3 676	**53.16%**	**65.91%**
All	484 610	**97.66%**	98.89%
Ground Earth Station (GES) providing 1000 or more (98.87%) messages in the period.			
AOE2	72 097	**96.63%**	98.98%
XXW	56 023	**97.17%**	98.95%
AOW2	53 728	**97.19%**	98.92%
XXN	38 381	**97.05%**	98.74%
REK2	33 823	**99.55%**	99.70%
KEF	32 734	**99.65%**	99.78%
REK1	25 678	**99.41%**	99.59%
KUS	23 103	**99.40%**	99.71%
EUA1	14 874	**97.28%**	98.89%
AME1	13 586	**97.63%**	98.82%
LSI1	11 206	**99.60%**	99.71%
SFJ	10 568	**99.45%**	99.66%
FAE	10 543	**99.40%**	99.69%
AGM1	8 963	**98.65%**	99.11%
VEY	8 320	**99.51%**	99.60%
FAE7	6 856	**99.87%**	99.88%
FAE1	6 413	**98.38%**	99.00%
AGM2	6 268	**97.88%**	98.92%
LSI7	5 022	**99.90%**	**99.90%**
SYY1	4 410	**99.37%**	99.64%

AES1	4 172	**99.02%**	99.38%
SYY1	3 587	**99.50%**	99.72%
LSI	3 574	**99.75%**	99.78%
IGW1	2 998	92.16%	97.46%
BGO	2 997	**99.77%**	99.77%
XXF	2 783	**96.48%**	97.76%
UAK1	2 725	**95.93%**	97.76%
XXH	2 325	**97.63%**	98.88%
H03	1 972	**55.12%**	**67.36%**
AES1	1 883	**99.31%**	99.47%
SVG	1 206	**99.75%**	99.75%
BRR1	896	**98.88%**	99.33%
IG1	796	**89.07%**	95.98%
UAK2	785	**98.73%**	98.85%
SVG7	714	**100.00%**	**100.00%**
WRY7	604	**99.70%**	99.70%
H09	646	**52.32%**	**64.86%**
WRY1	604	**99.50%**	99.50%
SVG1	517	**99.23%**	99.23%
XXI	506	**57.51%**	**65.02%**
H07	501	**66.67%**	**81.04%**
BRR7	398	**100.00%**	**100.00%**
TRE	386	**99.74%**	**100.00%**
KEFV	355	**100.00%**	**100.00%**
YFB1	288	**89.58%**	89.93%
BGO1	258	**99.61%**	99.61%
ABZ7	249	**100.00%**	**100.00%**
ABZ1	215	**99.53%**	99.53%
KSU1	209	**99.04%**	99.04%
LYR1	181	**99.45%**	**100.00%**
SYY7	207	**99.52%**	99.52%
LSI2	181	**99.45%**	**100.00%**
HAU	160	**99.37%**	99.38%
LYR	151	91.39%	91.39%
BOO1	141	**99.29%**	**100.00%**
YFB1	135	93.33%	94.07%
H14	123	**25.20%**	**30.08%**
IOR2	110	**35.45%**	**40.91%**
H13	100	**40.00%**	**55.00%**

APPENDIX F — DATA LINK PERFORMANCE REPORT BY PORTUGAL

(*paragraphs 3.2.4 and 3.2.6 refer*)

This Appendix is provided in the following pages

APPENDIX G — DATA LINK PERFORMANCE REPORT BY THE UNITED KINGDOM

(*paragraphs 3.2.4 and 3.2.6 refer*)

This Appendix is provided in the following pages

APPENDIX H — DATA LINK PERFORMANCE REPORT BY IRELAND

(*paragraphs 3.2.4 and 3.2.6 refer*)

This Appendix is provided in the following pages

APPENDIX I — SPLIT WESTBOUND OTS PROCEDURE

(*paragraph 4.2.5 refers*)

a) When a "split" track structure is being designed for the day OTS and Gander Area Control Centre (ACC) determines that the eastbound KJFK/EGLL minimum time track (MTT) falls within the structure, provision shall be made for a minimum of two adjacent exit points and landfalls to take account of the eastbound traffic demand.

b) Where a) requires moving the westbound OTS to a less optimum position, it can be agreed that one exit point and landfall will be left vacant and that opposite direction levels can be left off an adjacent track separated by one degree, to take account of eastbound traffic.

c) Where agreement has been reached to leave one exit point and landfall vacant and leave opposite direction levels off an adjacent track, the OTS shall be designed so that the adjacent tracks diverge to a minimum of three degrees apart west of the first significant point west of the OCA boundary, and to maintain at least three degrees apart to landfall.

———————————

APPENDIX J — DRAFT 2013 ANNUAL SAFETY REPORT & SAFETY PRIORITIES AND TARGETS SUMMARY

(*paragraph 6.1.4 refers*)

This Appendix is provided separately

APPENDIX K — NAT CONSOLIDATED REPORTING RESPONSIBILITIES HANDBOOK

(*paragraph 6.4.4 refers*)

Foreword

This document is for guidance only. Regulatory material relating to North Atlantic Region (NAT) operations is contained in relevant *ICAO Annexes*, *PANS-ATM (ICAO Doc 4444)*, *Regional Supplementary Procedures (ICAO Doc 7030)*, State *Aeronautical Information Publications (AIPs)* and current Notices to Airmen (NOTAMs), which should be read in conjunction with the material contained in this document.

This document is primarily for the information of the ICAO North Atlantic Region States and their air navigation service providers (ANSPs). It compiles relevant reporting requirements and guidance in response to the NAT Systems Planning Group (NAT SPG), **Conclusion 48/20 - Consolidated ICAO NAT Region safety occurrence reporting requirements document,** which directed the NAT Safety Oversight Group (NAT SOG) to develop a document in which all region-specific safety occurrence reporting requirements are consolidated for presentation to NAT SPG/49. The NAT SPG agreed the document would cover not only incidents, errors and data, but take account of the relationship between the NAT Data Link Monitoring Agency (NAT DLMA) and the NAT CMA.

Edited by European and North Atlantic Office of ICAO
3 bis, Villa Emile Bergerat
92522 Neuilly-sur-Seine Cedex – France
Tel: +33 1 4641 8585
Fax : +33 1 4641 8500
Email: icaoeurnat@paris.icao.int

This manual has been produced on behalf of the NAT SPG; a North Atlantic regional planning body established under the auspices of the International Civil Aviation Organization (ICAO). This group is responsible for developing operational requirements, specifying the necessary services and facilities, and defining the aircraft and operator approval standards employed in the NAT Region. Further information on the functions and working methods of the NAT SPG, together with the NAT Regional Safety Policy Statement, are contained in the NAT SPG Handbook, which is available from the ICAO website: under "Regional Offices," "Paris," the location of the European and North Atlantic Regional Office.

This document can be accessed and downloaded from the ICAO website http://portal.icao.int/ as described in the paragraph above. This website will also include any noted post publication errata (changes) or addenda (additions) to the current edition. The document will be reissued on a recurrent basis as needed.

To assist with the editing of this manual and to ensure the currency and accuracy of future editions it would be appreciated if readers would submit their comments and/or suggestions for possible amendments and/or /additions to the ICAO EUR/NAT Office at the email address: icaoeurnat@paris.icao.int.

Annotated Bibliography

This document compiles relevant region-specific reporting requirements and guidance related to events or occurrences within the ICAO NAT Region. Below is an annotated bibliography that summarizes the reporting requirements used to develop this manual.

-**Annex 19, *Safety Management Systems,*** outlines the Standards and Recommended Practices
(SARPs) are applicable to safety management functions related to, or in direct support of, the
safe operation of aircraft. Chapter 5 – Safety Data Collection, Analysis and Exchange, outlines the specifications to support safety management activities by collection and analysis of safety data and by exchange of safety information, as part of the State Safety Program (SSP). It is complemented by Attachment B - Legal guidance for the protection of information from safety data collection and processing systems.

- Procedures for Air Navigation Services, Air Traffic Management (PANS-ATM) (Doc 4444), paragraph 16.3 requires occurrences such as aircraft proximity (AIRPROX) or other serious difficulty resulting in a hazard to aircraft caused by (among others, faulty procedures, non-compliance with procedures, or failure of ground facilities) to be reported. The document also provides a model air traffic incident report which is helpful for determining degree of risk involved in an aircraft proximity incident.

- NAT Regional Supplementary Procedures (Doc 7030) establishes the target level of safety (TLS) in each dimension and requires the safety level to be determined by an appropriate safety assessment as described in the *Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689), the Safety Management Manual (SMM) (Doc 9859)* and Annex 19.

- Manual of Aircraft Accident and Incident Investigation (Doc 9756), Part I — *Organization and Planning,* contains guidance material concerning the preparation of notification messages and the arrangements to be made for their prompt delivery to the addressee. It also includes a sample notification.

- Manual on a 300 m (1 000 ft.) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574), provides regional planning groups with a basis for the revision of documents, procedures and programs to enable the maintenance of a 300 m (1 000 ft.) VSM between FL 290 and FL 410 inclusive within their particular regions in accordance with the criteria and requirements developed by ICAO. This manual also provides: guidance to State aviation authorities on those measures necessary to ensure that the criteria and requirements are met within their area of responsibility and background information for operators for the development of operating manuals and flight crew procedures. It indicates that there is a need for system performance monitoring during planning, implementation and operational use of RVSM.

- Regional Monitoring Agency Manual was issued in May 2004 in response to Doc 9574, *Manual on a 300 m (1 000 ft.) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive*. In all regions where RVSM has been implemented, Regional Monitoring Agencies (RMA) have been established by the appropriate Planning and Implementation Regional Groups (PIRGs) to undertake the functions described in this manual. The objectives of the RVSM monitoring programme include, inter alia:

a) Verification that the RVSM approval process remains effective;

b) Verification that the target level of safety will be met on implementation of RVSM, and will continue to be met thereafter;

c) Monitoring the effectiveness of the altimetry system modifications which have been implemented to

enable aircraft to meet the required height-keeping performance criteria; and d) Evaluation of the stability of altimetry system error (ASE).

The Regional Monitoring Agency Manual was developed to provide guidance for RMAs in the performance of these functions.

- Air Traffic Services Planning Manual (Doc 9426) was published in 1984 to supplement the provisions governing ATS as specified in Annex, *Rules of the Air*, Annex 11, *Air Traffic Services* and PANS -ATM. Part II, Chapter 3, ATS Incident Reporting, is concerned with the reporting and investigation of an air traffic incident, i.e., an occurrence involving air traffic such as a near collision, a difficulty caused by faulty procedures, the lack of compliance with applicable procedures, or a failure of ground facilities resulting in a hazard to aircraft. It also reproduces a form for use by pilots and controllers when submitting or receiving a report regarding an air traffic incident. In Part II- Methods of application employed by Air Traffic Services, Section 2, Chapter 4- Minimum navigation performance specifications, the manual explains that "States of Registry which have approved MNPS operations should continue to monitor operations so approved." It also
explains why the Central Monitoring Agency was developed, i.e., in part to determine whether a general or partial degradation of navigation performance was taking place and what corrective action is required.

- Safety Management Systems Manual (Doc 9859) is intended to provide States with guidance for the development and implementation of a State Safety Programme (SSP), in accordance with the International Standards and Recommended Practices (SARPs) contained in Annex 1 — *Personnel Licensing*, Annex 6 — *Operation of Aircraft*, Annex 8 — *Airworthiness of Aircraft*, Annex 11 — *Air Traffic Services*, Annex 13 — *Aircraft Accident and Incident Investigation* and Annex 14 — *Aerodromes, Volume I — Aerodrome Design and Operations*. It explains the need for States to implement a SSP). Element 3.2 Safety data collection, analysis and exchange) which ensures the capture and storage of data on hazards and safety risks at both an individual and aggregate State level, as well as to establish mechanisms to develop information from the stored data, and to actively exchange safety information with service providers and/ or other States as appropriate.

-North Atlantic operations and airspace manual (NAT Doc 007) explains that as the result of 60NM lateral separation minima, special importance will have to be placed on monitoring and assessment of navigation performance. It was therefore agreed that there was a need to collect, collate and circulate to States participating in the monitoring programme, data regarding navigation performance in the NAT Region. To meet this requirement, the NAT CMA was established. The document captures relevant ICAO SARPs and guidance.

-NAT SPG Conclusions. Any reporting requirements agreed to by the Member States that make up the NAT SPG as outlined in its conclusions from its first meeting in 1965 to its forty-ninth meeting in June 2013, are referenced in the table. One-time reporting requests or requirements are not included. The NAT reporting requirements have gradually expanded to meet the needs of system risk assessments, understanding of operational errors, and informing the safety assessments involved with reductions in separation. The SPG conclusions tend to supplement the documents above and add a measure of regional standardization.

Region-Specific Reporting Responsibilities

Report the following to the NAT CMA in a timely manner if the event occurred in NAT oceanic airspace via email, or the North Atlantic Deviations and Error Monitoring Application (NAT DEMA)

Type of Information	Contents:	Reference
Incidents ➢ Near collisions requiring an avoidance maneuver to avoid a collision or an unsafe situation or when an avoidance action would have been appropriate. [ACAS RA events] **Occurrences/Events** ➢ Non-MNPS Certified aircraft in MNPS airspace ➢ Any actual deviation from the cleared track (SLOP (strategic lateral offset procedure) is not a deviation) ➢ A Gross Navigation Error (GNE) ➢ An ATC Intervention ➢ An ATC Prevention ➢ Turnback or contingency procedure ➢ Instances of poor or non-existent co- ordination ➢ Large Height Deviations (LHD) ➢ Time/speed-related Errors ➢ Incorrect application of SLOP ➢ Losses of separation ➢ Erosion of longitudinal separation in MNPS of 3 mins or more ➢ Discrepancies of 5 minutes or more between an ETA/ATA at a waypoint ➢ Erosions of lateral separations	a) event type; b) date the event occurred; c) start and end times and locations (expressed as latitude/longitude) of the occurrence; d) location where the event occurred; e) type of airspace involved (i.e. MNPS, below MNPS, etc.); f) whether the event occurred within, north or south of the NAT OTS; g) type of aircraft operation (i.e. commercial, general aviation or military); h) operator name; i) aircraft identification, type, departure and destination; j) assigned flight level and, if different, the observed flight level; k) whether or not the aircraft entered the reporting OCA at an uncoordinated flight level; l) assigned speed and, if different, the observed or reported speed; m) assigned route and if different, the observed or reported route, including for a subsequent route portion not yet flown; n) flight plan; o) if applicable, the duration at uncleared flight level; p) if applicable, the duration at uncleared speed; q) type(s) of communication being used at the time of the occurrence; r) identification of the unit, flight information region or sector from which the flight entered the OCA of the unit providing the report; s) communications or surveillance mode used to detect the event (i.e. Mode C, ADS-B, ADS-C, pilot report, etc.); t) whether the flight crew was advised of the event; u) any comments provided by the flight crew; v) whether the event was reported to the NAT DLMA; w) if applicable, whether or not the appropriate contingency procedure(s) was(were) followed; x) if the applicable contingency procedure was not followed, details concerning the actio	-For required content of the report, see NAT SPG Conclusion 48/19 and 22, Appendix L. -See NAT Doc 001, for occurrence reporting codes. -When notifying air operators of an occurrence include the OESB per NAT SPG 49/15; -Additional requirements are referenced in at least the following documents: for no-MNPS cert. aircraft in MNPS airspace, see___; or non-HF equipped aircraft, see__; for deviations see **NAT SPG 48/21;** for turnback or contingency reporting see SPG **41/4;** for poor or non-existent coordination, see **NAT SPG 41/15**; for reporting LHD, see the RMA manual of 2004 and **SPG 38/10;** for time/speed related errors see **SPG 48/22, App. L;** for contingency procedures see **SPG 41/4**; for incorrect application of SLOP, see **NAT Doc. 007 par.11.7.14**; for losses of separation, see **Doc. 4444 par. 16.3;** for erosion of

Type of Information	Contents:	Reference
➢ ATC loop errors and incorrect clearances ➢ Deviations due to MET conditions NOTE: The CMA will forward to the DLMA any report described above that involves data link issues per NAT SPG conclusion 48/17	taken by the flight; y) an initial event summary (to be included with the initial report to the NAT CMA); z) findings and conclusions (including causes and contributory factors) arising from the unit's investigation of the event; aa) when applicable, the name of the unit(s) whose breakdown in procedure led to the event; bb) corrective actions taken in response to the event; and cc) mitigations, if any, put in place to address the event.	long. separation and discrepancies of 5 minutes or more see **NAT Doc. 007 par. 11.7.14;** for erosions of lateral separations see _____; for loop errors, incorrect clearances, deviations due to MET, see **Doc 9574**; Timeframe: with the least possible delay, per **Doc 007 par. 11.7.12**

As new mitigations are implemented, report them to the NAT CMA via email or through the North Atlantic Deviations and Error Monitoring Application (NAT DEMA)

Type of Information	Contents:	Reference
Implementation of new mitigations (to vertical risk) and report the effects	Explain the implementation of new mitigations to vertical risk and report the effects (share best practices)	See **NAT SPG conclusion 41/20**

Report to the United Kingdom National Air Traffic Services, Ltd. (NATs UK)

Type of Information	Contents:	Reference
Wake Turbulence Events	Use the Wake Turbulence Reporting Form Information goes into the Wake Vortex database and is compiled and sent to the CMA periodically	**North Atlantic operations and airspace manual (NAT Doc 007) Attachment 3**

Type of Information	Contents:	Reference

Traffic Activity Data	i) operator and aircraft type, time, position, level and assigned Mach n umber from all compulsory reporting points (waypoints), including oceanic entry and oceanic exit points; ii) estimated time of arrival at each subsequent waypoint to the waypoints listed in i), except the oceanic exit point; and iii) suitable identification, e.g., registration or other unique indication, so that the disparate data sources can be combined; iv) in comma-separated-variable (CSV) format;	**NAT SPG conclusion 48/17**

Report traffic activity data from the 4th and 15th day of each month to NAV Canada.

Report the following to the NAT MWG, estimates proposed annually, using a 24-hour day annual sample comparing Reykjavik, Gander, and Shandwick daily traffic.

Type of Information	Contents:	Reference
Traffic Count (for the determination of future estimates of lateral error rates)		**NAT SPG Conclusion 44/19**

Report the following to the DLMA through the website, **http://www.ispacg-cra.com**.

Type of Information	Contents:	Reference
Data Link Issues	Required content: **http://www.ispacg-cra.com**.	**NAT SPG Conclusion 46/3**

OCCURRENCE CLASSIFICATION CODES

General

CF	Communications failure
CI	Crew Injury
CR	Crew Request
CW	Cracked window
DW	Destination Weather
ED	Engine Defect
ES	Engine Shutdown
F	Fire
FL	Fuel Leak
FPD	Fuel Pump Defect
FS	Fuel shortage
HP	Hydraulic Problem
IRSF	IRS Failure
LFT	Low Fuel Temperature
ME	Medical Emergency
PD	Passenger Disturbance
PEI	Precautionary-Engine Indication
PR	Pressurisation problem
S	Smoke
SIC	Smoke in Cockpit
TP	Technical Problem
W	Weather

Contingency Action	CA
CF	Communications failure
CI	Crew Injury
CR	Crew Request
CW	Cracked window
DW	Destination Weather
ED	Engine Defect
ES	Engine Shutdown
F	Fire
FL	Fuel Leak
FPD	Fuel Pump Defect
FS	Fuel shortage
HP	Hydraulic Problem
IRSF	IRS Failure
LFT	Low Fuel Temperature
ME	Medical Emergency
PD	Passenger Disturbance
PEI	Precautionary-Engine Indication
PR	Pressurisation problem
S	Smoke
SIC	Smoke in Cockpit
TP	Technical Problem
W	Weather

Diversion	DIV
D	Failed to comply with restriction in clearance
L	ATC error

Horizontal Separation Erosion	HSE
C	Crew error
ISO	Followed flight plan iso clearance
L	ATC error
L4	ATC Co-ordination error

Intervention	INT
A	Committed by aircraft not certified for operation in MNPS airspace
B1	ATC Loop Error - Controller error
B2	ATC Loop Error - Poor information exchange between CONTROLLER and the third party communicator
B3	ATC Loop Error - Poor information exchange between PILOT and the third party communicator
B4	ATC Loop Error - Poor centre to centre co-ordination
C	Crew error
C1	Equipment control error encompassing incorrect operation of fully functional FMS or navigation system.
C2	Incorrect transcription of ATC clearance or re-clearance into the FMS.
C3	Wrong information faithfully transcribed into the FMS e.g. flight plan followed rather than ATC clearance or original clearance followed instead of re-clearance
D	Other with failure to notify ATC in time for action
E	Other with failure to notify ATC too late for action
F	Other with failure not notified/received by ATC
G	Inter-facility co-ordination problem
ISO	Followed flight plan iso clearance
L	ATC error
W	Weather
Lateral Deviation <25nm	L
Lateral Deviation <15nm	L15
A	Committed by aircraft not certified for operation in MNPS airspace
B1	ATC Loop Error - Controller error
B2	ATC Loop Error - Poor information exchange between CONTROLLER and the third party communicator
B3	ATC Loop Error - Poor information exchange between PILOT and the third party communicator
B4	ATC Loop Error - Poor centre to centre co-ordination
C1	Equipment control error encompassing incorrect operation of fully functional FMS or navigation system.

C2	Incorrect transcription of ATC clearance or re-clearance into the FMS.
C3	Wrong information faithfully transcribed into the FMS e.g. flight plan followed rather than ATC clearance or original clearance followed instead of re-clearance
D	Other with failure to notify ATC in time for action
E	Other with failure to notify ATC too late for action
F	Other with failure not notified/received by ATC
G	Inter-facility co-ordination problem
W	Weather

GROSS NAVIGATION ERRORS

The GNE occurred in MNPS airspace and the aircraft was observed exiting the ocean through the windows and the deviation >= 30Nm.

Alpha (eta)

The GNE occurred in MNPS airspace and the aircraft was observed exiting the ocean through the windows and the deviation >= 50Nm or >= 1 deg, as appropriate.

Alpha (zeta, risk- bearing)

The GNE occurred in MNPS airspace, was NOT observed exiting the ocean through the windows and the deviation >=25Nm or WAS observed exiting the ocean through the windows and the deviation >=30Nm. — B

The GNE occurred above or below MNPS airspace (not necessarily at the windows) and the deviation >=25Nm — C

C	Crew error
D	Failed to comply with restriction in clearance
E	Climb/descent without ATC clearance.
L	ATC error
W	Weather

Longitudinal Separation Erosion — LSE

C	Crew error
L	ATC error
MA	Mach no.
WP	Waypoint

Time-Related Incident — TRI

CF	Communications failure
CI	Crew Injury
CR	Crew Request
CW	Cracked window
DW	Destination Weather
ED	Engine Defect
ES	Engine Shutdown
F	Fire
FL	Fuel Leak
FPD	Fuel Pump Defect
FS	Fuel shortage
HP	Hydraulic Problem
IRSF	IRS Failure

LFT	Low Fuel Temperature
ME	Medical Emergency
PD	Passenger Disturbance
PEI	Precautionary-Engine Indication
PR	Pressurisation problem
S	Smoke
SIC	Smoke in Cockpit **TP**
Technical	Problem **W**
Weather	

	Turnback	TB
A	Contingency action due to engine fault.	
B	Contingency action due to pressurization failure.	
C	Contingency action due to other cause.	
D	Failure to climb/descend as cleared.	
E	Climb/descent without ATC clearance.	
F	Entry to RVSM airspace at an incorrect level.	
G	ATC FL re-clearance resulting in a loss of lateral or longitudinal separation.	
H	Deviation due to TCAS.	
I	Aircraft unable to maintain level.	
J	ATC failure to correctly record, coordinate, or follow through on FL changes and/or other clearances.	
K	Aircrew not maintaining level as cleared.	
L1	ATC failure to capture incorrect read back of control instructions.	
L2	ATC failure to maintain situational awareness.	
L3	ATC failure to resolve transposed call signs.	
L4	ATC Co-ordination error	
M	Actions taken due to mechanical or equipment failure.	
O	Other	
W	Weather	
	Final level within RVSM airspace	1
	Final level above RVSM airspace	2
	Final level below RVSM airspace	3

APPENDIX L — PROCEDURE FOR PROCESSING OF PROPOSALS FOR AMENDMENT TO THE NAT SUPPS

(*paragraphs 6.5.2 and 6.5.4 refer*)

Text to be inserted in the NAT SPG Handbook (NAT Doc 001) in section entitled "North Atlantic Systems Planning Group (NAT SPG)", just before "Formulation of recommendations to the NAT SPG":

Procedure for processing of Proposals for Amendment to the NAT SUPPs

Proposals for amendment (PfA) to the NAT *Regional Supplementary Procedures* (SUPPs, Doc 7030) should be reviewed and endorsed by the NAT SPG before further processing by the ICAO Secretariat.

The ICAO Secretariat will process the PfA in accordance with the formal procedures immediately after its endorsement by the NAT SPG.

In exceptional cases, if a PfA requires urgent processing between two NAT SPG meetings, the ICAO Secretariat will circulate the PfA to the NAT SPG member States and Observers by correspondence for approval.

Formulation of recommendations to the NAT SPG

[…]

Draft NAT SPG Conclusion ##/NATXXXNN/Z – TITLE

That the NAT(Group designation)/ICAO Regional Director, Europe and North Atlantic:

a) AA;

b) BB; and

c) CC.

Where:

TITLE is a concise description of the subject addressed by the proposed draft Conclusion. For a PfA to the SUPPs, this title shall start with "PfA to the SUPPs,";

is the designation of the next NAT SPG meeting;

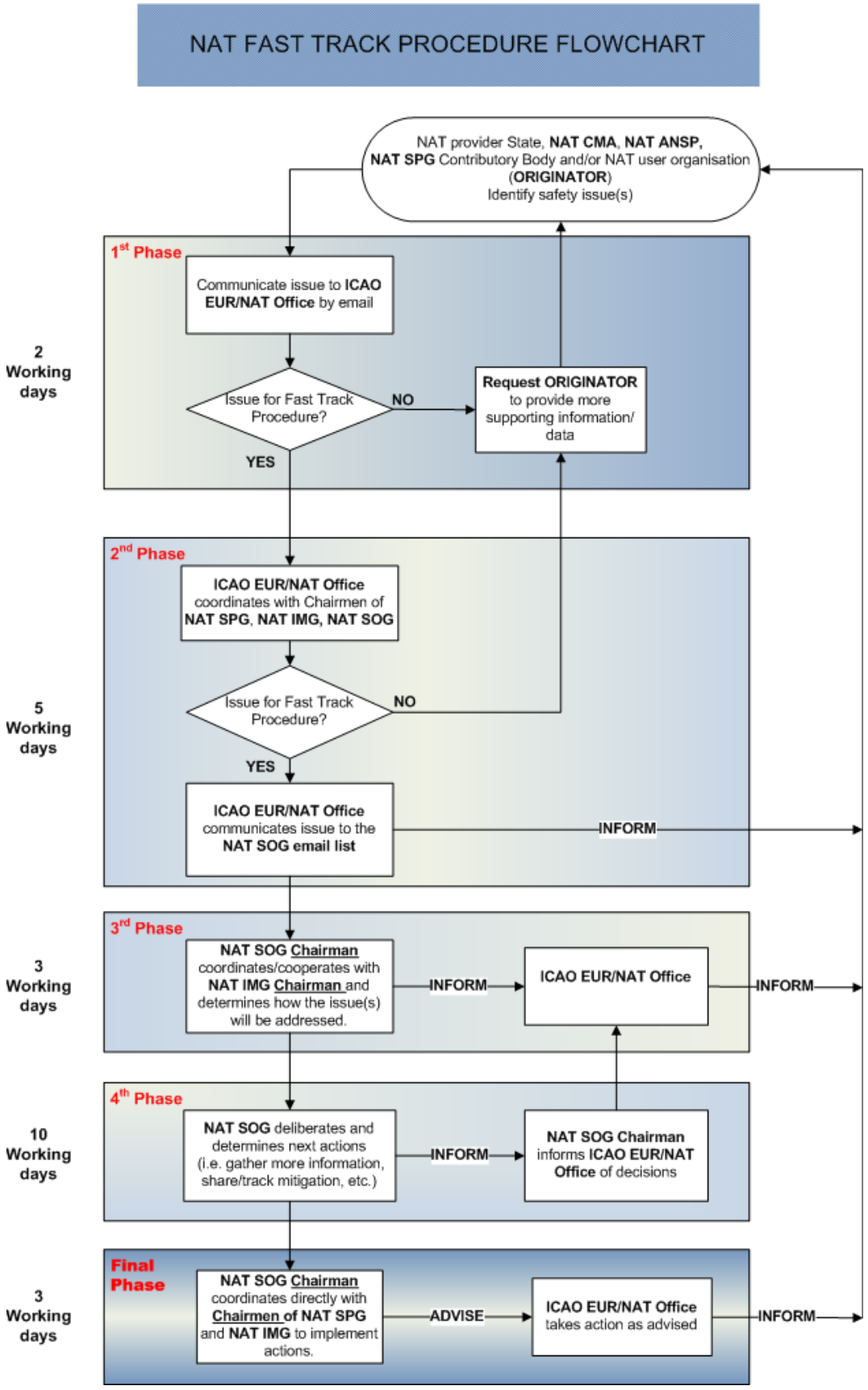
NATXXXNN is the designation and meeting number of the NAT SPG contributory group proposing the draft Conclusion; and

Z is a number indicating the sequence of the proposed draft Conclusion as it appears in the contributory group report.

When formulating each (draft) NAT SPG Conclusion, all acronyms except NAT SPG shall be decoded when they are initially used. This shall be true even for acronyms which have appeared in a previous draft Conclusion. It is acceptable to use an acronym in the title, so long as it is decoded in the body of the draft Conclusion.

APPENDIX M — NAT FAST TRACK PROCESSEDURE

(*paragraph 6.6.3 refers*)



NAT FAST Track Procedure for Safety Occurrences Reporting Form

ORIGINATOR: (NAT Provider State, NAT CMA, NAT ANSP, NAT SPG Contributory Body and/or NAT user organisation)	*[Indicate here who is at the origin of the NAT Fast Track Procedure (NFTP) request]*
Contact Point: name, email, phone number	*[Provide here contact details on who to ask for further information on the safety issue that triggered this NFTP request, and who to report to on the progress of this NFTP request]*
Domain(s) affected	*[Indicate here the operational domains/activities affected by the safety issue that triggered this NFTP request, for example: flight plan processing, phraseology etc.]*
Geographical area affected	*[Indicate here the geographical area affected by the issue]*
Description of the case	*[Describe here the safety issue that triggered this NFTP request, in full detail, including: extensive description of the safety issue and its effect, an assessment on why this is a safety issue (*e.g. *what is the impact on safety). This is basically the rationale for this NFTP]*
Supporting data	*[Provide here, or in an attachment, all data/elements collected to support the case described above, (domain(s),geographical area, description, safety impact) covering all aspects listed in this form]*
Evaluated safety impact	*[Provide here, in an explicit, and if possible, in a detailed and comprehensive manner, an evaluation of the safety impact of the issue that triggered this NTFP]*
Proposed solution(s) or corrective/mitigation action(s)	*[Provide here one or several solution(s) or corrective/mitigation action(s)]*

APPENDIX N — ADDITIONS TO NAT SDR (NAT DOC 009)

(*paragraph 6.7.2 refers*)

Editorial Note: Amendments are arranged to show deleted text as text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

modify Part 2 – NAT SDR – Draft Executive Summaries, *to include the following:*

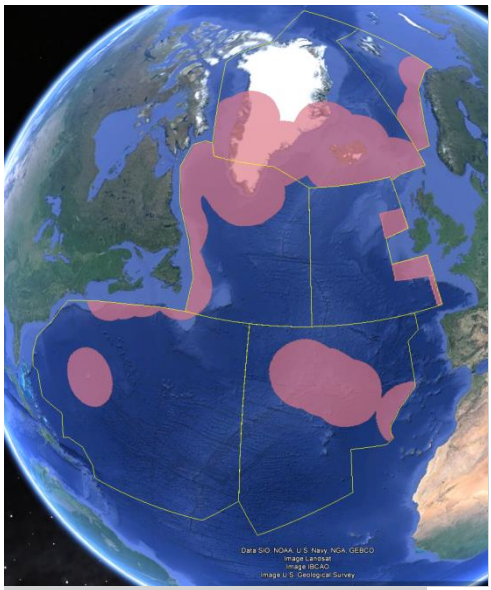
Automatic Dependent Surveillance – Broadcast (ADS-B)

ADS-B in conjunction with Direct Controller Pilot (DCPC) VHF Voice Communications enables application of 5-10 NM radar-like separation for enroute aircraft. This provides significant benefits over oceanic procedural separation. Depending on circumstances, ADS-B can be used to provide radar-like services.

Canada, Iceland and Portugal have ADS-B implementation projects in the NAT. NAV CANADA has implemented ADS-B services in South Greenland and in the Canadian coastal regions. Isavia is scheduled to implement ADS-B services in Iceland, Faroe Islands and Greenland in 2014. NAV Portugal is scheduled to implement ADS-B services in Portugal, Azores Islands by the end of 2014.

More ADS-B ground station installations are possible in the future provided benefits can be proven.

Future plans for ADS-B use include the implementation of Space Based ADS-B via Low Earth Orbiting Satellites. The Iridium NEXT satellite constellation is expected to provide global coverage by augmenting the current ground-based surveillance infrastructure, thereby offering the possibility of monitoring ADS-B equipped aircraft anywhere in the world.



Target NAT ATS Surveillance coverage (Radar and ADSB) after the first phase of NAT ADS-B implementations.

Key dates

Gander:
2010: Ground based ADS-B services provided from 6 sites in Canada and 4 sites in Greenland.

2015 to 2017: Planned launches of 66 Iridium NEXT satellites equipped with receivers capable of receiving signals from 1090 megahertz (MHz) Mode S extended squitter transponders.

2018: Space based ADS-B services implemented

Reykjavik:
2013: 8 ADS-B stations installed in Iceland at 8 sites, 4 ADS-B stations installed in the Faroe Islands at two sites, 10 ADS-B stations installed in Greenland at 5 sites.

2014: ADS-B services implemented before end 2014.

Santa Maria:
2013: 11 ADS-B stations installed in the central group of the Azores Islands at 11 sites.

2014 (first quarter): 6 ADS-B stations installed in the western group of the Azores Islands at 6 sites.

2014 (last quarter): ADS-B services implemented.

Supporting Documents

NAT Doc 7030 amendment proposal concerning the requirement for aircraft operators to ensure that only valid ADS-B data is transmitted while operating in designated ADS-B service areas.

Interdependencies

None.

GANP ASBU modules

B0-FRTO
Improved Operations through Enhanced En-route Trajectories

B0-ASUR
Initial Capability for Ground Surveillance

B0-SNET
Increased Effectiveness of Ground-Based Safety Nets

Greenland ATM Improvement Program

The Greenland ATM Improvement Program applies to the airspace in the Sondreström FIR north of 6330N between F195 and F285. Traffic in this airspace is mostly domestic traffic in Greenland as well as international traffic to/from airports in Greenland. The applicable separation standards have for the most part been 120 NM lateral separation and 30 minutes longitudinal separation which has precluded efficient operations in the airspace.

The aim of the Greenland ATM Improvement Program is implementation of new and improved procedural separation standards, introduction of ADS-B surveillance services and Direct Controller Pilot (DCPC) VHF voice communications.

Key dates

July 2013: Operational trial of 20 NM lateral separation between GNSS equipped aircraft climbing/descending through the level of other GNSS equipped aircraft.

July 2013: Introduction of 15 minutes longitudinal separation between other than turbojet aircraft using third party VHF communication.

April 2014: Operational trial of 7 NM lateral separation between GNSS equipped aircraft in DCPC VHF voice communication and climbing/descending through the level of other GNSS equipped aircraft.

April 2014: Operational trial of 15 NM lateral separation between GNSS equipped aircraft in DCPC VHF voice communication.

April 2014: Application of "traditional" PANS-ATM procedural separation between aircraft in DCPC VHF voice communication.

December 2014: Introduction of ADS-B surveillance services.

Supporting Documents

None.

Interdependencies

None.

GANP ASBU modules

B0-FRTO
Improved Operations through Enhanced En-route Trajectories

B0-ASUR
Initial Capability for Ground Surveillance

B0-SNET
Increased Effectiveness of Ground-Based Safety Nets

APPENDIX O — NAT SUPPS PFA REGARDING50 NM LATERAL SEPARATION IN SANTA MARIA OCEANIC CTA

(*paragraph 6.8.3 refers*)

PROPOSAL FOR AMENDMENT OF THE REGIONAL SUPPLEMENTARY PROCEDURES, NAT REGION (Doc 7030/5)

(Serial No.: To be completed by Secretariat.)

a) **Regional Supplementary Procedures:**

Doc 7030/5 – NAT Region.

b) **Proposed by:**

Portugal

c) **Proposed amendment:**

Editorial Note: Amendments are arranged to show deleted text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

1. *Modify* the following in NAT SUPPs, Chapter 4 – Navigation, paragraph 4.1.1 *Area navigation (RNAV) specifications*:

4.1.1 Area navigation (RNAV) specifications

4.1.1.1 RNAV 10 (RNP 10)

Note.— RNAV 10 retains the RNP 10 designation, as specified in Doc 9613, 1.2.3.5.

4.1.1.1.1 The RNP 10 specification shall be applicable to navigation systems used to support the separation minima specified in 6.2.1.1 ~~c~~b) when published in State AIPs. Additionally, the navigation performance shall be measured to ensure that the following criteria are met in order for this separation minima to be utilized in the New York Oceanic East FIR and Santa Maria Oceanic FIR:

a) the proportion of the total flight time spent by aircraft 46 km (25 NM) or more off the cleared track shall be less than 9.11×10^{-5}; and

b) the proportion of the total flight time spent by aircraft between 74 and 111 km (40 and 60 NM) off the cleared track shall be less than 1.68×10^{-5}.

2. *Modify* the following in NAT SUPPs, Chapter 6 – Air Traffic Services, paragraph 6.2. *Separation*:

6.2 SEPARATION

6.2.1 Lateral

(A11 – Attachment B; P-ATM – Chapter 5)

6.2.1.1 Minimum lateral separation shall be:

a) 55.5 km (30 NM) between aircraft operating within the control area of the New York Oceanic East FIR provided that the following conditions are met:

1) navigation – RNP 4 specification in accordance with the provisions of 4.1.2.1;

2) communication – CPDLC shall be monitored against RCP 240; and

3) surveillance – ADS-C shall be monitored against RSP 180.

Note – Guidance concerning RCP and RSP specifications, application and performance requirements can be found in the Global Operational Data Link Document (GOLD).

b) 93 km (50 NM) between aircraft operating in the New York Oceanic East FIR and Santa Maria Oceanic FIR meeting RNP 10 or RNP 4 specification in accordance with the provisions of 4.1.1.1 or 4.1.2.1, respectively.

c) 110 km (60 NM) between aircraft which meet the minimum navigation performance specifications (MNPS) provided that a portion of the route of the aircraft is within, above, or below MNPS airspace;

Note.— NAT MNPS airspace is defined in 4.1.1.5.1.1.

d) 167 km (90 NM) between aircraft operating outside the MNPS airspace and at least one aircraft does not meet the MNPS:

1) between the Iberian Peninsula and the Azores Islands; and

2) between Iceland and points in Scandinavia and in the United Kingdom;

e) 167 km (90 NM) between aircraft not approved RNP 10 or RNP 4 operating outside MNPS airspace where no portion of the route of the aircraft is within, above, or below MNPS airspace:

1) between the United States/Canada and Bermuda; and

2) west of 55°W between the United States, Canada or Bermuda and points in the CAR Region;

Note.— MNPS airspace is defined in 4.1.1.5.1.1

f) 223 km (120 NM) between other aircraft;

except that lower minima in 5.4.1.1.2 of the PANS-ATM may be applied, or further reduced in accordance with 5.11 when the conditions specified in the relevant PANS-ATM provisions are met (see 5.4).

APPENDIX P — NEW NAT VOLCANIC ASH CONTINGENCY PLAN

(*paragraph 6.10.7 refers*)

This Appendix is provided separately

APPENDIX Q — AMENDMENT TO THE NAT ATMG COMPOSITION

*(Paragraph 6.11.5**Error! Reference source not found.** refers)*

Editorial Note: Amendments are arranged to show deleted text as text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

modify NAT AIR TRAFFIC MANAGEMENT GROUP (NAT ATMG) *section (currently at page 24) as follows:*

Composition

The NAT ATMG is composed of representatives from NAT SPG member States as well as participants from Spain, IATA, IBAC and IFALPA.

The Group invites the NAT DMO once a year to the NAT ATMG meeting taking place in Paris, France, unless otherwise agreed by the Group. The Group may invite participants from other States, organisations or industry as required.

The Rapporteur of the NAT ATMG will be reviewed by an election every four years and confirmed by the NAT IMG[4].

[4] *NAT SPG Conclusion 49/27 refers*

APPENDIX R — TERMS OF REFERENCE OF THE NAT OPS/AIR SUB-GROUP

(Paragraph 6.11.7 refers)

Editorial Note: Amendments are arranged to show deleted text as greyed out text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

modify NAT OPERATIONS AND AIRWORTHINESS SUB-GROUP (NAT OPS/AIR) *section as follows:*

Terms of Reference

The NAT OPS/AIR sub-group ~~serves as a forum for State and aviation industry specialists to harmonise policy on airworthiness and operations issues related to separation standards~~ supports the NAT CNSG where required in the execution of its work program. Its specific responsibilities are:

1. Coordinate with appropriate groups and organisations on issues which may arise in the application of the ~~Minimum Aircraft System Performance Specifications (MASPS)~~ RVSM Performance Specifications.

2. As directed by NAT CNSG, review operational issues related to the role of Airborne Collision Avoidance System (ACAS) and develop recommendations as appropriate.

~~2 Initiate necessary action to amend aeronautical charts to correctly reflect navigational requirements related to operational procedures and requirements in the ICAO NAT Region related to the application of separation.~~

~~3 Study operational issues related to the role of Airborne Collision Avoidance System (ACAS) and develop recommendations as appropriate~~

3~~4~~ ~~Harmonise~~ Help facilitate the harmonisation of aircraft operational and airworthiness policy for ~~Automatic Dependent Surveillance (ADS), Controller Pilot Data Link Communications (CPDLC) and other~~ data link initiatives supporting performance based operations in the NAT Region.

~~5 Coordinate with the NAT ATMG and the NAT CNSG in the development of aircraft operational issues as directed by the NAT SARSIG.~~

4~~6~~ ~~Study other~~ Review aircraft operational issues ~~as directed by the NAT SARSIG~~ and develop recommendations as appropriate as directed by the NAT CNSG.

~~7 Report to the NAT SARSIG..~~

Composition

~~The NAT OPS/AIR is composed of~~ Representatives from members and observers of the NAT SPG ~~member States as well as participants from IATA, and IFALPA~~ and from manufacturers.

Note: The *Rapporteur* may invite participants from other States, organisations or industry as required.

~~The composition of the sub-group meetings is determined by the resources needed for the assigned task and may include participants from other States, organisations or industry.~~

The *Rapporteur* of the NAT OPS/AIR will be reviewed by an election every four years ~~(commencing in 2014 - SPG/49 refers)~~ and confirmed by the NAT ~~SARSIG~~[5] CNSG.

~~**Working Methods**~~

The NAT OPS/AIR sub-group meets when required ~~once a year in the spring in the ICAO European and North Atlantic Office in Paris (or as specifically requested by the NAT CNSG) at least three weeks prior to the NAT CNSG meeting with ICAO Secretariat support~~

~~The NAT OPS/AIR conducts its work via correspondence to the extent possible.~~

Modify the connection (and position) of the NAT OPS/AIR *box in the diagram showing the* NAT SPG WORKING STRUCTURE *(currently at page 7) moving it from under the* NAT SARSIG *box under the* NAT CNSG *Box.*

Modify the position of the NAT OPERATIONS AND AIRWORTHINESS SUB-GROUP (NAT OPS/AIR) *section (currently at page 26) to be placed after the section on the* NAT DATA LINK MONITORING AGENCY (NAT DLMA) *(currently at page 29, and before that on the* NAT SAFETY OVERSIGHT GROUP (NAT SOG) *(currently at page 30).*

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[5] ~~*NAT SPG Conclusion 49/27 refers*~~

APPENDIX S — AMENDMENT REGARDING THE NAT OESB AND NAT SOC

(Paragraph 6.11.9 refers)

Editorial Note: Amendments are arranged to show deleted text as text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

modify REFERENCE DOCUMENTATION *section as follows (currently at page 50):*

NAT DOCUMENTS PROMULGATED BY THE NAT SPG		
NUMBER	**TITLE &** ***notes on configuration management***	**CURRENT EDITION/VERSION**
	[…]	
	Oceanic Errors Safety Bulletin *Kept under review by NAT SG - Amendments approved by NAT SOG* ***Note:*** *the NAT Oceanic Error Safety (OES) Bulletin (NAT OESB) is used to distribute information on best practices used to avoid errors when operating in the NAT Region. The NAT OESB is mainly addressed to the attention of pilots and dispatchers. The material contained in the NAT OESB is developed within the working structure of the NAT SPG and reviewed on a regular basis*	Regularly updated and issued as NAT ~~OPS~~ OES Bulletins
	Sample Oceanic Checklists *Kept under review by NAT SG - Amendments approved by NAT SOG* ***Note:*** *the NAT Sample Oceanic Checklist (NAT SOC) is a companion document of the NAT OESB. The material contained in the NAT SOC is developed within the working structure of the NAT SPG and reviewed on a regular basis*	Regularly updated and issued as NAT ~~OPS~~ OES Bulletin~~s~~ Supplement
NAT OPS Bulletins have individual serial numbers	NAT Operations Bulletins *Note – The* NAT OPS Bulletins Checklist *lists the currently valid NAT OPS Bulletins* *Content is managed by originators - originators are noted on the cover pages*	NAT OPS Bulletins have individual validity dates
	[…]	

APPENDIX T — UPDATES TO NAT DOC 007 RELATED TO MEL RELIEF

(Paragraph 6.12.2 refers)

Editorial Note: Amendments are arranged to show deleted text as greyed out text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

1. Modify section 6.9 as follows:

6.9 AIRBORNE COLLISION AVOIDANCE SYSTEMS (ACAS)

6.9.1 ~~From 1 January 2005, all turbine-engined aeroplanes having a maximum certificated take-off mass exceeding 5,700 kg or authorized to carry more than 19 passengers have been required to carry and operate ACAS II in the NAT Region. TCAS Version 7.0 meets the technical specifications for ACAS II as contained in ICAO Annex 10 Volume IV.~~ Pilots should report all ACAS/TCAS Resolution Advisories which occur in the NAT Region to the controlling authority for the airspace involved. (See further on this in Chapter 12.)

…

2. Modify section 13.6 as follows:

13.6 ACAS/TCAS ALERTS AND WARNINGS

~~13.6.1 With effect from 01 January 2005 all turbine-engined aircraft with a certificated take-off mass exceeding 5,700 Kgs or authorised to carry more than 19 passengers are required to carry and operate ACAS II in the NAT Region. It should be noted that TCAS Version 7.0 meets the ICAO technical specifications for ACAS II as described in ICAO Annex 10 Volume IV.~~

13.6.~~2~~1 The provisions relating to the carriage and use of ACAS II are contained in ICAO Annexes 2, 6, 10 & 11 and in the Procedures for Air Navigation Services (PANS) Ops & ATM. Operational procedures are fully detailed in PANS-OPS Doc 8168, Volume 1, Part VIII, Chapter 3.

13.6.~~3~~2 All Resolution Advisories (RAs) should be reported to ATC:

a) verbally, as soon as practicable; and

b) in writing, to the Controlling Authority, after the flight has landed, using the necessary procedure and forms, including, when appropriate, the 'Altitude Deviation Report Form' shown at Attachment 2 to this Manual.

…

3. Modify section 17.6.30 as follows:

…

Flight Planning

…

Limits of Operational Authorisation

...

~~**MEL**~~

~~When planning and filing to fly within NAT RVSM airspace, the dispatcher must ensure that the~~

~~route meets the requirements of the paragraph above and that the aircraft also meets certain MEL provisions.~~

~~**TCAS (Traffic Collision Avoidance System)/ACAS (Airborne Collision Avoidance System)**~~
~~Aircraft operating in the MNPS are required to have TCAS/ACAS installed. However, MEL relief is provided for inoperative TCAS/ACAS, for dispatch into MNPS Airspace. TCAS/ACAS improves operational safety by enhancing pilot situational awareness and by providing a system for collision avoidance – particularly in densely populated airspace.~~

~~*Note: For flights in the North Atlantic Region ACAS II (TCAS Version 7.0) has been mandated as a requirement since January 1, 2005 for all aircraft having more than 19 seats or a certified take-off mass of more than 5,700 Kgs. (Other standards may be in effect in other parts of the world) However, there are provisions for MEL relief.*~~

Maintenance Flights

…

APPENDIX U — NAT DOC 007 LIST OF REQUIRED MODIFICATIONS

(Paragraph 6.12.5 refers)

Re: Chapter 5 reflecting E/B Oceanic Clearance delivery post NY OCA Split.

Quote

5.6 OCEANIC FLIGHTS ORIGINATING FROM THE NAM OR CAR REGIONS AND ENTERING NAT MNPS AIRSPACE VIA THE NEW YORK OCENIC EAST FIR

5.6.1 In February 2013, New York Center changed the way in which Oceanic Clearances are delivered to aircraft that enter the NAT via the New York Oceanic East FIR.

5.6.2 There are three elements to an Oceanic Clearance; Complete Route, Flight and Mach number. These elements do not have to be issued in the same clearance. Additionally, these elements may not be issued by the same ATS Provider. For example, the Route portion may be issued by one ATC Unit, the Oceanic Altitude issued by another and finally the Mach Number by a third. The receipt of all three elements, even if not received at the same time, constitutes receipt of an Oceanic Clearance and no further request for one is necessary. The detail of the procedures followed may differ depending on the ICAO region from which the flight originates.

5.6.3 For aircraft planning to enter the NAT via the New York Oceanic East FIR from the NAM Region or the New York Oceanic West FIR, the IFR clearance to destination received at the departure aerodrome from Air Traffic Control constitutes the Route portion of the Oceanic Clearance. Once airborne, and prior to entry into the NAT, aircraft will be assigned a Mach number and an Altitude by the FAA prior to NAT entry.

Note: For the purpose of this procedure," complete route" is defined as any route clearance with a clearance limit of the aircraft's destination.

5.6.4 Example one: on a flight from Santo Domingo (MDSD) to Madrid (LEMD), Santo Domingo ACC issues a clearance with a complete route; later, San Juan Center issues the aircraft a clearance to its requested altitude and Mach number. At this point, all three required elements (route, Mach number and flight level) have been received and the flight has an Oceanic Clearance. A subsequent change to any element(s) of the Oceanic Clearance does not alter the others.

5.6.5 Example two: on a flight from New York (KJFK) to Madrid (LEMD), Kennedy Clearance Delivery up-links a clearance via Pre-Departure Clearance (PDC) with a complete route and altitude; later, New York Center assigns the aircraft a Mach number. At this point, all three required elements (route, Mach number and flight level) have been received and the flight has an Oceanic Clearance. A subsequent change to any element(s) of the Oceanic Clearance does not alter the others.

5.6.6 The only exception to this procedure is for aircraft entering from Piarco CTA and thence through the southern (non-MNPS) portion of the New York Oceanic EAST FIR. For these flights Piarco ACC will issue all three elements of the Oceanic Clearance prior to entry into the New York Oceanic CTA.

5.6.7 In cases where aircraft have been cleared onto a North Atlantic Organized Track (NAT OTS), the Track Message Identification (TMI) number will be confirmed prior to reaching the NAT OTS entry fix.

5.6.8 If any difficulty is encountered obtaining the elements of the Oceanic Clearance, the pilot should not hold while awaiting a Clearance unless so instructed by ATC. The pilot should proceed on the cleared route into MNPS Airspace and continue to request the Clearance elements needed.

Unquote

Also note : -
the change of date in 5.6.1 above : - i.e. "Feb 2013" vice "Sep 2012";
the clarification in 5.6.6 that NY OCA East FIR south of 27°N is outside the NAT MNPSA;

the FAA responses to the questions raised at Para 2.15 of WP15 that : -

a) The airspace between parallels 3830N and 3900N in the NY OCA is no longer MNPS Airspace
b) The definition of MNPSA will include, *inter alia,* just the portion of NY Oceanic East FIR which is north of 27N.

the FAA responses to the questions raised at Para 2.18 of WP15 that :-

c) NY Oceanic CTA remains a single defined airspace incorporating both the NY OCA East and West FIRs; and
a) the phrases used elsewhere in Doc.007, including "New York Center" / "NY ARTCC" / "NY OAC", retain their meaning, without any need for additional "East" or "West" depicters.

Re : NERS Demise

All stated or implied references to NERS **and** to the statement that "*The UK AIP and AIP Ireland both specify the domestic routes to be used for westbound NAT traffic, based upon entry points into oceanic airspace." c*an be eliminated from Doc.007.
In future references to "EUR RTES EAST" will be eliminated from E/B OTS Track Messages.

Re : NAT ATS Surveillance coverage depictions in Doc.007.

For the time being, the note indicating that the promised two charts of Radar and ADS-B Coverages in the NAT Region are "pending", will be retained.
Meanwhile, all NAT ANSPs will review their provision of surveillance coverage data and will make efforts to provide to the DMO data in the form of geographical locations and height asl of radar heads and ADS-B Transceivers, together with any affecting terrain shielding data.
ANSPs will also consider the suggestion that the DLM exemption airspace " within ATS surveillance coverage", as specified for DLM Implementation Phases 2a, b and c, might more effectively be promulgated by fixed geographical co-ordinates.

APPENDIX V — UPDATES TO NAT DOC 007 RELATED TO SLOP

(Paragraph 6.12.9 refers)

Editorial Note: Amendments are arranged to show deleted text as greyed out text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

modify section 8.5.3 as follows:

8.5.3 Distributing aircraft laterally and equally across the three available positions adds an additional safety margin and reduces collision risk. Consequently, SLOP is now **a standard operating procedure** for the entire NAT Region and pilots **are required** to adopt this procedure as is appropriate. In this connection, it should be noted that:

a) Aircraft without automatic offset programming capability must fly the centreline.

b) ~~Pilots of aircraft capable of programming automatic offsets should preferably not fly the centre line but rather elect to fly an offset one or two nautical miles to the right of the centre line~~ To achieve an equal distribution of flying the centreline or 1 NM (one nautical mile) right or 2 NM (two nautical miles) right of centerline, it is recommended that pilots randomly select flying centreline or an offset in order to obtain lateral spacing from nearby aircraft (i.e. those immediately above and/or below). Pilots should use whatever means are available (e.g. ACAS/TCAS, communications, visual acquisition, GPWS) to determine the best flight path to fly.

…

APPENDIX W — NORTH ATLANTIC CENTRAL MONITORING AGENCY - REVISED TERMS OF REFERENCE – 2014

(paragraph 7.3.3 refers)

1. Rationale – The NAT CMA currently operates in accordance with two sets of TORs'- those established by ICAO for Regional Monitoring Agencies globally and contained in ICAO Doc.9937, and those provided by the NAT Safety Oversight Group (NAT SOG) to cover regional requirements.

2. Proposal – for clarity of purpose and understanding, the requirements of both sets of TORs have been reviewed by the NAT Central Monitoring Agency (NAT CMA) and amalgamated as follows:

TOR No.	Proposed text	Existing TOR
1.	Monitor the level of risk as a consequence of operational errors and in-flight contingencies as follows: a) Establish and maintain a mechanism for collation and analysis of all operational errors, including vertical deviations of 90m (300ft) or more and lateral deviations, from the above errors/actions; b) To determine and analyse, wherever possible, the root cause of each deviation together with its magnitude and duration; c) Calculate the frequency of occurrences; d) Assess the overall risk (technical and operational) in the system against the overall safety objective (see Doc 9574); e) Initiate follow-up action with State aviation authorities as required.	RMA
2.	Circulate regular reports on all operational deviations, together with such graphs and tables necessary to relate the estimated system risk to the TLS, employing the criteria detailed in Doc 9574, for which formats are suggested in Appendix A to Doc 9574;	RMA/CMA
3.	Produce a quarterly report on the operational performance in the NAT Region for distribution to the NAT SPG members and other interested parties, and submit an annual report to the PIRG (NAT SPG).	CMA
4.	To act as the custodian of all aircraft technical height keeping performance data collected as part of the NAT Regional monitoring process.	CMA
5.	Report height deviations of aircraft observed to be non-compliant, based on the following criteria: i. TVE $\geq$ 90m (300 ft); ii. ASE $\geq$ 75 m (245 ft); iii. AAD $\geq$ 90 m (300 ft). and take the necessary action with the relevant State and operator to determine; a. the likely cause of the height deviation; b. verify the approval status of the relevant operator; c. recommend, wherever possible, remedial action;	RMA/CMA
6.	Analyse ASE data to detect height deviation trends and, hence, to take action as in the previous item; a) investigate height-keeping performance of the aircraft in the core of the distribution; — the aircraft population — aircraft types or categories; and — individual airframes	RMA

TOR No.	Proposed text	Existing TOR
7.	Provide NAT customers and State aviation authorities with height monitoring data on request;	CMA
8.	Liaise with other Regional Monitoring Agencies (RMAs) in order to achieve an exchange of monitoring and RVSM approvals data amongst the regions.	CMA
9.	To contribute to the amendment and publication of the "NAT Minimum Monitoring Requirements" table in co-ordination with the Mathematicians Working Group and RMA Coordination Group.	CMA
10.	To ensure that the requisite height monitoring is completed by operators of aircraft contained in the RVSM approvals database and to take appropriate action where necessary;	CMA
11.	Establish and maintain a database of aircraft approved by the respective State authorities for operations within RVSM airspaces in that region.	RMA/CMA
12.	Conduct checks of the approval status of aircraft operating in the relevant RVSM airspace, identify non-approved operators and aircraft using RVSM airspace and notify the appropriate State of Registry/State of the Operator accordingly.	RMA/CMA

V1 – 07 March 2014/DN

APPENDIX X — TORS FOR THE NAT DATA LINK MONITORING AGENCY (DLMA)

(paragraph 7.3.6 refers)

Editorial Note: Amendments are arranged to show deleted text as greyed out text using strikeout (~~text to be deleted~~), and added text with grey shading (text to be inserted).

NAT Data Link Monitoring Agency (NAT DLMA)

Terms of Reference

The NAT Data Link Monitoring Agency (DLMA) will report to the NAT CNSG with respect to data link implementation, trials and operations.

It will receive and process routine and ad-hoc data and problem reports from end users and interested parties

The main tasks of the NAT DLMA are:

~~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' data link 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.~~

PART I

Problem analysis and resolution per D.3 of the GOLD, which includes:

1. A means for reporting, e.g. a web-based service.
2. Diagnose problems and recommend resolutions.
3. Co-ordinate problem reports and resolutions with other regional data link monitoring agencies.

Note 1: In the context of the ToR, provisions of D.3 and D.4 of the GOLD are mandatory.

Note 2: The entity must enter into a confidentiality agreement with those stakeholders who require it to provide problem reports. Except as authorized by individual stakeholders, all problem reports and associated documentation shall be de-identified prior to distribution to members to protect the name and/or company originating the problem report. The entity must implement and maintain a program to protect confidential and sensitive information provided by NAT stakeholders. No identified data shall be kept longer than is essential to the successful resolution of the associated problem.

PART II - Problem analysis and resolution per D.3 of the GOLD

D.3 Problem reporting and resolution

D.3.1 General

D.3.1.1 The working principles in this guidance material result from the combined experience of the North Atlantic, Asia-Pacific, South American, African-Indian Ocean, and European Regions. Many regions have formed a regional monitoring agency to manage the problem reporting and resolution process.

D.3.1.2 All stakeholders should be actively involved in the problem reporting and resolution process. It is essential that all aircraft operators in a region have the opportunity to become involved in the process and CRA's should be pro-active in getting all aircraft operators and other stakeholders to register and participate in the process.

D.3.1.3 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 *Figure D-20*.

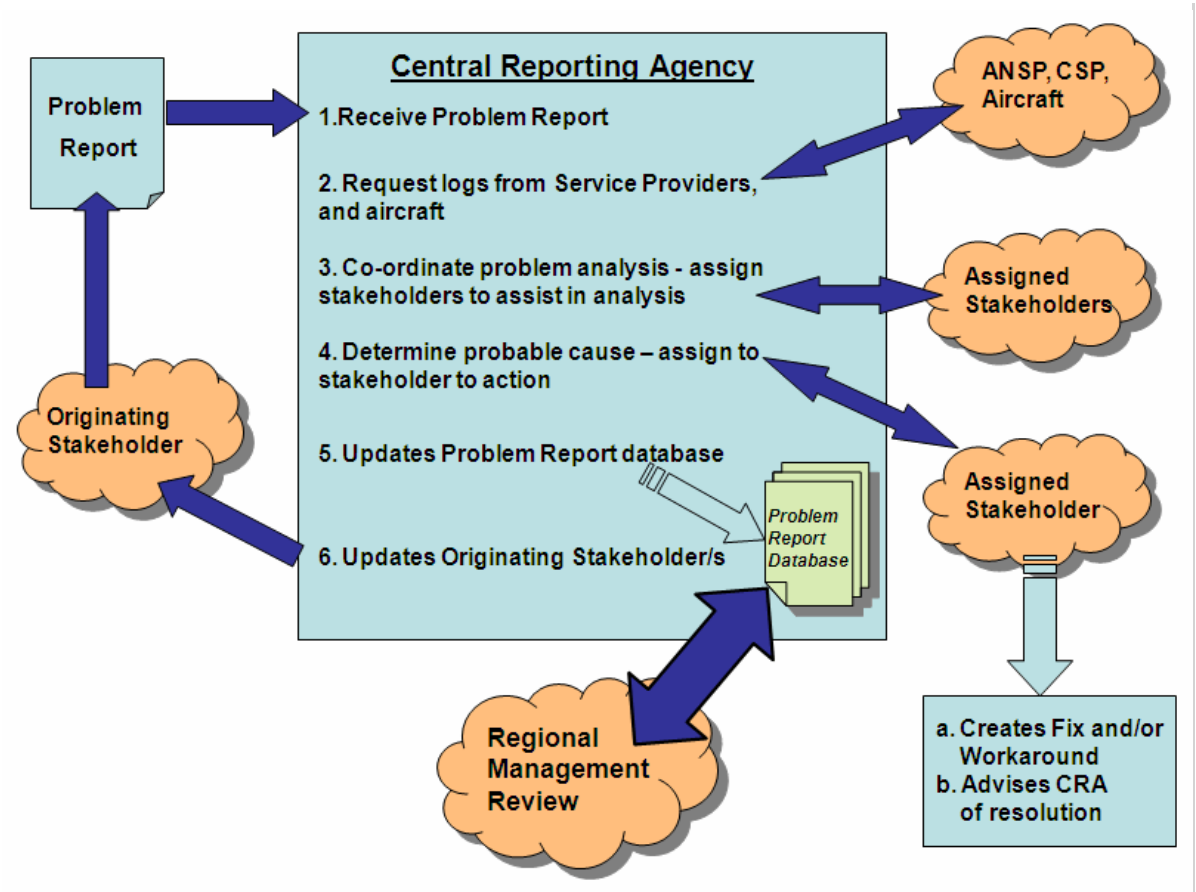

Figure D-20. Problem reporting and resolution process

D.3.2 Problem report form

D.3.2.1.1 The problem identification task begins with receipt of a problem report from a stakeholder, usually an operator, ANSP or CSP but may include aircraft or avionics manufacturers. Standard reporting forms should be developed and regions should investigate the use of a website to receive and store problem reports.

D.3.2.1.2 As an example, the EUR region uses JIRA*, a secured web-based problem reporting and tracking application, which is managed by the LINK2000+/Central Reporting Office of EUROCONTROL. Problems should be reported, regardless whether it can be resolved locally or needs to be handled to promote knowledge sharing across the data link community.

D.3.2.1.3 An example of an online problem reporting form currently used on-line by regional CRA in the NAT, and Asia Pacific regions is shown in *Figure D-21*. The fields used in the form are as follows:

a) Originator's Reference Number: Originators problem report reference (e.g. ANZ_2009-23);

b) Title: A short title which conveys the main issue of the reported problem (e.g. CPDLC transfer failure);

c) Date UTC: Date in YYYYMMDD format (e.g. 20090705);

d) Time UTC: Time in HHMM (e.g. 2345);

e) Aircraft registration: ICAO flight plan aircraft registration (e.g. ZKADR);

f) Aircraft identification: ICAO flight plan call sign if applicable (e.g. NZA456);

g) Flight Sector: If applicable the departure and destination airfield of the flight (e.g. NZAA-RJBB);

h) Organization: Name of the originators organization (e.g. Airways NZ);

i) Active Center: Controlling Centre at time of occurrence if applicable (e.g. NZZO);

j) Next Center: Next controlling centre at time of occurrence if applicable (e.g. NFFF);

k) Position: Position of occurrence (e.g. 3022S16345E);

l) Problem Description: Detailed description of problem;

m) Attach File: Area of web page where originator and assigned stakeholders can attach data files or other detailed information such as geographic overlays; and

n) Additional Data: Area set aside for feedback from stakeholders assigned by the regional/State monitoring agency. This will includes the results of the investigation and the agreed action plan.

Note: A number of regional monitoring agencies are developing websites to manage the problem reporting process. Website addresses and the regional monitoring agency to which they are applicable are listed in Appendix E.

* *http://www.eurocontrol.int/link2000/wiki/index.php*

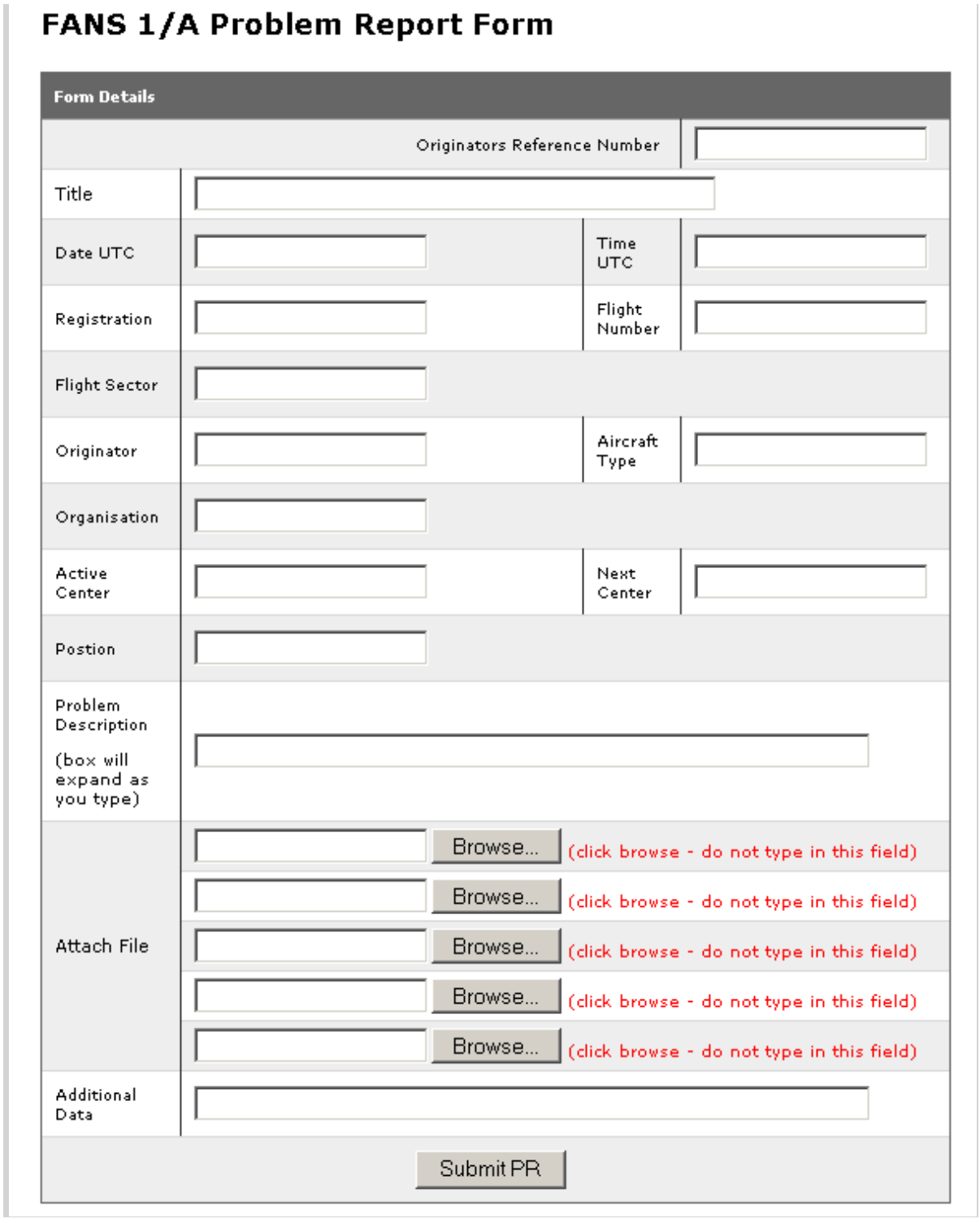

Figure D-21. Example on-line problem reporting form

D.3.3 Problem assessment

D.3.3.1 Data collection

D.3.3.1.1 The data collection phase consists of obtaining message logs from the appropriate parties (which will depend on which ANSPs and CSPs were being used and operator service contracts). Today, this usually means obtaining logs for the appropriate period of time from the CSPs 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).

D.3.3.1.2 Additionally, some aircraft-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:

a) Aircraft maintenance system logs.

b) Built-In Test Equipment data dumps for some aircraft systems.

c) SATCOM activity logs.

d) Logs and printouts from the flight crew and recordings/logs from the ANSPs 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.

D.3.3.2 Data analysis

D.3.3.2.1 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 data link message type used in the region is essential. These messages include:

a) AFN (ARINC 622), ADS-C and CPDLC (RTCA DO-258/EUROCAE ED-100) in a region operating FANS-1/A.

b) Context Management, ADS-C and CPDLC applications (ICAO Doc 9705 and RTCA DO 280B/ED-110B) in a region using ATN B1.

c) ARINC 623 messages used in the region.

D.3.3.2.2 The analysis of the decoded messages requires a thorough understanding of the complete message traffic, including:

a) Media management messages.

b) Relationship of ground-ground and air-ground traffic.

c) Message envelope schemes used by the particular data link technology (ACARS, ATN, etc).

D.3.3.2.3 The analyst must also have a good understanding of how the aircraft systems operate and interact to provide the ATS data link functions, as many of the reported problems are aircraft system problems.

D.3.3.2.4 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.

D.3.3.2.5 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

D.3.3.2.6 This information (the problem description, the results of the analysis and the plan for corrective action) is then entered into a database covering data link 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 made available to other regional central reporting/monitoring agencies on request.

D.3.4 Mitigating procedures – problem resolution

D.3.4.1 The regional monitoring agency's 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 regional monitoring agency should identify the need for such procedures and develop recommendations for implementation by the ANSPs, CSPs and operators involved.

D.4 Regional performance monitoring

D.4.1 General

D.4.1.1 This section provides guidance on periodic reporting by individual ANSP of observed system performance in their airspace that will enable regional performance metrics to be developed for the availability, CPDLC transaction time and ADS-C surveillance data transit time requirements specified in Appendix B and Appendix C.

D.4.1.2 These regional performance metrics should be made available to all interested stakeholders. The use of regional websites to enhance the distribution of these metrics should be considered. An example of such a website can be viewed at http://www.ispacg-cra.com/.

D.4.1.3 It is recommended that regions implement monthly performance reporting to obtain system performance metrics. These reports will provide data on observed availability, CPDLC transaction time and ADS-C surveillance data transit time as described herein.

D.4.2 Reporting on availability

D.4.2.1 ANSP should report on CSP notified system outages and on detected outages that have not been notified as described in paragraph D.2.4.3.2. This is used to calculate the actual availability of service provision.

D.4.2.2 For each outage the following information should be reported:

a) Time of CSP outage notification: In YYYYMMDDHHMM format or “Not Notified” if no CSP notification received.

b) CSP Name: Name of CSP providing outage notification if applicable.

c) Type of outage: Report media affected SATCOM, VHF, HF, ALL.

d) Outage start time: In YYYYMMDDHHMM format

e) Outage end time: In YYYYMMDDHHMM format

f) Duration of Outage: In minutes.

D.4.2.3 As per Appendix B only outages greater than 10 minutes are reported. An example form is shown in *Figure D-24*.

D.4.2.4 For EUR region, the number of Provider Aborts experienced by the ANSP and manually reported availability problems affecting a single aircraft should be reported. This provides an acceptable indication of the actual Availability of Use.

D.4.2.5 ANSP can use graphical analysis to track availability as illustrated in *Figure D-22* and *Figure D-23*.

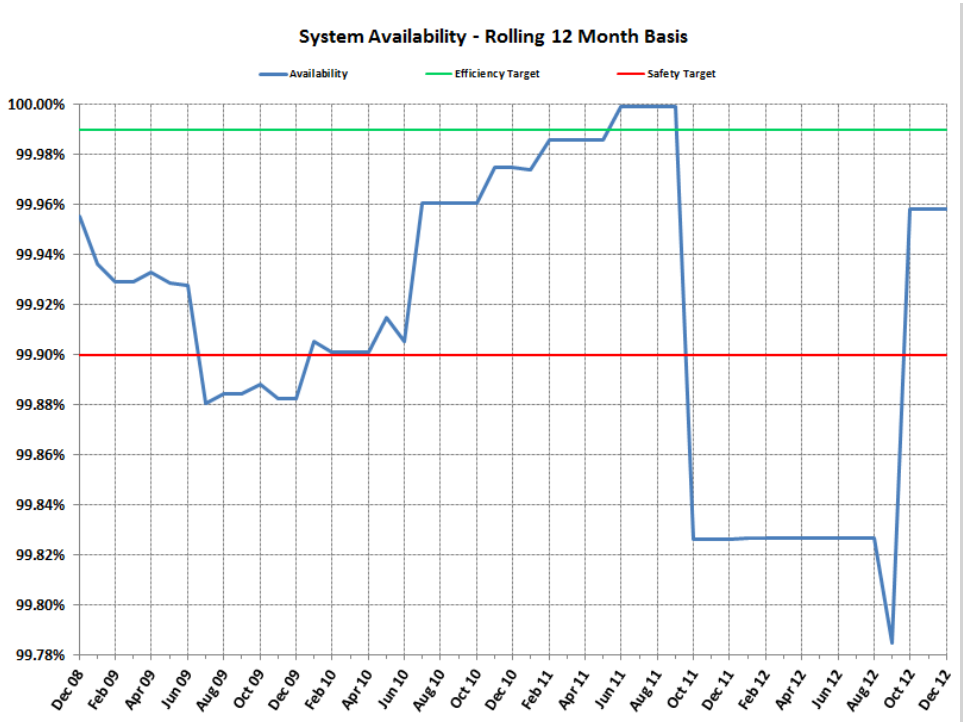

Figure D-22. Example system availability graph

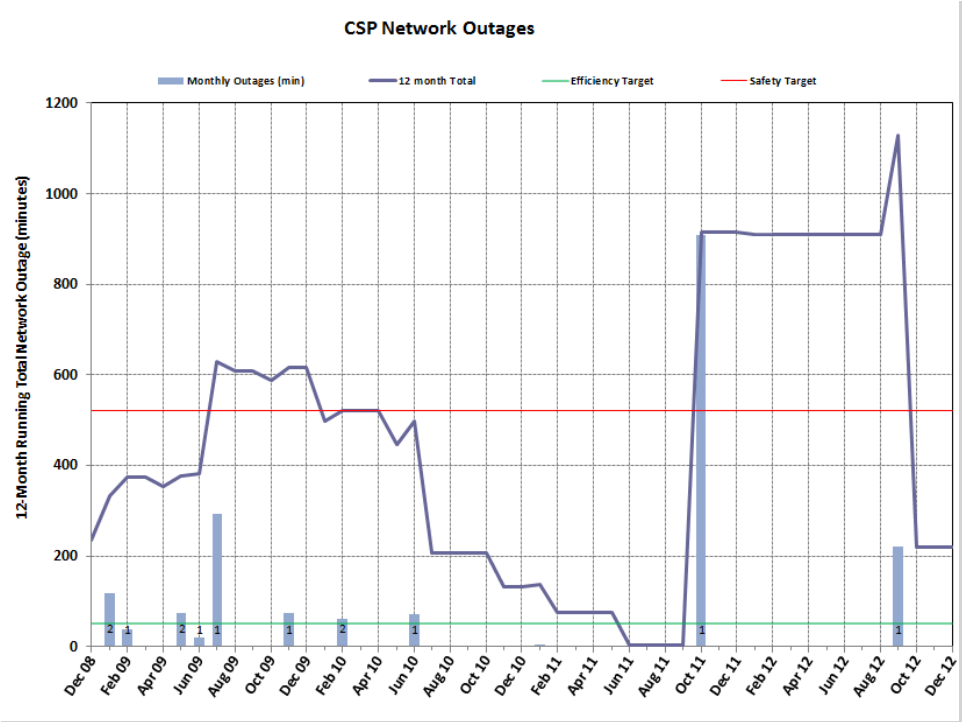

Figure D-23 Example network outage graph

D.4.3 Reporting on CPDLC actual communications performance

D.4.3.1 ANSP should report observed ACP and ACTP for RCP240 and RCP400 for different media paths using all transactions involving a WILCO response as described in paragraph D.2.4. The media paths to report are:

a) From all aircraft via all remote ground station (RGS) types.

b) From all aircraft where both uplink and downlink are via SATCOM RGS

c) From all aircraft where both uplink and downlink are via VHF RGS

d) From all aircraft where both uplink and downlink are via HF RGS

e) From all aircraft where either uplink and downlink are via HF or SATCOM RGS

D.4.3.2 A tabular reporting format can be used to capture the observed performance at the 95% and 99.9% RCP240/400 times.

D.4.3.3 As PORT is independent of media path, this need only be reported for all RGS types. An example form is shown in *Figure D-24*.

D.4.3.4 ANSPs within the EUR region should record the observed ACP and ACTP for RCP 150 and CPDLC-flight crew-initiated log files for different media paths using all transactions requiring a response. In addition, it should record the observed ACP and ACTP for DLIC-Contact/CPDLC log files and ATN B1 transport level log files, deployment and system health log files in the standardised XML-format as described in paragraph D.1.1.2. All ANSPs send the log files to the CRO for importing into PRISME (Pan-European Repository of Information Supporting the Management of EATM). PRISME is an integrated ATM data ware house for creation of various performance monitoring reports (e.g. EUR network, an ANSP, an Aircraft Operator, particular avionics configuration).

D.4.3.5 The EUR network performance monitoring reports are published on the CRO website. The reports at the other levels (per ANSP, per Aircraft Operator and per Avionics configuration) would normally be restricted to just EUROCONTROL and the relevant stakeholder.

D.4.4 Reporting on RSP data transit time

D.4.4.1 ANSP should report observed RSP data transit time for RSP 180 and RSP 400 and DO290/ED120 based performance specifications for different media paths as described in paragraph D.2.4. The media paths to report are:

a) From all aircraft via all Remote Ground Station (RGS) types.

b) From all aircraft where both uplink and downlink are via SATCOM RGS

c) From all aircraft where both uplink and downlink are via VHF RGS

d) From all aircraft where both uplink and downlink are via HF RGS

e) From all aircraft where either uplink and downlink are via HF or SATCOM RGS

D.4.4.2 A tabular reporting format can be used to capture the observed performance at the 95% and 99.9% RSP 180 and RSP 400 times. An example form is shown in *Figure D-24*.

Monthly Report of Datalink Performance by < ANSP Name> for < FIR Name > for <month> <year>					
Section 1: Availability					
CSP Notification	CSP Name	Outage Type	Start	End	Duration (Mins)
200907150005	ARINC	SATCOM	200907150001	200907150020	19
Not Notified	N/A	SATCOM	200907212233	200907212255	22
200907281515	SITA	VHF	200907281510	200907281525	15

Section 2: CPDLC					
ALL RGS			SATCOM		
ACTP RCP240	120sec	98.20%	ACTP RCP240	120sec	
	150sec	100%		150sec	
ACP RCP240	180sec	98%	ACP RCP240	180sec	
	210sec	99.70%		210sec	
PORT	60sec	98%			
ACTP RCP400	260sec		ACTP RCP400	260sec	
	310sec			310sec	
ACP RCP400	320sec		ACP RCP400	320sec	
	370sec			370sec	
VHF			HF		
ACTP RCP240	120sec		ACTP RCP240	120sec	
	150sec			150sec	
ACP RCP240	180sec		ACP RCP240	180sec	
	210sec			210sec	
ACTP RCP400	260sec		ACTP RCP400	260sec	
	310sec			310sec	
ACP RCP400	320sec		ACP RCP400	320sec	
	370sec			370sec	
SATCOM + HF					
ACTP RCP240	120sec				
	150sec				
ACP RCP240	180sec				
	210sec				
ACTP RCP400	260sec				
	310sec				
ACP RCP400	320sec				
	370sec				

Section 3: ADS-C					
ALL RGS			SATCOM		
ASP RSP180	90sec	98.80%	ASP RSP180	90sec	
	180sec	100%		180sec	
ASP RSP400	300sec		ASP RSP400	300sec	
	400sec			400sec	
VHF			HF		
ASP RSP180	90sec		ASP RSP180	90sec	
	180sec			180sec	
ASP RSP400	300sec		ASP RSP400	300sec	
	400sec			400sec	
SATCOM + HF					
ASP RSP180	90sec				
	180sec				
ASP RSP400	300sec				
	400sec				

Figure D-24. Example ANSP monthly report

D.4.5 Reporting data to enable graphical reports

D.4.5.1 In addition to the tabular performance reporting described above regions should consider presenting performance data using graphical means. Performance graphs illustrating regional communications and surveillance performance for the different media paths can be readily obtained by aggregating spreadsheet data from individual ANSP as illustrated in *Figure D-25*. This figure illustrates part of an ANSP report of actual performance for ACTP, ACP, and PORT against the RCP240 requirements for a particular media type where the number of messages received within a time is recorded at one second intervals. This type of data can be included in an ANSP monthly report to enable regional aggregation of agreed performance information to allow it to be presented in graphical form. Regions could present all or some of the data reported in tabular form per paragraphs D.4.3 and D.4.4 above in graphical form if desired. This method of reporting would also assist global aggregation.

ACTP#	ACTP%	ACP#	ACP%	CREW#	CREW%	t"
0	0.00%	0	0.00%	149	0.89%	0
0	0.00%	0	0.00%	176	1.05%	1
0	0.00%	0	0.00%	210	1.26%	2
0	0.00%	0	0.00%	322	1.93%	3
0	0.00%	0	0.00%	673	4.03%	4
0	0.00%	0	0.00%	1444	8.64%	5
1	0.01%	0	0.00%	2330	13.94%	6
29	0.17%	0	0.00%	3133	18.74%	7
988	5.91%	0	0.00%	3946	23.60%	8
3939	23.56%	0	0.00%	4731	28.30%	9
6726	40.23%	0	0.00%	5667	33.90%	10
8519	50.96%	0	0.00%	6763	40.45%	11
9566	57.22%	3	0.02%	7811	46.72%	12
10585	63.31%	13	0.08%	8794	52.60%	13
11356	67.93%	33	0.20%	9594	57.39%	14
11910	71.24%	67	0.40%	10355	61.94%	15
12401	74.18%	136	0.81%	10964	65.58%	16
12962	77.53%	232	1.39%	11483	68.69%	17
13530	80.93%	609	3.64%	11899	71.17%	18
13938	83.37%	1949	11.66%	12267	73.38%	19
14247	85.22%	3280	19.62%	12595	75.34%	20
14415	86.22%	4326	25.88%	12867	76.96%	21
14586	87.25%	5362	32.07%	13145	78.63%	22
14724	88.07%	6308	37.73%	13387	80.08%	23
14839	88.76%	7057	42.21%	13588	81.28%	24
14943	89.38%	7766	46.45%	13764	82.33%	25
15029	89.90%	8388	50.17%	13930	83.32%	26
15128	90.49%	8977	53.70%	14098	84.33%	27
15220	91.04%	9494	56.79%	14249	85.23%	28
15323	91.66%	9968	59.62%	14425	86.28%	29
15402	92.13%	10373	62.05%	14562	87.10%	30
15448	92.40%	10763	64.38%	14696	87.91%	31
15501	92.72%	11102	66.41%	14826	88.68%	32
15543	92.97%	11433	68.39%	14938	89.35%	33
15599	93.31%	11720	70.10%	15049	90.02%	34
15640	93.55%	11985	71.69%	15160	90.68%	35
15683	93.81%	12235	73.18%	15258	91.27%	36
15720	94.03%	12477	74.63%	15338	91.75%	37
15747	94.19%	12703	75.98%	15405	92.15%	38
15790	94.45%	12908	77.21%	15476	92.57%	39
15813	94.59%	13111	78.42%	15533	92.91%	40
15851	94.81%	13289	79.49%	15603	93.33%	41
16660	99.65%	16540	98.94%	16655	99.62%	200
16660	99.65%	16543	98.95%	16656	99.63%	201
16662	99.67%	16547	98.98%	16656	99.63%	202
16662	99.67%	16549	98.99%	16656	99.63%	203
16662	99.67%	16549	98.99%	16656	99.63%	204
16662	99.67%	16550	99.00%	16657	99.64%	205
16662	99.67%	16553	99.01%	16657	99.64%	206
16662	99.67%	16556	99.03%	16657	99.64%	207
16662	99.67%	16561	99.06%	16657	99.64%	208
16664	99.68%	16563	99.07%	16659	99.65%	209
16664	99.68%	16564	99.08%	16662	99.67%	210
16664	99.68%	16565	99.08%	16662	99.67%	211
16664	99.68%	16566	99.09%	16662	99.67%	212
16666	99.69%	16567	99.10%	16663	99.67%	213
16667	99.69%	16571	99.12%	16663	99.67%	214
16667	99.69%	16572	99.13%	16665	99.68%	215
16667	99.69%	16574	99.14%	16665	99.68%	216
16667	99.69%	16575	99.14%	16665	99.68%	217
16667	99.69%	16576	99.15%	16666	99.69%	218
16669	99.71%	16577	99.16%	16666	99.69%	219
16669	99.71%	16579	99.17%	16666	99.69%	220
16669	99.71%	16580	99.17%	16666	99.69%	221
16672	99.72%	16581	99.18%	16666	99.69%	222
16673	99.73%	16583	99.19%	16666	99.69%	223
16674	99.74%	16586	99.21%	16666	99.69%	224
16675	99.74%	16586	99.21%	16667	99.69%	225
16675	99.74%	16589	99.23%	16667	99.69%	226
16675	99.74%	16589	99.23%	16667	99.69%	227
16676	99.75%	16593	99.25%	16668	99.70%	228
16677	99.75%	16594	99.26%	16668	99.70%	229
16677	99.75%	16596	99.27%	16668	99.70%	230
16677	99.75%	16597	99.28%	16668	99.70%	231
16677	99.75%	16598	99.28%	16668	99.70%	232
16677	99.75%	16601	99.30%	16668	99.70%	233
16677	99.75%	16604	99.32%	16668	99.70%	234
16678	99.76%	16604	99.32%	16668	99.70%	235
16678	99.76%	16605	99.32%	16668	99.70%	236
16679	99.77%	16606	99.33%	16668	99.70%	237
16679	99.77%	16607	99.34%	16668	99.70%	238
16680	99.77%	16609	99.35%	16668	99.70%	239
16681	99.78%	16609	99.35%	16668	99.70%	240
37	0.22%	109	0.65%	50	0.30%	>240
16718	100.00%	16718	100.00%	16718	100.00%	Total

Figure D-25 Example ANSP monthly report that will enable graphical analysis

LIST OF ACRONYMS

ACAS	Airborne Collision Avoidance System
ACC	Area Control Centre
ADS-B	Automatic Dependent Surveillance–Broadcast
ADS-C	Automatic Dependent Surveillance – Contract
AFI	(ICAO) Africa-Indian Ocean (Region)
AIDC	Air Traffic Services Interfacility Data Communications
AIM	Aeronautical Information Manual
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIRE	Atlantic Interoperability Initiative to Reduce Emissions
AIS	Aeronautical Information Services
ANC	Air Navigation Commission
AN-Conf/12	Twelfth Air Navigation Conference
ANP	Air Navigation Plan
ANSP	Air Navigation Services Provider
AOC	Airline Operations Centre
APANPIRG	Asia/Pacific Air Navigation Planning and Implementation Regional Group
ARTCC	Air Route Traffic Control Centre
ASAS	Airborne Separation Assistance System
ASBU	Aviation System Block Upgrades
ATC	Air Traffic Control
ATCO	Air Traffic Controller
ATM	Air Traffic Management
ATSU	Air Traffic Services Unit
BORPC	Basic Operational Requirements and Planning Criteria
CAA	Civil Aviation Authority
CAR	(ICAO) Caribbean (Region)
CNS	Communications, Navigation and Surveillance
CO_2	Carbon Dioxide
CONOPS	Concept of Operations
CPDLC	Controller Pilot Data Link Communications
CTA	Control Area
DENICE	Danish and Icelandic
DLM	(ICAO NAT Region) Data Link Mandate
Doc 4444	*Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM)
Doc 7030	*Regional Supplementary Procedures* (SUPPs)
Doc 8168	*Procedures for Air Traffic Services – Aircraft Operations* (PANS OPS)
Doc 9613	*Performance-based Navigation (PBN) Manual*
Doc 9750	*Global Air Navigation Plan* (GANP)
DSP	Data Link Service Provider
eANP	Electronic Air Navigation Plan
EANPG	European Air Navigation Planning Group
ENGAGE	Europe-North America Go ADS-B for a Greener Environment
EUR	(ICAO) European (Region)
EUR ANP	*Air Navigation Plan - European Region* (Do 7754)
EUR/NAT	European and North Atlantic
FAB	Functional Airspace Block
fapfh	Fatal Accidents Per Flight Hour
FASID	Facilities and Services Information Document
FDPS	Flight Data Processing System
FIR	Flight Information Region
FMS	Flight Management System

FPL2012	New format of the ICAO Flight Plan Form arising from Amendment 1 to Doc 4444, 15th Edition
GANP	*Global Air Navigation Plan* (Doc 9750)
GNE	Gross Navigation Error
GOLD	*Global Operational Data Link Document*
GPI	Global Plan Initiative
GREPECAS	Caribbean/South American Regional Planning Group
GSI	Global Safety Initiative
HF	High Frequency
IATA	International Air Transport Association
IBAC	International Business Aviation Council
ICD	Interface Control Document
IFALPA	International Federation of Air Line Pilots Associations
IFATCA	International Federation of Air Traffic Controllers' Associations
IRSVTF	ICAO Inter-Regional Satellite Communications (SATCOM) Voice Task Force
iSTARS	Integrated Safety Trend Analysis and Reporting System
JFA	Joint Financing Agreement
kg	Kilogram
km	Kilometre
KPA	Key Performance Area
KPI	Key Performance Indicator
LEOS	Low Earth Orbiting Satellites
LHD	Large Height Deviation
MEL	Minimum Equipment List
MID	(ICAO) Middle East (Region)
MNPS	Minimum Navigation Performance Specifications
MTOW	Maximum Take Off Weight
NACC	North American and Caribbean (Office of ICAO)
NAT	(ICAO) North Atlantic (Region)
NAT ANP	*Air Navigation Plan - North Atlantic Region* (Doc 9634)
NAT ATMG	North Atlantic Air Traffic Management Group
NAT CC ICD	*NAT Common Coordination Interface Control Document* (NAT Doc 002)
NAT CMA	North Atlantic Central Monitoring Agency
NAT CNSG	North Atlantic Communications, Navigation and Surveillance Group
NAT DLMA	North Atlantic Data Link Monitoring Agency
NAT DMO	North Atlantic Document Management Office
NAT EFG	North Atlantic Economic and Financial Group
NAT FAM	NAT Fee Analysis Model
NAT IMG	North Atlantic Implementation Management Group
NAT MWG	North Atlantic Mathematicians' Working Group
NAT OISO WG	NAT Oceanic Interface Safety Occurrences Working Group
NAT OTS	North Atlantic Organized Track System
NAT SOG	North Atlantic Safety Oversight Group
NAT SPG	North Atlantic Systems Planning Group
NM	Nautical Mile (approximately 1852 m)
OCA	Oceanic Control Area
OPLINKP	Operational Data Link Panel
PANS	Procedures for Air Navigation Services
PANS-ATM	*Procedures for Air Navigation Services – Air Traffic Management* (Doc 4444)
PANS-OPS	*Procedures for Air Navigation Services – Aircraft Operations* (Doc 8168)
PBN	Performance Based Navigation
PfA	Proposal for Amendment
PIRG	Planning and Implementation Regional Group
PORT	Pilot Operational Response Time
RA	Resolution Advisory

RCP	Required Communications Performance
RLatSM	Reduced Lateral Separation of 25 Nautical Miles
RLongSM	Reduced Longitudinal Separation of 5 minutes between ADS-C equipped aircraft
RNP	Required Navigation Performance
RPI	Regional Planning Initiative
RVSM	Reduced Vertical Separation Minimum
SARPs	Standards and Recommended Practices
SASP	Separation and Airspace Safety Panel
SATCOM	Satellite Communication
SATVOICE	Satellite Voice Communications
SBD	(Inmarsat) Short Burst Data
SDR	(NAT) Service Development Roadmap
SES	Single European Sky
SESAR	Single European Sky ATM Research Programme
SJU	SESAR Joint Undertaking
SLOP	Strategic Lateral Offset Procedures
SRR	Search and Rescue Region
SUPPs	*Regional Supplementary Procedures* (Doc 7030)
SVGM	SATVOICE Guidance Material
TA	Traffic Advisory
TF	Task Force
TLS	Target Level of Safety
ToR	Terms of Reference
VHF	Very High Frequency
WG/SRP	Working Group for Strategic Review and Planning (of the ANC)

— END —