European and North
Atlantic Office

SUMMARY OF DISCUSSIONS OF

THE NAT AIR TRAFFIC MANAGEMENT GROUP

THIRTY-FIFTH MEETING

(Paris, France, 8 to 12 March 2010)

1.   **Introduction**

1.1   The thirty-fifth meeting of the North Atlantic Air Traffic Management Group (NAT ATMG) was convened with the principal objective of addressing the work programme established for it by the NAT Implementation Management Group (NAT IMG) as well as to focus on the following:

   a)   plan for reductions in longitudinal and lateral separation minima;

   b)   discuss ways and means to optimize the use of High Frequency (HF) communications;

   c)   discuss ways and means to reduce misunderstandings of clearances and procedures;

   d)   examine the NAT Region operating concept with regard to the provision of oceanic clearances; and

   e)   update NAT Region documentation with regards to Air Traffic Services (ATS) operational contingency situations and the future Air Traffic Management (ATM) concept of operations.

1.2   Mr William Muir chaired the meeting. Mrs Carole Stewart-Green of the European and North Atlantic (EUR/NAT) Office of ICAO was the Secretary. She was assisted by Ms Patricia Caviston of the same office. The Group welcomed Mr Muir as the Rapporteur of the current meeting, pending the appointment of a Rapporteur by the NAT Implementation Management Group (NAT IMG) (paragraph 8.7 refers). The Group welcomed Mr Noel Dwyer as a new member from Canada, Mr Paul Hagerty as the new member from United Kingdom and Mr Paul Fairley as a new member from United States. The Group expressed its deep appreciation to Mr Finlay Smith from United Kingdom and Mr Peter Hruz from United States for their valued and extensive contributions over the years and wished them the best of luck in their new endeavours. Lists of participants and of contacts are at **Appendix A**.

1.3   At its opening session, the Group adopted the following agenda:

   a)   Report on activities since NAT ATMG/34;

   b)   Reductions in separation minima;

   c)   Review the NAT Regional Supplementary Procedures;

   d)   Update procedures and requirements;

   e)   Review and update documentation;

f)   Safety Management; and

g)   Any other business

1.4   In addition to the list of papers specified in **Appendix B**, the Group also considered other documentation that was made available during the course of the meeting.

2.   Report on activities since NAT ATMG/34

Review the NAT ATMG/34 follow-up action list

2.1   The Group reviewed the follow up action lists from NAT ATMG/34 and agreed that most items had been completed or were reported on during the course of the meeting. With regard to an action to review all *Regional Supplementary Procedures* (SUPPs) (Doc 7030) provisions related to the application of Reduced Vertical Separation Minimum (RVSM), the Group agreed that given the workload and priorities associated with its current work programme, this item should be removed from its task list. Items not fully addressed during the course of the meeting would be retained on a separate follow up list from that for items arising from NAT ATMG/35 (paragraph 8.6 refers).

2.2   With regard to the action to verify that State documentation aligned with the information contained in the *NAT Minimum Navigation Performance Specifications Airspace Operations Manual* (NAT MNPSA Operations Manual) (NAT ATMG follow up 34-09) all States concerned confirmed alignment.

2.3   With regard to the action for the Group to coordinate as necessary with the NAT Document Management Office (NAT DMO) to provide updated charts when necessary for the NAT MNPSA Operations Manual, it was agreed that such updates would be coordinated on a case by case basis. In this regard, Ireland advised that, due to recent changes in the Shannon Flight Information Region (FIR), some charts required updates and would coordinate with the Secretariat concerning the matter.

Review the outcome of NAT IMG/35

2.4   The Group reviewed the outcome of the thirty-fifth meeting of the NAT IMG, which took place from 10 to 13 November 2009 in Reykjavik, Iceland. The Group noted that the *2012 FPL Task Force*, a joint task force of EUROCONTROL and the EUR/NAT Office of ICAO, had been formed so as to coordinate the activities of all States in the EUR Region to implement Amendment 1 to *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM) (Doc 4444), 15th Edition. In this regard it was noted that Iceland would participate in the activities of the Task Force.

2.5   The Group was informed that the NAT IMG was planning to hold a users conference in September 2010 in Reykjavik, Iceland (NAT SPG Conclusion 45/14 refers). User organisations had been requested to consult with their members to determine the extent of the need for the conference so that the results of the consultations could be the basis for further planning. Coordination for a users conference would take place between the NAT IMG and the NAT Safety Oversight Group (NAT SOG). In this regard, IATA informed the Group that some of its members had expressed concerns that the cost of travelling to the conference might limit participation, since few airlines served Iceland and therefore most attendees would have to purchase tickets. The Rapporteur of the NAT OPS/AIR sub group advised that it would be desirable for planning in this regard to be finalised, since there was a potential conflict with a EUR Regional Monitoring Agency (RMA) workshop on Altimetry System Error (ASE), which was planned to take place during the week of 6 to 10 September 2010. The foregoing would be brought to the attention of the NAT IMG.

2.6   The Group noted that, in coordination with the NAT Safety Analysis and Reduced Separation Implementation Group (NAT SARSIG), the NAT IMG had tasked the NAT ATMG with

analysing and developing mitigation for errors related to the input and display of ½ degree waypoints (NAT SPG Conclusion 45/22 refers). This task was a particular aspect of the implementation planning for reduced lateral separation (paragraphs 3.4 and 7.17 also refer).

2.7   The Group was advised of the NAT IMG's endorsement of several proposals for amendment to the NAT SUPPs that had been initiated or commented upon by the NAT ATMG (paragraphs 4.2 and 4.3 also refer). With regard to the proposal that would recognise the operational use of Controller Pilot Data Link Communications (CPDLC), Automatic Dependant Surveillance – Contract (ADS-C) and Flight Management Computer Waypoint Position Reporting (FMC WPR) in the NAT Region, the Group was advised this proposal, although endorsed by the NAT IMG, would not be initiated until the NAT IMG had agreed that the NAT Data Link Monitoring Agency (NAT DLMA) was providing the necessary continuous monitoring of the system in accordance with NAT SPG Conclusion 42/6.

2.8   The Group was informed that the NAT IMG had determined that the periodic reporting rate to be used when applying reduced longitudinal separation between ADS-C equipped aircraft (RLongSM) was 18 minutes. Additionally, it had been determined that the current communications system performance in the NAT Region supported the assumptions used in the RLongSM Collision Risk Model (CRM) (paragraph 3.2 also refers).

2.9   The Group noted the NAT IMG's consensus that, rather than reducing NAT MNPS separation to 50 Nautical Miles (NM), the appropriate avenue would be to implement 50 NM separation between Required Navigation Performance (RNP) 10 approved aircraft. Further, it was noted that this would be progressed by the NAT SARSIG (paragraph 5.4 also refers).

2.10   The Group reviewed the information provided by the NAT IMG concerning the relationship between the phased implementation of reduced horizontal separation minimum and the data link mandates (NAT IMG/35 Summary of Discussions Appendix E refers). In particular, it was noted that the NAT Region data link mandate had as a prime intent ensuring to the extent possible that aircraft would be fitted with the appropriate equipment to participate in NAT Region data link services prior to the deadlines established in the EUR Region data link mandate, thereby eliminating the need for double equipage.

2.11   The Group was advised that the NAT IMG had determined that calling notices for meetings would be sent at least 5 weeks prior to each meeting and that the NAT ATMG would alternate its meetings between the Sates and the EUR/NAT Office of ICAO (paragraph 8.9 also refers). Finally, the Group was informed concerning the plans of the NAT IMG with regards to appointing a new Rapporteur for the NAT ATMG (paragraph 8.7 also refers).

2.12   Finally, the Group noted that the NAT IMG had proposed modifications to the Fast Track Procedure for raising issues to the NAT Safety Oversight Group (NAT SOG) which clarified the coordination between the NAT SOG, NAT IMG and NAT SPG (paragraph 7.2 also refers).

Review the Outcome of NAT CNSG/01

2.13   The Group reviewed the outcome of the first meeting of the NAT Communications, Navigation and Surveillance Group (NAT CNSG), which had taken place in Paris, France from 28 September to 2 October 2009. The Group recalled that the NAT CNSG had formerly been the NAT FANS Implementation Group (NAT ATMG/34 Summary of Discussions paragraph 2.2 refers).

2.14   The Group noted that the NAT CNSG had sought a clearer statement of the safety benefits expected from initiating a standard procedure for forwarding aircraft position reports (POS reports). These benefits were described in the material developed to support the implementation of the procedure (paragraph 5.5 refers), which would be coordinated with the NAT CNSG.

2.15   The Group noted that the NAT CNSG was maintaining statistics regarding FANS 1/A usage in the Gander, New York, Reykjavik and Santa Maria Oceanic Control Areas (OCA)/FIRs. The NAT DLMA would be the central location for collecting these statistics and would provide collated material to the NAT CNSG. The Group noted that FANS 1/A equipage appeared to have stabilised at approximately 40% of the NAT Region fleet.

2.16   The Group was informed that the NAT CNSG, through its Aeronautical Communications sub group (NAT ACSG), was gathering information concerning so-called "nuisance" voice reports. This information, once mature, would be used to develop recommendations to support the goal of optimising the use of High Frequency (HF) voice resources.

2.17   The Group noted that the NAT CNSG was gathering information concerning aircraft equipage and would attempt to develop a projection of future equipage.

2.18   The Group was advised of progress towards addressing the risk of route discontinuities when route clearances were issued via CPDLC. The Group noted that once mature, this would be the basis of supporting procedures which would be developed in coordination with the NAT ATMG (paragraph 6.8 also refers). In this context, the representative from IFALPA advised the Group that, given the safety benefits inherent in the fact that CPDLC route clearances could be loaded directly into the Flight Management System (FMS), the risks of route discontinuities should not prevent implementing the ability to provide route clearances via CPDLC (paragraphs 3.4 and 7.17 also refer).

2.19   The Group reviewed the document change control process that had been developed for the *Global Operational Data Link Document* (GOLD) and noted no concerns. Further discussions related to the planned endorsement of the GOLD for the purposes of documenting NAT Region data link guidance and procedures is provided at paragraphs 6.6 through 6.8.

Review the outcome of NAT SARSIG/10

2.20   The Group reviewed the outcome of the tenth meeting of the NAT SARSIG, which had taken place in Paris, France from 13 to 16 October 2009.

2.21   The Group noted the input that querying flight crews concerning observed deviations in Mach number (NAT ATMG/34 Summary of Discussions paragraph 7.16 refers) could result in unnecessary communications without any attendant safety benefit. Further, the Group was advised that, because of the instantaneous variability of the Mach number included in ADS-C periodic reports, this value would not be conformance-monitored.

2.22   The Group was informed that the Operations and Airworthiness (OPS/AIR) sub group of the NAT SARSIG would be considering the issue of whether or not operators should require a specific authorisation to use oceanic data link applications.

2.23   With regard to the planned implementation of RLongSM, the Group was advised that the detailed position information in a position report that was in conformance would not be used to update the flight profile held in the Gander Automated Air Traffic System (GAATS) or the Shanwick Automated Air Traffic System (SAATS).

2.24   With regard to queries from the NAT ATMG concerning reduced lateral separation that had been raised originally to NAT SARSIG/9 (NAT ATMG/33 Summary of Discussions paragraph 2.30 refers), the Group was advised that the NAT SARSIG had determined it was premature to provide specific answers, although it was likely that the answers would be positive. The NAT ATMG's ongoing interest would be advised to the next meeting of the NAT SARSIG.

3. Reductions in separation minima

3.1   The Group examined a list of issues identified by the United States concerning the related NAT Region data link mandate and the initiative to reduce lateral separation to 25 NM in the NAT Region. The Group agreed that the issues were valid, but that the items identified as requiring decisions or answers lay outside its remit, and recommended that they be raised to the NAT IMG. In considering the question of whether the safety assessment for the implementation of 25 NM lateral separation should take account of the application of RLongSM in the same airspace, the Group agreed that it should. This would be brought to the attention of the NAT IMG.

Plan for the reduction in longitudinal separation

3.2   The Group was advised that a trial implementation of reduced longitudinal separation of 5 minutes between ADS-C equipped aircraft was planned to commence on 25 May 2010. Initially, the application of the reduced minimum would be applied only between eastbound aircraft in the Shanwick OCA east of 30° West (paragraph 2.8 also refers).

Plan for the reduction in lateral separation

3.3   The Group examined a draft task list to support the implementation of reduced lateral separation of 25 NM. After some additions and modifications, the Group agreed that the resulting draft task list, which is at **Appendix C**, should be presented to the NAT IMG for its review, modification and endorsement as appropriate. In preparing the list, the Group also suggested who (such as States or specific NAT SPG contributory groups) might be responsible for completion of the tasks. The Group agreed to recommend that if the task list was endorsed, specific tasks identified on the list should be cross-referenced in the NAT Service Development Roadmap so as to maintain the necessary linkages and assist in monitoring progress. Finally, the Group noted that Task 8 (Safety Assessment) and Task 26 (Performance Monitoring) would likely require changes in reporting criteria for NAT Region occurrences to ensure that the necessary information was available for the pre-implementation safety assessment and to account for the the likelihood that a new definition of what would constitute a Gross Navigation Error (GNE) would be required for a reduced lateral separation environment (which would likely be within the remit of the NAT SARSIG). All of the foregoing would be brought to the attention of the NAT IMG.

3.4   The Group reviewed an updated planning document for implementation of reduced lateral separation of 25 NM. The Group recommended that specific mention be made in the document that the application of the Strategic Lateral Offset Procedures (SLOP) would be taken into account in safety assessments, in accordance with the advice provided by the NAT SARSIG in this regard (NAT SARSIG/9 Summary of Discussions paragraph 5.5 refers). The representative from IFALPA emphasised that organisation's position that the use of CPDLC to issue route clearances was seen as a necessary mitigation against the likelihood of errors when inputting ½ degree waypoints (paragraphs 2.18 and 7.17 also refer). The Group provided other comments and suggestions and was advised that an updated document taking account of the input would be presented to the next meeting of the NAT SARSIG which was scheduled to take place from 12 to 16 April 2010 and subsequently to NAT IMG/36, scheduled to convene from 18 to 21 May 2010.

4. Review the NAT Regional Supplementary Procedures

Status of amendment proposals to the NAT SUPPs

4.1   The Group was advised that the proposal to amend the NAT SUPPs to require the insertion of the aircraft registration in Item 18 of the ICAO flight plan form (FPL) had been approved.

4.2   The Group was advised that the proposal to amend the NAT SUPPs to formalise the use of CPDLC, ADS-C and FMC WPR in the NAT Region (NAT ATMG/34 Summary of

Discussions, Appendix E-3 refers), had been endorsed in principle by the NAT IMG but would not be submitted until all of the requirements of NAT SPG Conclusion 42/6 had been satisfied (paragraph 2.7 also refers). Concerning the proposal to amend the NAT SUPPs to allow the use of Satellite Communications (SATCOM) voice for routine Air Traffic Services (ATS) communications (NAT ATMG/33 Summary of Discussions Appendix D refers), the Group was advised that ICAO Headquarters had delayed further processing of the proposal pending the outcome of a task force formed to review the NAT Region guidance material on the subject.

4.3   The Group was advised that Canada had submitted the proposal for amendment concerning the format for issuing oceanic clearances via voice (NAT ATMG/35 Summary of Discussions Appendix E-5 refers) and that it was expected that the proposals for amendment concerning flight planning requirements (NAT ATMG/35 Summary of Discussions, Appendix E-1 and E-2 refer) would be submitted by Iceland in the near future.

Propose amendments to the NAT SUPPs

4.4   The Group did not review or develop any proposals to amend the NAT SUPPs.

5.   Update procedures and requirements

NAT DATA LINK MANDATE

5.1   IBAC informed the Group of its concerns regarding the NAT Data Link Mandate (NAT SPG Conclusion 45/11 refers) arising from the fact that the majority of business aviation aircraft would not be able to equip in time to meet the deadlines specified in the mandate due to the lack of FANS 1/A or equivalent equipment. The Group recalled that the NAT SPG, in formulating the mandate, had also tasked the NAT IMG to develop an implementation plan that included provisions for aircraft not able to be equipped within the time frames specified. Considering the various initiatives in the NAT Region, such as the Automatic Dependant Surveillance – Broadcast (ADS-B) implementations by Canada and Iceland, the RLongSM initiative and the planned reduction of lateral separation to 25 NM, IBAC was concerned that few options would remain for business aviation aircraft to transit NAT Region airspace in a cost efficient manner.

5.2   The Group noted that the flight level bands specified in the concept of operations for the reduction in lateral separation (NAT SPG Conclusion 45/10 refers) were those traditionally encompassed by the NAT Organised Track System (OTS), namely FL350 to FL400, rather than the entire MNPS airspace altitude band. It was also noted that any implementation plan would need to balance the needs of non-equipped airspace users against those of operators who had invested in the necessary equipment, while also recognising that, for some operators, the necessary equipment did not yet exist. In considering the possibility of initiating a waiver system, the Group expressed concerns that granting waivers might delay equipage. In concluding its discussion, the Group agreed that a concept of operations for accommodating non-equipped aircraft should be developed and the United Kingdom agreed to lead this activity. The Group concurred that such a concept would be necessary in order to determine whether a waiver system or an exemption system was possible and if so, what form it should take. IBAC agreed to provide information concerning business aircraft operations with regards to preferred altitude bands and routes. A draft concept would be presented to NAT ATMG/36.

5.3   Finally, IBAC requested that consideration be given to establishing criteria for expanding the exclusionary airspace encompassing the agreed altitude band for the planned reduction of lateral separation to 25 NM. The criteria could, for example, include determining the percentage of aircraft that should be equipped in order to proceed as intended after 2013. The Group agreed that this request, along with the foregoing, should be brought to the attention of the NAT IMG.

TRANSITION FROM MNPS TO PBN IN THE NAT REGION

5.4   The Group reviewed draft material being developed to define the tasks necessary to transition from MNPS to a Performance Based Navigation (PBN) specification in the NAT Region (paragraph 2.9 also refers). The Group noted that the preliminary plans assumed that MNPS authorisations would remain valid for the foreseeable future and that more work was required to establish a policy whereby operators with an RNP 10 approval could operate in MNPS airspace. It was noted that the NAT OPS/AIR subgroup had not supported the dis-establishment of NAT MNPS airspace nor the elimination of a requirement to obtain authorisation prior to operating in MNPS airspace. The Rapporteur of the NAT OPS/AIR sub group confirmed it was that Group's position that a specific NAT Region approval should remain a requirement. The Group expressed its concern that such a requirement would eliminate some of the benefits of transitioning to PBN. The Group provided comments and suggestions and noted that an updated version of the material would be presented to the NAT SARSIG at its next meeting.

FORWARDING OF POS MESSAGES

5.5   The Group recalled that it had been tasked by the NAT IMG to investigate and propose how to document a requirement to forward POS messages (NAT IMG/35 Summary of Discussions paragraph 2.34 refers). The Group endorsed a proposal that an ATSU receiving a position report should forward the position to any ATSU who's Area of Common Interest included the position being reported (Position 1), the next position (Position 2) or the next+1 position (Position 3). The Group agreed that such a requirement would assist the receiving ATSU to detect that the transferring ATSU had failed to coordinate the flight or that there was a discrepancy between the coordinated profile and the actual aircraft profile. Accordingly, the Group agreed to recommend that the *NAT Common Coordination Interface Control Document* (NAT ICD) and the NAT Aeradio ICD be modified to incorporate the following text with regard to the forwarding of POS reports, whether received via voice or data link:

Forwarding of position reports

Forwarding of position report messages entails that a centre receiving a position report, forwards the position report to any other centre that may be affected by the aircraft. This function enables the detection of the following operational errors:

a)   The receiving centre may detect that the transferring centre has failed to coordinate the aircraft; and

b)   The receiving centre may detect that there is a discrepancy between the coordinated profile and the actual aircraft profile.

Forwarding position reports therefore has the potential to bring a significant safety improvement to the system.

A position report message normally contains the following information:

Position 1 (reported position)

Actual time at position 1

Level

Position 2

Estimated time at position 2

Position 3

If any of the positions in the position report are located within the Area of Common Interest (ACI) of another centre then the original recipient of the report shall forward the report to that centre.

5.6   The foregoing would be brought to the attention of the NAT CNSG and the NAT IMG.

Optimization of HF voice resources

5.7   The Group reviewed a draft concept of operations being developed to support the use of "non-integrated" SATCOM voice systems in the NAT Region. The Group supported a proposal that the terminology used should distinguish between "integrated" and "non-integrated" systems by referring instead to "installed" and "portable" SATCOM voice systems, so as to clarify which systems were being discussed. The Group noted that the concept would be further developed and presented to NAT ATMG/36.

5.8   The Group recalled the information provided by the United States concerning an initiative to provide SIGMET over VOLMET (NAT ATMG/33 Summary of Discussions paragraph 5.6 and NAT ATMG/34 Summary of Discussions, paragraph 5.2 refer). Iceland advised that SIGMET were delivered via CPDLC when possible and Portugal advised they were investigating providing a similar service. Canada, Ireland and United Kingdom confirmed that SIGMET were delivered via voice or VOLMET as appropriate for the flights concerned. The NAT CNSG would be informed of the foregoing.

ELIMINATION OF UNNECESSARY SELCAL CHECKS

5.9   The Group discussed a proposal to revoke the procedural requirement for flights with an active CPDLC connection to complete a Selective Calling (SELCAL) check with subsequent NAT Region aeradio stations after the initial check associated with entering oceanic airspace. The proposal contended that once the initial SELCAL check had verified that the equipment was operating properly, it was not necessary for each subsequent aeradio station to re-verify this fact. The Group also recalled that it had reviewed and not supported a proposal to use CPDLC to provide HF frequencies via CPDLC (NAT ATMG/32 Summary of Discussions paragraph 5.1 refers).

5.10   The Group confirmed that although the SELCAL check served the ostensible purpose of verifying the operation of the SELCAL equipment, the procedure also served to establish two-way voice communication with the flight and in particular confirmed that ATC would be able to establish voice communication with the flight. Such assurance was viewed as necessary in the event that ATC intervention was required and in view of the fact that CPDLC communications were not always reliable, was not suitable for non-standard messages and did not satisfy the Annex 2 requirements concerning establishing and maintaining two-way voice communications (Annex 2, paragraph 3.6.5.1 Note 2 refers). The Group also noted that the availability of HF voice as a back up communications medium was an integral assumption in the safety cases which had been completed to support the use of data link in the NAT Region. Accordingly, the Group did not support elimination of the current requirements. The Group noted that in future, when SATCOM voice was established as a means of routine ATS communication and CPDLC had become more reliable, it might be possible that SELCAL checks subsequent to the initial check could be safely eliminated. This issue would be kept under review and the NAT IMG would be advised of the foregoing.

Oceanic clearances

5.11   The Group discussed a proposal to eliminate the requirement for flights to obtain an oceanic clearance, in accordance with the NAT IMG's direction that the NAT ATMG should examine this possibility (NAT IMG/34 Summary of Discussions, paragraph 4.3 refers). The Group noted that the current practice provided a means to verify the route to be flown for the oceanic portion of the flight, which was viewed as a safety mitigation and the routine assignment of Mach number, which supported an efficient application of longitudinal separation of less than 15 minutes.

5.12   The Group was advised that, in the Pacific (PAC) Region, there was no specific oceanic clearance given; flights would be cleared "via flight plan route" from departure to destination. The

Group also noted that the concept of ensuring that all flights were on conflict free profiles from oceanic entry to exit only pertained to operations through the Gander and Shanwick OCAs. The Group acknowledged that there were significant differences between the operational practices in oceanic airspace in the NAT and PAC Regions and between the northern and southern portions of NAT Region oceanic airspace.

5.13   Accordingly, the Group agreed to undertake a thorough comparison between the operational practices in the NAT and PAC oceanic airspaces and between those in the northern and southern portions of the NAT oceanic airspace. The goal of this analysis would be to identify the reasons for the differences, whether they were operational requirements, technical capabilities, efficiency considerations or safety requirements. The exercise would then seek to identify what practices could or should be harmonised. Canada agreed to lead this activity and provide information to NAT ATMG/36.

NAT phraseology

5.14   The Group reviewed standard phraseology for the NAT Region which had been agreed by NAT SPG/28, material agreed upon at NAT ATMG/24 concerning phraseology to be used in the event of a re-route and the consolidated material which had originally been reviewed at NAT ATMG/34. The Group agreed that NAT Region specific examples of phraseology should be documented in the NAT SUPPs. Once this task was endorsed by the NAT IMG, the Secretary agreed to prepare an initial outline of a draft proposal for amendment and solicit comments from the Group so as to ensure that a mature draft would be reviewed at NAT ATMG/36. The NAT IMG would be informed.

Develop procedures for ADS-B

5.15   The Group reviewed information concerning the requirements for aircraft certification and crew qualification in order to be eligible for ADS-B services in the northern part of the NAT Region. The Group was advised that it was not intended to initially designate airspace where ADS-B services would be provided as being segregated or exclusionary. Canada and Iceland confirmed that information concerning the areas where ADS-B services would be provided would be published in accordance with the relevant Annex 15 provisions.

5.16   The Group agreed that various documents should be amended to take account of the implementation of ADS-B in the NAT Region. The Secretary agreed to coordinate a draft proposal to amend the NAT ASM, Canada agreed to develop a proposal to amend the NAT MNPSA Operations Manual and the Group agreed that each of the ANSPs concerned should develop amendments to their sections of the *Air Traffic Management Operational Contingency Plan, North Atlantic Region* (NAT Doc 006) if required. The resulting proposals would be presented to NAT ATMG/36. The Secretary agreed to coordinate with the NAT DMO to ensure that the ADS-B implementation would be taken into account during the currently ongoing update of NAT Doc 001. The Group agreed to recommend to the NAT IMG that the NAT OPS/AIR subgroup be requested to determine whether a proposal to amend the NAT SUPPs should be developed to incorporate technical requirements.

5.17   The representative from IATA expressed that organisation's hope that coordination would be effected to ensure technical harmonisation between the ADS-B implementations in the NAT Region and that being planned by the United States in the Gulf of Mexico. IATA was concerned that possible differences between these programmes had not been identified to the NAT ATMG and therefore it was not clear whether operators would face differing operations specification and equipage requirements. The Group agreed to recommend to the NAT IMG that the NAT OPS/AIR subgroup be tasked with keeping this issue under review and providing recommendations when and as appropriate.

Develop procedures for ATSA-ITP

5.18   The Group was advised that further development of Air Traffic Situational Awareness – In Trail Procedure (ATSA-ITP) would be effected under the auspices of the SESAR initiative.

6.   Review and update documentation

6.1   The Group was presented with a proposal to develop a global Interface Control Document (ICD) to amalgamate the ICDs for the NAT and Asia and Pacific (APAC) Regions. The Group supported the principle of developing a global ICD so long as Air Traffic Services Units (ATSU) retained the possibility to cater for specific interface needs by way of bilateral agreements. The Group, recalling that updating the NAT ICD was a task on the work programme of the NAT CNSG, agreed to forego a technical review. The Group noted, however, that it might not be accurate to classify the current draft as a global ICD, given that it encompassed only the NAT and APAC Regions.

6.2   The Group was advised that the ICAO EUR/NAT Secretariat had completed the task of migrating the content of the NAT PCO website to the ICAO EUR/NAT website: www.paris.icao.int. The migration removed out of date documents from the public domain and provided access to NAT Region documents via a single source (paragraph 7.13 also refers). Documentation pertinent to the NAT Region could be accessed by following the links to Documents and then to NAT Docs. Documentation supporting the work of the NAT SPG and its contributory groups would be accessed via a restricted area on the ICAO EUR/NAT website.

6.3   The Group noted that a new type of document, the NAT Operations Bulletin (NAT Ops Bulletin), had been created to facilitate the posting of "third party" documents such as Aeronautical Information Circulars (AIC), guidance material for clearance delivery via data link, etc. NAT Operations Bulletins also allowed the NAT SPG to directly promulgate information such as the Oceanic Errors Safety Bulletin, flight crew guidance for 5 minutes separation between GNSS equipped aircraft, etc. The NAT OPS Bulletin Checklist contained a list of all current NAT Operations Bulletins and would be re-issued whenever a Bulletin was added or deleted.

NAT Contingency Plans (NAT Doc 006)

6.4   The Group reviewed proposed changes to the Reykjavik section of the NAT Contingency Plan. The Group agreed that, considering the dynamic nature of some changes which should be reflected as soon as practicable in the Contingency Plan, it should not be required that the NAT ATMG endorse all changes. Accordingly, the Group agreed that individual States should coordinate directly with the ICAO Secretariat when updates were required to "their" section of NAT Doc 006. The Group also agreed that changes to the Plan should be notified. Accordingly, the Secretary agreed that the NAT ATMG contact list would be used to send an email notification when NAT Doc 006 would be amended. The Group would then further disseminate the information as deemed necessary. The Secretary agreed to take the necessary steps to update the Reykjavik section of the Plan as soon as practicable. The NAT IMG's endorsement of the foregoing would be sought.

6.5   The Group considered a proposal to include in NAT Doc 006 information concerning actions to be taken in the event of a data link failure in the NAT Region. Canada and Ireland agreed to further develop generic information taking account of the input provided by the Group and to coordinate the development of an amendment to incorporate the procedures provided by each NAT ANSP. The resulting amendments would be submitted to NAT ATMG/36.

NAT data link Guidance Material

6.6   The Group reviewed the results of the Global Operational Data Link Document (GOLD) ad-hoc working group's consideration of suggestions to include phraseology to address conformance alerts arising from ADS-C conformance monitoring (NAT ATMG/34 Summary of Discussions, paragraphs 7.14 and 7.15 refer). The Group also reviewed how certain comments had

been addressed as suggested revisions to the GOLD. The Group, recalling that the NAT IMG was expected to endorse the GOLD (and therefore subsume the *Guidance Material for ATS Data Link Services in the North Atlantic Airspace* (NAT Data Link Guidance Material)) at its next meeting, agreed to advise the Secretary, no later than 1 May 2010, as to whether or not the GOLD should be endorsed. The Secretary would then inform the NAT IMG accordingly.

6.7   The Group was advised of the results of analyses of ATCO responses to CPDLC downlink messages requesting information as to when flights could expect higher or specified flight levels. The Group recalled that it was considering whether to reinstate the use of UM7 EXPECT CLIMB AT [time], UM8 EXPECT CLIMB AT [position], UM9 EXPECT DESCENT AT [time] and UM10 EXPECT DESCENT AT [position]. The Group noted with concern that even where the use of UM7, UM8, UM9 or UM10 was permitted, there was a wide variety of free text messages being used. The Group agreed to recommend that the use of UM7, UM8 UM9 and UM10 be reinstated, and that ATCOs be encouraged to use these predefined CPDLC message elements to response to "when can we expect" messages, rather than composing free text responses. Further, the Group agreed to recommend that a free text element, THIS IS NOT A CLEARANCE, be pre-pended to any uplink message advising a flight when or where to expect something, whether such a message used predefined or free text message elements. The United Kingdom advised that it would explore whether pre-pending THIS IS NOT A CLEARANCE would enable regulatory approval to use UM7, UM8 UM9 and UM10. Finally, the Group agreed to recommend avoiding composing uplink messages that would contain the word EXPECT and a specific flight level. Considering that it was anticipated that the GOLD would be endorsed, the Group agreed not to amend the NAT Data Link Guidance Material and the United States agreed to coordinate the necessary change request for the GOLD to reflect the reinstatement of UM7, UM8 UM9 and UM10 for use in the NAT Region and to incorporate the Group's recommendations.

6.8   The Group was advised that Canada was developing a proposal to amend the GOLD to incorporate procedures for issuing CPDLC re-route clearances. The Group agreed to review the proposal and coordinate directly with their respective NAT CNSG members and the NAT CNSG Rapporteur concerning any comments, questions or concerns regarding the proposal, which would be presented to the next meeting of the NAT CNSG (paragraph 2.18 also refers).

6.9   The Group was informed of the continuing efforts to address concerns regarding the use of CPDLC message elements containing the words AT or BY. Despite attempts to clarify the meaning of such messages and the identification of "best practices" with regard to issuing and monitoring compliance with conditional clearances, errors were continuing to occur. The Group agreed this was safety issue that required resolution (paragraph 7.8 also refers). The following CPDLC pre-defined message elements were therefore of concern:

UM21   AT [time] CLIMB TO AND MAINTAIN [altitude]

UM24   AT [time] DESCEND TO AND MAINTAIN [altitude]

UM22   AT [position] CLIMB TO AND MAINTAIN [altitude]

UM25   AT [position] DESCEND TO AND MAINTAIN [altitude]

UM26   CLIMB TO REACH [altitude] BY [time]

UM28   DESCEND TO REACH [altitude] BY [time]

UM27   CLIMB TO REACH [altitude] BY [position]

UM29   DESCEND TO REACH [altitude] BY [position]

6.10   The Group agreed that the preferred solution would be to re-define these message elements as follows (insertions are indicated by grey highlighting, deletions are indicated by ~~strikeout~~):

UM21   AT OR AFTER [time] CLIMB TO AND MAINTAIN [altitude]

UM24   AT OR AFTER [time] DESCEND TO AND MAINTAIN [altitude]

UM22   ~~AT~~ AFTER PASSING [position] CLIMB TO AND MAINTAIN [altitude]

UM25   ~~AT~~ AFTER PASSING [position] DESCEND TO AND MAINTAIN [altitude]

UM26   CLIMB TO REACH [altitude] ~~BY~~ AT OR BEFORE [time]

UM28   DESCEND TO REACH [altitude] ~~BY~~ AT OR BEFORE [time]

UM27   CLIMB TO REACH [altitude] ~~BY~~ BEFORE PASSING [position]

UM29   DESCEND TO REACH [altitude] ~~BY~~ BEFORE PASSING [position]

6.11   With regard to the proposed change to UM21, the Group noted that this was different from the currently defined intent of UM21 which was "An instruction that at the specified time, a climb to the specified level is to commence and once reached the specified level is to be maintained". The Group agreed that this particular operational intent was not required, and that the use of such an instruction was intended to convey that the climb was to commence at or after the specified time. This would apply equally to UM24.

6.12   The Group recalled that past requests to modify pre-defined elements in the FANS 1/A CPDLC message set had been responded to with the information that such a measure was not possible due to the number of avionics and ground systems that would need to be modified in order to effect such a change. Nevertheless, the Group agreed that this issue constituted a significant safety concern and agreed to bring this recommendation to the attention of the NAT CNSG, NAT IMG and NAT SOG.

6.13   The Group noted that, rather than using UM27 and UM29, it would be possible to use a combination of UM20 (or UM23) and UM46 to achieve the same purpose with language that was, in the opinion of the Group, less subject to misinterpretation. Portugal advised the Group that this solution had been implemented by Santa Maria OACC as of January 2010 and Iceland advised that taking a similar step was being considered for Reykjavik OACC.

6.14   The Group then reviewed a proposal on how to use a mixture of pre-defined message elements and pre-formatted free text message elements in lieu of UM21, UM24, UM22, UM25, UM26 and UM28 noting that such uplink messages would activate the WILCO/UNABLE response from the aircraft. The Group noted that there were different interpretations on the intent of the prohibition against using free text to deliver a clearance via CPDLC. In the view of some a message element containing a restriction/condition constituted a clearance in and of itself, and therefore should not be delivered via a free text element, but only using a pre-defined element. In the view of others, a restriction/condition element, if used in combination with a pre-defined clearance element, would not constitute a clearance in and of itself, and it would therefore be acceptable to construct such a restriction/condition using free text. It was not possible to reach consensus on this question and accordingly it was noted that some ANSPs would investigate implementing the proposed solutions, while the United States would not. Those ANSPs that implemented the changes would ensure that the appropriate information was reported so that the efficacy of the solutions could be judged.

6.15   The Table in **Appendix D** summarises the possible solutions agreed by the Group, except that the United States stated that it considered the instructions contained in UM169 in certain solutions to be a case of using free text to issue a clearance and therefore did not support their utilisation. All of the foregoing would be brought to the attention of the NAT CNSG, the NAT IMG and the NAT SOG.

Future ATM Concept of Operations for the NAT Region (NAT Doc 005)

6.16   The Group endorsed a proposal to update NAT Doc 005 to incorporate information on Required Navigation Performance (RNP) in the NAT Region. The material contained in **Appendix E** would be presented to the NAT IMG for their endorsement.

6.17   The Group then reviewed draft material for an ATS Surveillance section. The Group agreed that some minor editorial changes were required and that the charts should depict the surveillance coverage in the Gander OCA and around Bermuda. The Group agreed that the charts should depict surveillance coverage only within the NAT Region. The Group then agreed to provide the necessary information to Iceland so that the updated material could be presented to NAT IMG/36 for its endorsement.

6.18   The Group then reviewed an initial draft of material concerning communications in the NAT Region. Iceland agreed to create charts depicting communications coverage (similar to those prepared to depict ATS surveillance coverage), provided the necessary information was forwarded. The Group agreed to coordinate with Portugal so that mature material could be presented to NAT ATMG/36 for its endorsement.

6.19   Canada agreed to present draft material concerning reduced lateral separation and United Kingdom agreed to present draft material concerning reduced longitudinal separation to NAT ATMG/36.

NAT MNPS Airspace Operations Manual

6.20   Other than suggestions that it be reviewed in response to issues raised by the NAT SG, the Group did not develop input for consideration in the MNPSA Operations Manual (paragraphs 7.14, 7.18 and 7.19 refer).

Application of Separation Minima (NAT Region)

6.21   The Secretariat agreed to provide material for the Group to review in order to address NAT ATMG/34 follow up 34-27, which concerned a need to verify whether any provisions referring to "same track" should be amended to refer to "same identical track" (NAT ATMG/34 Summary of Discussions, paragraph 6.14 refers). Iceland agreed to facilitate the Group's discussion and provide any resulting recommendations to NAT ATMG/36.

NAT Service Development Roadmap

6.22   The Group was advised that the new format of the Roadmap would be finalised at NAT IMG/36.

Review updates to ICAO documentation

6.23   The Group was updated concerning recent approvals of amendments to the NAT SUPPs and a proposal to amend *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM) (Doc 4444). The Group was also advised that ICAO had recently issued clarifications regarding issuing SID/STAR level revisions. The Group noted that several NAT Docs had been updated and that a new ICAO Circular had been issued concerning a uniform framework for collision risk modelling.

7.   Safety Management

Review the outcome of NAT SOG/01

7.1   The Group reviewed the outcome of the first meeting of the NAT Safety Oversight Group (NAT SOG) which took place in Paris, France from 21 to 24 September 2009. The Group

noted that the main focus of the meeting was to establish mechanisms to safety management issues in the NAT Region on behalf of the NAT SPG.

7.2   The Group noted that the NAT SOG had established a Fast Track Procedure by which NAT provider State regulators, the NAT Central Monitoring Agency (NAT CMA), NAT service providers, NAT SPG contributory groups and/or NAT user organisations could identify safety issues to the NAT SOG. The intent of the procedure was to reduce, to the extent possible, delays in addressing issues which required the involvement of the NAT SOG. The NAT IMG proposed some amendments to the procedure to clarify the coordination that would take place between the NAT SOG, the NAT IMG and the NAT SPG (paragraph 2.12 refers). The procedure, as modified by the NAT IMG, was as follows:

> **Step 1**   NAT provider State regulator, NAT CMA, NAT service provider, NAT SPG contributory group and/or NAT user organisation identifies safety issue(s).
>
> **Step 2**   The issue is communicated to the EUR/NAT Office of ICAO, who coordinates with the Chairmen of the NAT SPG, the NAT SOG and NAT IMG (icaoeurnat@paris.icao.int)
>
> **Step 3**   The issue is communicated to the NAT SOG e-mail list if required
>
> **Step 4**   The NAT SOG determines how the issue(s) will be discussed
>
> **Step 5**   The NAT SOG deliberates and determines next steps and/or actions to be taken (such as gather more information, develop mitigation, etc.)
>
> **Step 6**   The NAT SOG Chairman coordinates directly with the Chairmen of the NAT SPG and NAT IMG to implement changes or further actions
>
> **Step 7**   Further action is then communicated to the ICAO EUR/NAT office, which takes action as instructed

Review the outcome of NAT SG/01

7.3   The Group reviewed the report of the first meeting of the NAT Scrutiny Group (NAT SG) which had taken place in Prestwick, Scotland from 26 to 29 October 2009. The Group noted the scrutiny and identified developments, occurrences or trends sections of the report (NAT SG/01 Summary of Discussions, paragraphs 3.5.2 through 3.5.16 and paragraphs 3.7.2 through 3.7.6) and agreed to provide the following information and responses, which would be brought to the attention of the NAT IMG, the NAT SOG and the NAT SG.

ATC COORDINATION ERRORS (NAT SG/01 PARAGRAPH 3.5.2)

7.4   The Group noted the NAT SG recommendation to implement a mitigation based upon ensuring that the receiving oceanic ATSU would be copied on position reports immediately prior to or at the boundary. The initiative to standardise position forwarding practices (paragraph 5.5 refers) would partially address this recommendation, although it was noted that the proposed initiative only pertained to position reports that would be received by an OACC and would therefore not apply to position reports received by a domestic ATSU.

7.5   In consideration of the recommendation that flight plans be used to generate alerts to air traffic controllers if no further information was received concerning the subject flight, the Group agreed that such a mitigation was not feasible. It was noted that many flight plans were filed for flights that subsequently did not operate or which operated at a substantially different time or by following a substantially different route. Accordingly, a flight plan was not a reliable indicator of the

intention of a flight to operate into an airspace at or near a specified time. As a result, initiating follow up action if no subsequent information was received would create workload and potential confusion, outweighing the possible safety benefit.

7.6   The Group recalled that Canada, Iceland, Portugal and United Kingdom had instituted systems whereby ATS surveillance data was used to generate alerts regarding uncoordinated or possibly mis-coordinated flights approaching oceanic airspace from domestic airspace and that France would do so shortly (paragraphs 7.21, 7.22, 7.26 and 7.28 and NAT ATMG/33 Summary of Discussions paragraph 7.1 also refer).

CONDITIONAL CLEARANCES (NAT SG/01 PARAGRAPH 3.5.4)

7.7   The Group noted the NAT SG recommendation that including instructions to "report leaving" and "report level" when issuing a conditional vertical clearance would provide an opportunity to detect when such clearances were not actioned when or where expected. All ANSPs which provided conditional clearances confirmed that all voice and CPDLC clearances would include this instruction, except that in the case of Iceland, it was confirmed that only "report level" would be appended. This exception arose from the fact that a requirement to append both "report leaving" and "report level" was not documented in any NAT Region documentation. The Group agreed to update NAT phraseology (paragraph 5.14 refers) to include this as a requirement and Iceland agreed to investigate amending procedures to conform with the recommendation.

USE OF "AT" AND "BY" (NAT SG/01 PARAGRAPHS 3.5.3, 3.5.4, 3.5.6, 3.5.7 AND 3.5.9)

7.8   The Group concurred with the NAT SG position that the use of "AT" and "BY" was potentially unsafe and shared their disappointment that all feedback thus far to requests to change the FANS 1/A CPDLC messages had met with resistance and a response that such changes were not feasible (paragraph 6.12 also refers). In particular, the Group fully supported the NAT SG statement that "from a safety standpoint this Group (the NAT SG) feel that allowing this known weakness in the systems to continue uncorrected is indefensible, and the problem needs to be permanently resolved without further delay."

7.9   The Group noted that the NAT SG did not support the creation of pre-formatted free text CPDLC message elements as such message elements were considered to be "non-standard". The Group noted that, in the absence of revising pre-defined CPDLC message elements, the next best option for standardisation lay in defining pre-formatted free text elements which would not be subject to variation in use, since they were pre-composed by the ground system (not manually typed by the air traffic controller) and their text and intent would be publicised in the GOLD and/or the NAT data Link Guidance Material. A number of such pre-formatted free text messages had already been adopted.

MIXING HF AND CPDLC COMMUNICATIONS MEDIA (NAT SG/01 PARAGRAPH 3.5.8)

7.10   The Group noted the NAT SG concerns regarding the mixing of HF and CPDLC communications, as this could lead to confusion. Iceland and Portugal confirmed they had implemented system changes to allow aeradio operators to access all communications (whether via voice or CPDLC) which had been exchanged with a flight. Although Iceland's implementation was more recent, Portugal reported that, since their implementation, confusion arising from the mixing of communications media had been eliminated. Ireland reported that aeradio operators in Ballygirren had access to the same information as those in Reykjavik, which partially mitigated this concern, but did not have access to data link exchanges which would take place between flights and Prestwick OACC. Canada advised that aeradio operators in Gander did not have access to data link messages but the possibility of forwarding uplinked CPDLC messages to areadio operators was being explored. United States reported that they did not currently have any plans to implement a capability for their third party HF provider to access or be copied on data link exchanges.

NON-RECEIPT OF CPDLC MESSAGES (NAT SG/01 PARAGRAPH 3.5.11)

7.11   Canada, Iceland, Portugal and United States confirmed that their ground systems would generate an alert to the air traffic controller if a response (a message assurance and/or a flight crew response) to a CPDLC uplink message was not received within 5 minutes.

USE OF ADS-C SHORT TERM CONTRACTS TO MONITOR CONFORMANCE (NAT SG/01 PARAGRAPH 3.5.12)

7.12   The Group noted the NAT SG recommendation that a "short term" ADS-C contract should be put in place to monitor compliance with critical or conditional clearances. The Group recalled that only one periodic contract could be in place at a time and therefore such a procedure would require using demand contracts or some other type of contract. Portugal and United Kingdom confirmed that it was common practice for air traffic controllers to use demand contracts to verify compliance or in any case where there was a need to verify the profile of an aircraft. Canada, Iceland and United States confirmed they would investigate ways and means to use ADS-C capabilities to tactically monitor situations involving safety critical or conditional clearances.

OBSOLETE INFORMATION ON NAT PCO WEBSITE (NAT SG/01 PARAGRAPHS 3.5.13 AND 3.5.14)

7.13   The Group noted that the migration of information to the ICAO EUR/NAT website had largely addressed this issue (paragraph 6.2 refers).

CONFUSION REGARDING AERADIO VERSUS AIR TRAFFIC CONTROL (NAT SG/01 PARAGRAPH 3.5.15)

7.14   The Group considered that this issue was not in its remit to address. However, the Secretary agreed to request the NAT DMO to review the relevant sections in the NAT MNPS Airspace Operations Manual to ensure that it clearly explained third party communications in the NAT Region.

FLIGHTS ISSUED CONTROL INSTRUCTIONS WHILE NOT UNDER THE CONTROL OF THE ATSU (NAT SG/01 PARAGRAPH 3.5.16)

7.15   The Group considered that this issue was not in its remit to address. The United Kingdom advised the group that a meeting would take place between NATS (the United Kingdom oceanic ANSP) and representatives of Madrid ACC to discuss this issue.

OCCURRENCE REPORTING (NAT SG/01 PARAGRAPHS 3.7.2 AND 3.7.3)

7.16   The Group agreed to take action within their respective organisations to highlight the need for, and promote the submission of, occurrence reports in the NAT Region. It was recognised that adequate reporting was necessary to ensure the availability of accurate data with which to carry out safety assessments to support separation reductions along with properly assessing risk. The Group concurred with the NAT SG's position that some events, possibly currently considered "low risk" or "innocuous" would not be viewed in the same manner in the planned reduced separation environment, and accordingly should be reported more diligently.

ROUTE CLEARANCES USING CPDLC (NAT SG/01 PARAGRAPH 3.7.4)

7.17   The Group noted the NAT SG consensus that using CPDLC to provide route clearances would mitigate against input errors, a situation that would become of greater concern when clearances including ½ degree waypoints became more common with the implementation of 25 NM lateral separation. The Group recalled NAT SPG Conclusion 45/22 which tasked the NAT IMG to analyse and mitigate this risk as part of the implementation planning for 25 NM lateral separation. The Group was advised that United Kingdom currently avoided providing route clearances using CPDLC due to

concerns about creating route discontinuities. Canada advised that its system was capable of amending oceanic clearances using CPDLC but this function was not active. This was due to discontinuity with other FDPS and the limited amount of rerouting that took place once aircraft had entered oceanic airspace (paragraphs 2.18, 3.4 and 6.8 also refer).

INCORRECT INDICATIONS OF AIRCRAFT EQUIPAGE (NAT SG/01 PARAGRAPH 3.7.5)

7.18   The Group noted that the correct indications for RNP/4 and RNP/10 were detailed in the NAT SUPPs. As well, it was noted that "domestic approvals" could very well appear in a flight plan, since operators would need to indicate approvals and equipage pertinent to the domestic portions of their flights, not only the oceanic portions. The Secretary agreed to coordinate with the NAT DMO to ensure that the NAT MNPS Airspace Operations Manual accurately described the flight planning requirements for RNP operations in NAT Region airspace.

ADVISING FLIGHT CREWS WHEN REPORTING ACTION WILL BE TAKEN (NAT SG/01 PARAGRAPH 3.7.6)

7.19   The Group noted the NAT SG concern that valuable information could become unavailable if flight crews were not informed that reporting action regarding an occurrence would take place, thereby impeding the ability to properly investigate the occurrence afterwards. The Group confirmed that it was a requirement for all air traffic controllers providing services in the NAT Region to provide this notification to flight crews. Accordingly, the Group agreed to take appropriate action in their respective organisations to reinforce this requirement. It was noted, however, that providing this notification sometimes resulted in further communications between the flight crew and the ATCO and/or between the flight crew and the ATSU, which could potentially be distracting for the flight crew or the ATCO. The Secretary agreed to coordinate with the NAT DMO concerning information in the NAT MNPS Airspace Operations Manual concerning NAT Region occurrence reporting and whether such material could possibly be altered so as to provide flight crews with assurances that such reports were for the purposes of supporting NAT Region safety management functions and not for regulatory purposes.

7.20   The Group considered that paragraphs 3.7.7 through 3.7.9 of the NAT SG/1 report constituted issues that were in the remit of the NAT SOG and therefore did not comment on the issues raised therein.

Updates on actions to reduce number and/or magnitude of operational errors

7.21   Canada reported that a form of boundary error trapping had been implemented whereby controllers in the domestic sectors would have the planned oceanic flight level for each flight displayed in the associated radar displayed data. At a specific time prior to the oceanic boundary, discrepancies between the current flight level and the cleared oceanic flight level would be alerted to the domestic ATCO. Additionally, the planning controllers were provided radar information to assist their detection of non-conformant flights prior to oceanic entry.

7.22   Iceland advised that upgrades to the communications system had increased the quality of communications over landlines and the VHF transceiver network. On 24 February 2010 a new integrated situation display system had been implemented in Reykjavik ACC, which enabled flight plan tracks and radar tracks to be displayed on the same display. Lateral and vertical conformance alerts would be generated when there were mis-matches detected between the tracks associated with the same flight. Due to the expansion of radar coverage to encompass the entire boundary between Reykjavik and the Stavanger and Scottish FIRs, the conformance monitoring system was effective for the majority of traffic that would enter the Reykjavik CTA from Scottish, Stavanger and Shanwick.

7.23   The Group was updated concerning the expansion plans for the ADS-B implementation and the intention to implement delivery of oceanic clearances via data link as of 3 June 2010. Iceland also advised of plans to elicit an ADS-C demand report shortly before a flight would be estimated to

enter the Reykjavik CTA. The resulting position report would be conformance checked against the flight profile in the FDPS and alerts generated if discrepancies were found.

7.24   The Group was then advised that Iceland was interested in implementing a procedure whereby a message, similar to a CPL message, would be sent by the transferring ATSU to the receiving ATSU shortly before the flight was estimated to cross their common boundary. This would provide an opportunity to detect coordination errors prior to the flight crossing the boundary. The United Kingdom advised it would investigate the possibility of implementing this procedure with Iceland.

7.25   Ireland reported that no major changes had been implemented beyond upgrading the radar used to provide ATS surveillance services in the SOTA.

7.26   France informed the Group that, beginning in May 2010 ATCOs in Brest ACC would have differences between the current profile and the oceanic clearance highlighted on their radar displays. This tool would mitigate against aircraft not being provided clearances so as to enter oceanic airspace in conformance with their oceanic clearances.

7.27   Norway advised that a new reference line for coordination purposes, included in Letter of Agreement between Stavanger ATCC and Bodø ATCC, had been created and proven effective in reducing coordination errors within Norwegian airspace. Additionally Bodø OACC planned to implement a new oceanic surveillance system, Bodø Oceanic Surveillance System (BOSS) in 2011 or 2012. The new system would include automated data exchange to include coordination between Norway and Iceland. The Group was also informed that, during the upcoming summer season, a new VHF transmitter/receiver was to be established in the north of Bodø oceanic FIR with the result that approximately 70% of the airspace would be within VHF radio coverage. Finally, it was advised that a new off shore radar would provide better coverage along the border between Iceland and Bodø.

7.28   Portugal advised the Group that as of 19 November 2009 it had implemented automatic ADS-C demand requests 5 minutes prior to flights being estimated to enter the Santa Maria OCA. Thus far, this new conformance checking implementation had been successful, with a number of potential errors being successfully prevented. Further implementation of radar conformance checks within Azores radar coverage was planned to enhance the effectiveness of this mitigation by importing data from additional radar sources, namely Lisbon and Madrid.

7.29   United Kingdom reported that no major changes had been recently made, noting that significant safety benefits were expected once periodic ADS-C reporting was implemented in support of the trial application of reduced longitudinal separation between ADS-C equipped aircraft (paragraph 3.2 refers).

7.30   United States indicated that initial planning was underway concerning a possible project to make radar data available to the Ocean21 system.

8.   Any other business

8.1   The Group received updates concerning the ongoing evolution of the Atlantic Interoperability Initiative to Reduce Emissions (AIRE). The initiative was a cooperative agreement between the United States Federal Aviation Administration (FAA) and the European Commission. Gate to Gate demonstration flights were planned to take place between Paris Charles de Gaulle airport and Miami International airport and between airports in the United States and in Portugal. Portugal had recently begun participating in the AIRE via a SESAR Joint Undertaking to perform flight demonstrations which involved proof of concept evaluations of the North Atlantic cruise Climb Lateral Deviation Mach number (NATCLM) trials.

8.2   The United States provided updates concerning the successful relocation of San Juan Sector 10 non-radar airspace to the New York oceanic control area (NAT ATMG/34 Summary of Discussions paragraph 8.2 refers) and further progress on the project to implement reduced lateral separation in the Anchorage Arctic Flight Information Region based on RNP 10 or RNP 4 (NAT ATMG/34 Summary of Discussions paragraph 8.3 refers).

8.3   The Group was presented information concerning the conduct of a volcanic ash exercise by Santa Maria OACC on 2 March 2010. The exercise scenario was based on a double eruption of the Caldeira Volcano on Faial Island, Azores, which produced two ash clouds. The Group noted that it was likely that updates to the NAT and EUR Region Volcanic Ash Contingency Plans would likely be recommended when the exercise was fully debriefed at the next meeting of the VOLCEX SG meeting which would be held in June 2010 in Reykjavik, Iceland.

8.4   The United Kingdom provided information that, since the deletion of T14 in 2008, it had become apparent there was sufficient demand between northern Europe and the Iberian Peninsula/ Canary Islands to support another oceanic route between T9 and T16. EUROCONTROL Route Network Development Sub-Group (RNDSG) had proposed such a route designated T213. It was planned that the route would extend from a new fix, SUNAV, located on the Shanwick SOTA boundary to an existing fix on the Shanwick /Madrid boundary, BERUX. There would also be changes to the route structure within the Madrid FIR in support of T213. The route would be bi directional and laterally separated from both T9 and T16. It was intended that T213 be introduced in October 2010 but this was subject to confirmation. The Group was advised that the EUR/NAT Office of ICAO would coordinate directly with United Kingdom concerning this matter.

Future work

8.5   The Group reviewed the work programme established for it by the NAT IMG and agreed that it had completed the the development of documentation to support the requirement for forwarding of POS messages (paragraph 5.5 refers). The Group also noted its discussion concerning the development of a concept of operations for accommodating non-equipped flights with regard to the NAT Region data link mandate and the future reduced lateral separation environment (paragraph 5.2 refers). Accordingly, it agreed to recommend to the NAT IMG that its work focus on the following tasks:

a)   address issues related to risk mitigation

b)   develop procedures for the implementation of lateral and longitudinal separation reductions

c)   develop a concept of operation for the accommodation of non-equipped flights in areas where reduced lateral separation is being applied and when data link equipage has been mandated

d)   monitor developments of the ADS-B surveillance corridor and develop supporting documentation

e)   develop procedures to support ATSA-ITP in the NAT Region

f)   determine methods to optimize the use of HF voice communications;

g)   review NAT oceanic clearance process and recommend changes as appropriate;

h)   address regional ATFM and civil/military coordination issues

i)   update the Future ATM Concept of Operations for the North Atlantic Region (NAT Doc 005);

j)   update, as necessary, the NAT Contingency Plan and NAT ASM;

k)   develop updates, as necessary, for NAT MNPS Airspace Operations Manual and the NAT SUPPs; and

l)   provide inputs to regional safety management

8.6   Finally, the Group prepared its follow up action lists, which are at **Appendix F** (paragraph 2.1 also refers).

Next meeting

8.7   The Group recalled that the NAT IMG, at its 35th meeting, had agreed that Canada would provide a Rapporteur for the NAT ATMG (NAT IMG/35 Summary of Discussions paragraph 3/35 refers). The Group was advised that a nomination for the NAT ATMG rapporteurship had been received and would be reviewed by the NAT IMG at its 36th meeting, scheduled to take place from 18 to 21 May 2010 in Paris, France. When the NAT IMG had confirmed the new Rapporteur, the Group would be advised. The Group expressed its appreciation to Mr Muir for the professional and efficient manner in which he conducted the meeting.

8.8   The Group agreed to recommend that NAT ATMG/36 take place from 20 to 24 September 2010 in Paris, France and that NAT ATMG/37 take place at IATA Headquarters in Miami, United States.

8.9   The Secretariat advised that due to the number and complexity of documents prepared for consideration at NAT ATMG meetings, it had become necessary to more strictly enforce the deadlines established for the submission of papers (generally the requirement was that working papers be submitted no later than 2 weeks prior to the each meeting). The Group agreed that the opportunity to properly review documentation and coordinate responses within organisations prior to meetings would facilitate efficient conduct of discussions and minimise the necessity to carry items from one meeting to the next. The Group agreed that, when possible, coordinating working papers within the Group prior to meetings could also contribute to this goal. Accordingly, it was agreed that the Secretariat would circulate the follow up action list approximately 2 months prior the tentative meeting date to serve as a reminder of tasks requiring further work or coordination. Finally, the Secretariat agreed that, with prior coordination, extensions could be arranged to account for special circumstances.

Report to NAT IMG/36

8.10   The Group agreed to bring the following to the attention of the NAT IMG:

a)   the potential scheduling conflict between the planned ASE workshop and the tentative NAT Region users' conference (paragraph 2.5 refers);

b)   consensus that safety analyses to support implementation of reduced lateral separation of 25 NM should take account that RLongSM is being applied in the same airspace (paragraph 3.1 refers);

c)   recommendation to cross-reference tasks in implementation task list to the NAT Service Development Roadmap (paragraph 3.3 refers);

d)   recommendation that the NAT SARSIG be tasked to develop a new definition of GNE for applicability in reduced lateral separation environment (paragraph 3.3 refers);

e) recommendation that development of a concept of operations for the accommodation of non-equipped flights with regards to the NAT Region data link mandate and the reduced lateral separation environment be added to the NAT ATMG work programme (paragraphs 5.2 and 8.5 c)refer);

f) request from IBAC that criteria be determined for the expansion of exclusionary airspace as intended in 2013 and at later stages of the planned implementation of reduced lateral separation (paragraph 5.3 refers);

g) development of material to support forwarding of POS reports (paragraphs 5.5 and 8.12 a) refer);

h) consensus that it was not currently operationally suitable to eliminate SELCAL checks (paragraphs 5.9 and 5.10 refer);

i) next steps in task to analyse NAT operating concept with regard to the provision of Oceanic Clearances (paragraph 5.13 refers);

j) recommendation that a proposal for amendment to the NAT SUPPs be drafted to document NAT phraseology practices (paragraph 5.14 refers);

k) recommendation that NAT OPS/AIR sub group be tasked to determine whether an amendment of the NAT SUPPs is required to take account of technical requirements to support ADS-B implementation (paragraph 5.16 refers);

l) recommendation that NAT OPS/AIR sub group be tasked to keep under review ADS-B developments in the Gulf of Mexico (paragraph 5.17 refers);

m) request that the NAT IMG endorse the change management process proposed for NAT Doc 006 (paragraph 6.4 refers);

n) proposal to develop material for inclusion in NAT Doc 006 regarding data link failures (paragraph 6.5 refers);

o) intention to provide recommendation concerning endorsement of the GOLD by 1 May 2010 (paragraph 6.6 refers);

p) recommendation to revise certain pre-defined CPDLC message elements (paragraphs 6.10 to 6.12 refer);

q) intention to implement certain solutions to address safety concerns with certain CPDLC message elements (paragraph 6.15 and **Appendix D** refer);

r) proposed amendment to NAT Doc 005 to incorporate information on RNP (paragraph 6.16 and **Appendix E** refer);

s) the detailed responses to the report of NAT SG/01 (paragraphs 7.4 through 7.20 refer);

t) proposed work programme and follow up tasks (paragraph 8.5 and **Appendix F** refer); and

u) proposed dates and venues for NAT ATMG/36 and NAT ATMG/37 (paragraph 8.8 refers).

Coordination with other NAT SPG Contributory groups

8.11   The Group was advised the following would be brought to the attention of the NAT SARSIG:

a) its continuing interest in responses to the questions raised at NAT ATMG/33 concerning reduced lateral separation (paragraph 2.24 refers);

b) consensus that safety analyses to support implementation of reduced lateral separation of 25 NM should take account that RLongSM is being applied in the same airspace (paragraph 3.1 refers);

c) recommendation to NAT IMG that the NAT SARSIG be tasked to develop a new definition of GNE needs to be formulated for applicability in reduced lateral separation environment (paragraph 3.3 refers);

d) recommendation to NAT IMG that NAT OPS/AIR sub group be tasked to determine whether an amendment of the NAT SUPPs is required to take account of technical requirements to support ADS-B implementation (paragraph 5.16 refers); and

e) recommendation to NAT IMG that NAT OPS/AIR sub group be tasked to keep under review ADS-B developments in the Gulf of Mexico (paragraph 5.17 refers).

8.12 The Group was advised the following would be brought to the attention of the NAT CNSG:

a) proposed amendment to the NAT ICD and NAT Aeradio ICD to document the requirement to forward POS reports (paragraph 5.5 refers);

b) current practices concerning the provision of SIGMET to flights (paragraph 5.8 refers);

c) consensus that it was not currently operationally suitable to eliminate SELCAL checks (paragraphs 5.9 and 5.10 refer);

d) support in principle for development of global ICD (paragraph 6.1 refers);

e) intention to provide recommendation concerning endorsement of the GOLD by 1 May 2010 (paragraph 6.6 refers);

f) recommendation to revise certain pre-defined CPDLC message elements (paragraphs 6.10 to 6.12 refer); and

g) intention to implement certain solutions to address safety concerns with certain CPDLC message elements (paragraph 6.15 and **Appendix D** refer).

8.13 The Group was advised the following would be brought to the attention of the NAT SOG:

a) recommendation to revise certain pre-defined CPDLC message elements (paragraphs 6.10 to 6.12 refer);

b) intention to implement certain solutions to address safety concerns with certain CPDLC message elements (paragraph 6.15 and **Appendix D** refer);

c) the detailed responses to the report of NAT SG/01 (paragraphs 7.4 through 7.20 refer); and

d) updates on actions to reduce number and/or magnitude of operational errors (paragraphs 7.21 through 7.30 refer).

8.14 The Group was advised the following would be brought to the attention of the NAT SG:

a) detailed responses to the report of NAT SG/01 (paragraphs 7.4 through 7.20 refer); and

b) updates on actions to reduce number and/or magnitude of operational errors (paragraphs 7.21 through 7.30 refer).

―――――――――――――

APPENDIX A – LIST OF PARTICIPANTS

(paragraph 1.2 refers)

CANADA

    Noel DWYER

    Tom YOUNG

ICELAND

    Bjarni K. STEFANSSON

IRELAND

    John MCGRATH

NORWAY

    Ole Petter NORDNES

PORTUGAL

    Nelson PIMENTEL

UNITED KINGDOM

    Paul HAGERTY

    William MUIR *

UNITED STATES

    Karen CHIODINI

    Paul FAIRLEY

    David MALOY

FRANCE

    Didier EVEN

IATA

    Jeffrey T. Miller

IBAC

    Brian BOWERS

IFALPA

    Mark SEAL

ICAO

    Patricia CAVISTON

    Carole STEWART-GREEN

* Rapporteur

LIST OF CONTACTS

CANADA	**Noel DWYER**	
	ATS Standards & Procedures	+1 613 563 7211
	NAVCANADA	Fax: 1 613 563 3410
	CANADA	E-mail: dwyern@navcanada.ca
	Tom YOUNG	
	Shift Manager - Gander ANS	+ .1 709.651 5207
	NAVCANADA	Fax: +17096515234
	35 Memorial Drive East	E-mail: youngt@navcanada.ca
	Gander, NL	
	A1V 1W7	
	CANADA	
FRANCE	**Didier EVEN**	
	Assistant de Subdivision Controle	+332 98 37 34 57
	Brest ACC - ATC Procedures	Fax: +33298373404
	CRNA Ouest	E-mail: didier-
	B.P. 13	joseph.even@aviation-
	29470 plougastel daoulas	civile.gouv.fr
	FRANCE	
ICELAND	**Bjarni K. STEFANSSON**	
	P.O. Box 350	+3544244198
	Reykjavik Airport	E-mail: bk@flugstodir.is
	IS-101 Reykjavik	
	ICELAND	
IRELAND	**John MCGRATH**	
	Operations Manager,	+35361366074
	Shannon ACC,	Fax: +35361366097
	Irish Aviation Authority	E-mail: john.mcgrath@iaa.ie
	Ballycasey Cross,	
	Shannon	
	Co. Clare	
	IRELAND	
NORWAY	**Ole Petter NORDNES**	
	AVINOR	+47 670 33759
	BODOE ATCC	+47 918 31832
	P.O. Box 150	E-mail:
	N-2061 GARDERMOEN	ole.petter.nordnes@avinor.no
	NORWAY	

UNITED KINGDOM	**Paul HAGERTY** NATS – Atlantic House Ops Supervisor, Sherwood Road Prestwick, Ayrshire, Scotland KA9 2NR Prestwick UNITED KINGDOM	+44 1294 655 141 +44 7540 255 446 (mobile tel) E-mail: paul.hagerty@nats.co.uk
	William MUIR NATS - Atlantic House Sherwood Road Prestwick, Ayrshire, Scotland KA9 2NR Prestwick UNITED KINGDOM	+44 1292 312 500 +44 77189 13388 (mobile tel) E-mail: wgbm1@hotmail.co.uk
PORTUGAL	**Nelson PIMENTEL** Navegaçao Aerea de Portugal Apartado 47 Aeroporto de Santa Maria 9580 - Vila do Porto Azores PORTUGAL	+351 296 820503 E-mail: nelson.pimentel@nav.pt
UNITED STATES	**Karen CHIODINI** Federal Aviation Authority Air Traffic Organization Specialist, Oceanic & Offshore Operations Washington, D.C UNITED STATES	+1 202 493 5248 E-mail: Karen.l.chiodini@faa.gov
	Paul FAIRLEY Federal Aviation Authority Support Manager Plans and Programs International Operations En Route & Oceanic Services New York Center 4205 Johnson Avenue Ronkonkoma NY 11779 UNITED STATES	+1 603 468 1053 E-mail: paul.fairley@faa.gov
	David MALOY Federal Aviation Administration Flight Standards Service Flight technologies and Procedures Division Navigation Specialist UNITED STATES	+1 860 654 1006 Fax: 1 860 654 1009 E-mail: david.maloy@faa.gov

IATA	**Jeffrey T. MILLER**	
	International Air Transport Association	+1 202 628 9292
	703 Waterford Way, Suite 600	Fax: +1 202 628 9448
	33126 Miami, Florida	E-mail: millerj@iata.org
	UNITED STATES	
IFALPA	**Carole COUCHMAN**	
	IFALPA Technical Officer Montreal	+1 514 954 5065
	Suite 16.30, 999 University Street	Fax: +1 514 954 5858
	H3C 5J9 Montreal, PQ	E-mail:
	CANADA	carolecouchman@ifalpa.org
	Mark SEAL	
	IFALPA NAT Regional Vice-President	+1 631 472 4652
	11 Browns River road Bayport,	E-mail: markseal@optonline.net
	11705 New York	
	UNITED STATES	
IBAC	**Brian BOWERS**	
	IBAC	+1 902 462 4665
	113-79 Bedros Ln.	Fax: +1 902 462 4665
	B3M 4X5 Halifax, NS	E-mail:
	CANADA	bpbowers@ns.sympatico.ca
ICAO	**Carole STEWART-GREEN**	
	ICAO	+33 1 46 41 85 22
	3 bis, Villa Emile Bergerat,	Fax: + 33 1 46 41 85 00
	92522 Neuilly-sur-Seine Cedex	E-mail: cstewart@paris.icao.int
	France	
	Patricia CAVISTON	
	ICAO	+33 1 46 41 85 03
	3 bis, Villa Emile Bergerat,	Fax: + 33 1 46 41 85 00
	92522 Neuilly-sur-Seine Cedex	E-mail:
	FRANCE	pcaviston1@paris.icao.int

———————————

APPENDIX B – LIST OF DOCUMENTATION

(paragraph 1.4 refers)

WP	Agenda Item	Title	Presented by
01rev	1a	Draft Agenda	Secretariat
02	4	IBAC Concerns re NAT Data Link Mandate	IBAC
03	4c	Standardising NAT Phraseology	Secretariat
04	5a	NAT Contingency Plan – Reykjavik procedures	Iceland
05	5c	NAT Doc 005 – Draft Update to RNP Section	United States
06	5	Global Interface Control Document (ICD)	United States
07	5a	Procedures In The Event Of Data Link Failure Within One Or More NAT OCAs	Canada & Ireland
08rev	5b	Global Operational Data Link Document	United States
09	2	Key Task List For The Implementation Of North Atlantic (NAT) Initiatives	United States
10	2	North Atlantic Data Link Mandate And Separation Reduction Initiatives - Issues To Be Addressed	United States
11	4b	Necessity Of The Requirement Of Obtaining An Oceanic Clearance Within The North Atlantic (NAT) Region	United States
12	2	Transition From MNPS To PBN/ RNP	United States
13	4e	ADS-B – NAT Documents	Canada & Iceland
14	5c	DOC 005 – Draft ATS Surveillance Section	Iceland
15	5b	The use of CPDLC messages containing the word EXPECT	Portugal
16	5c	NAT Doc 005 – Draft Communications in North Atlantic	Portugal
17	4e	Development Of ADS-B Procedures In NAT Region	Canada & Iceland
18	5b	Ambiguous CDPLC Phraseology	United Kingdom
19	2b	Implementation Plan For Use Of Reduced Lateral Separation Minimum In The NAT Region	Canada
20	6c	Forwarding of Position Reports	Iceland
21	4a	HF SELCAL Checks with CPDLC and ADS	IATA
22	5b	Use of AT and BY in CPDLC messages	Portugal
23	5b	Overview of the use of "EXPECT" CPDLC messages in Reykjavik CTA	Iceland

IP	Agenda Item	Title	Presented by
01	1a	Draft Work Schedule	Secretariat
02	1c	NAT ATMG/34 Follow Up Action Lists	Secretariat

03	5b	ICAO Update	Secretariat
04	5	NAT PCO Migration	Secretariat
05	7	Update on Activities of AIRE	United States
06	7	Status of the Arctic 50 NM Lateral Separation Reduction Project	United States
07	7	Gulf of Mexico Route Structure/Lateral Separation Reduction Project	United States
08	4	Concept Of Operations For The Use Of Non-Integrated SATCOM Voice Systems In The North Atlantic	United States
09	7	Relocating San Juan (ZSU) Sector 10 Non-RADAR Airspace to New York (ZNY) Oceanic Control Area (CTA)	United States
10	6c	Reykjavik update on actions to reduce number and/or magnitude of operational errors	Iceland
11	7	AIRE Trials (NATCLM) in Santa Maria FIR	Portugal
12	7	ICAO EUR NAT Exercice VOLCEX 10-01	Portugal
13	5b	Draft proposal to Amend GOLD to include CPDLC Reroute	Canada
14	5b	ISPACG review of out of conformance messages	United States

—————————

APPENDIX C – Proposed Task List for the Implementation of 25 NM Lateral Separation

(paragraph 3.3 refers)

	SUBJECT	**DATE TO COMPLETE BY**	**RESPONSIBLE ORG or NAT SUB-GROUP**	**KEY IMPLEMENTATION TASKS**
1	**ICAO SARPS and Guidance**		ATMG	Review related ICAO SARPS and guidance documents: ICAO Doc 4444; Annexes 2, 6, 11.
2	**RNP and Data Link authorization criteria**		SARSIG/OPS AIR	1. Review ICAO Performance Based Navigation (PBN) Manual (ICAO Doc 9613) for current criteria for RNP authorization. (Third Edition – 2008 is current). 2. Review GOLD for data link authorization criteria.
3	**Coordination with ICAO HQ/SASP**		IMG	What coordination of 25-lat and 5-minute long criteria with SASP will be necessary? Does NAT SPG desire/expect approval from ICAO HQ? Will 25 NM lateral and 5 minute longitudinal become a new separation minimum published in ICAO DOC 4444 for global use?
3A	**NAT Regional Supplementary Procedures**		ATMG	Plan for amendment of NAT Regional SUPPS for: 25 NM-lateral and Data Link mandate. Date for submittal of a draft 7030 amendment to ICAO Paris? Target date for ICAO distribution for comment? Target date for publication?
3B	**NAT SPG document revision**		ATMG	Identify NAT SPG documents to be revised and plan for their revision.
4	**Concept of Operations**		ATMG	Develop and coordinate Concept of Operations and incorporate into appropriate operational policy and procedures documents (e.g., ICAO State Letters, State AIP Supplements, AIC's)

	SUBJECT	DATE TO COMPLETE BY	RESPONSIBLE ORG or NAT SUB-GROUP	KEY IMPLEMENTATION TASKS
5	**Operator/aircraft fleet readiness projection**		OPS AIR	Make projection of percentage of flights that will be conducted by 25-lateral eligible and data link equipped aircraft: by 2012? By 2013? By 2015? Target: establish the approximate percentage of flights to be conducted by data link equipped aircraft to proceed with implementation.
6	**ATC system modification**		ATMG/CNSG	Identify the time schedule required to modify ATS provider ATC systems for 25-lateral.
7	**Task List and Schedule**		AS ASSIGNED BY IMG	Develop a Task List and schedule for completion of individual tasks.
8	**Safety Assessment**		SARSIG	Complete Safety Management System (SMS) required documents (e.g., Safety Assessment/Collision Risk Modelling) to be available at time of Doc 7030 submission.
9	**NAT Safety Oversight Group coordination**		IMG TO COORD. SOG	SOG to monitor safety cases in progress and review completed safety cases prepared to support changes to the NAT air navigation system.
10	**Data Link System Performance**		CNSG	Determine requirement for data link system performance and establish whether or not it is being met.
11	**Safety Risk Management Document**(s)			1. **ATS provider requirement:** complete and submit SRMD (Safety Risk Management Document) for approval approx___ months prior.
12	**Route structure redesign**		ATMG	Identify steps necessary to introduce ½ degree track spacing.

	SUBJECT	DATE TO COMPLETE BY	RESPONSIBLE ORG or NAT SUB-GROUP	KEY IMPLEMENTATION TASKS
13	**Plan and schedule for aeronautical chart data publication**		OPS AIR	Develop plan and schedule for publication of aeronautical chart data. Work with chart providers to revise chart panels, etc.
14	**Information Dissemination Program**		IMG	Develop NAT Initiatives Webpage? Develop distribution list for State and industry organizations and key individuals. Distribute ICAO State letters, as necessary. Include Training Centers.
15	**Job Aids for ADS-C, CPDLC, RNP X Authorization Process**		OPS AIR	Develop Job Aids (a repository for how-to guides or summaries to help understand and comply with policies and standards), as necessary, based on ICAO and NAT guidance. Post on Webpage. Ensure current PBN Manual and GOLD references incorporated. Have ICAO State letter advocate use of Job Aids.
16	**Advance notice**		IMG	Provide advance notice to States and operators of intent to implement (key dates, basic plan and operating policy, etc.).
17	**ICAO State Letter**		ATMG	ICAO Regional Office distribute ICAO State letter to: outline project and advocate use of Job Aids and other guidance posted on the Webpage.
18	**Coordination with NAT SPG Working Groups**			Submit Working Papers and Information papers to appropriate NAT SPG Subgroups.
19	**State regulator preparation**		STATES	States prepare responsible offices to complete State tasks related to operators for which they are responsible.
20	**State regulations and guidance**		STATES	States revise or develop regulations and guidance, as necessary.

	SUBJECT	DATE TO COMPLETE BY	RESPONSIBLE ORG or NAT SUB-GROUP	KEY IMPLEMENTATION TASKS
21	**Operational Policy & Procedures documents**		STATES/ATMG	1. Prepare and distribute documents (e.g., State AIC's, FAA Notice) containing applicable operational policy and procedures.
22	**State ATS policy documents**		STATES	States revise or develop Air Traffic Services policy documents, as necessary.
23	**Transition Plan**	Not applicable?	STATES/ATMG	Determine if a transition plan is required.
24	**Publish Transition Plan (if required)**	Not applicable?	STATES	If required, publish coordinated plan and schedule to transition to new separation standard.
25	**Pre-implementation Safety Assessment & Implementation Decision**		STATES	Update and complete final Safety Assessment and Readiness Review.
26	**Performance Monitoring**		SARSIG	Develop and agree on system safety performance monitoring criteria.
27	**Notice of decision to implement**		NAT SPG	Provide notification to States and operators of decision to implement.
28	**State controller training**		STATES	States train controllers.
29	**Aeronautical chart and navigation databases**		STATES	Publish and distribute revised aeronautical chart and navigation information.

	SUBJECT	DATE TO COMPLETE BY	RESPONSIBLE ORG or NAT SUB-GROUP	KEY IMPLEMENTATION TASKS
30	**State ATC automation systems**		STATES	Modify ATC automation systems and programs, as necessary.
31	**Operator readiness**		OPS AIR	Operators should plan to be ready by one month in advance of implementation.
32	**Target Implementation Date**		NAT SPG	Implement 25 NM lateral separation.
33	**Post implementation monitoring**		SARSIG	Conduct post-implementation monitoring and convene specialists as necessary for monitoring.

APPENDIX D – Table of Proposed Solutions to Address Misunderstandings of CPDLC Messages Containing the Words AT or BY

(paragraph 6.15 refers)

UM#	PROBLEM	UM#	POTENTIAL SOLUTION
21	AT [time] CLIMB TO [altitude]	19	MAINTAIN [altitude]
		169	AT OR AFTER [time]
		20	CLIMB TO AND MAINTAIN [altitude]
24	AT [time] DESCEND TO [altitude]	19	MAINTAIN [altitude]
		169	AT OR AFTER [time]
		23	DESCEND TO AND MAINTAIN [altitude]
22	AT [position] CLIMB TO [altitude]	19	MAINTAIN [altitude]
		169	AFTER PASSING [position]
		20	CLIMB TO AND MAINTAIN [altitude]
25	AT [position] DESCEND TO [altitude]	19	MAINTAIN [altitude]
		169	AFTER PASSING [position]
		23	DESCEND TO AND MAINTAIN [altitude]
26	CLIMB TO REACH [altitude] BY [time]	20	CLIMB TO AND MAINTAIN [altitude]
		169	REACH [altitude] AT OR BEFORE [time]
28	DESCEND TO REACH [altitude] BY [time]	23	DESCEND TO AND MAINTAIN [altitude]
		169	REACH [altitude] AT OR BEFORE [time]
27	CLIMB TO REACH [altitude] BY [position]	20	CLIMB TO AND MAINTAIN [altitude]
		46	CROSS [position] AT [altitude]
29	DESCEND TO REACH [altitude] BY [position]	23	DESCEND TO AND MAINTAIN [altitude]
		46	CROSS [position] AT [altitude]

NOTE 1: With regard to UM27 and UM29, the suggested solution involves the use of only predefined message elements.

NOTE 2: All free text message elements (UM169) would be pre-formatted and automatically generated by the FDPS.

APPENDIX E – RNP Section for Doc 005

(paragraph 6.16 refers)

REQUIRED NAVIGATION PERFORMANCE (RNP)

Performance-based navigation (PBN) is a framework for defining a navigation performance specification along a route, during a procedure, or in airspace within which an aircraft must comply with specified operational performance requirements. It provides a simple basis for the design and implementation of automated flight paths and for airspace design, aircraft separation, and obstacle clearance. It also offers a straightforward means to communicate the performance and operational capabilities necessary for the utilization of such paths and airspace. Within the framework of performance-based navigation, the aviation industry has defined area navigation (RNAV) and required navigation performance (RNP) specifications that can be satisfied by a range of navigation systems.

RNP is RNAV with on-board navigation monitoring and alerting, RNP is also a statement of navigation performance necessary for operation within a defined airspace. A critical component of RNP is the *ability of the aircraft navigation system to monitor its achieved navigation performance, and to identify for the pilot whether the operational requirement is, or is not being met during an operation*. This on-board performance monitoring and alerting capability therefore allows a lessened reliance on air traffic control intervention (via radar monitoring, automatic dependent surveillance (ADS), multilateration, communications), and/or route separation to achieve the overall safety of the operation. RNP capability of the aircraft is a major component in determining the separation criteria to ensure that the overall containment of the operation is met. The RNP capability of an aircraft will vary depending on the aircraft equipment and the navigation infrastructure. For example, an aircraft may be equipped and certified for RNP 1.0, but may not be capable of RNP 1.0 operations due to limited navaid coverage.

Figure xx shows how RNAV and RNP have improved the navigational process. Using the current ground navaids, the aircraft has to fly from beacon to beacon, often taking an inefficient route in order to pick up the signals at the appropriate place in the air. The dotted boxes indicate the expanse of the area in the sky that the aircraft could be in as it picks up those ground-based signals. This requires air traffic control to create larger areas of separation between aircraft, in order to maintain safety. In the RNAV and RNP routing, however, the dotted areas are far smaller, indicating that the aircraft can fly a much more precise route in the air. Additionally, the graphic illustrates the RNP "radius of turn" ability, essentially indicating how RNP enables the aircraft to make much tighter, more precise turns in the air.
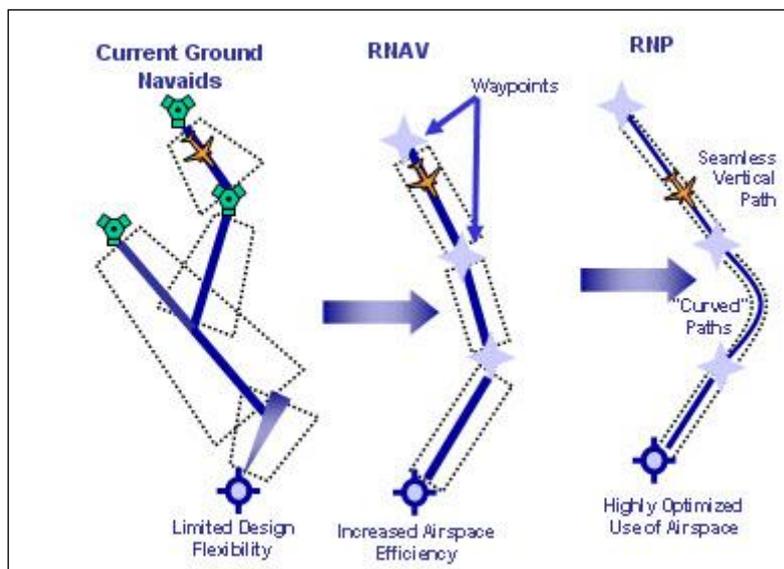
Figure xx: Performance-Based Navigation – RNAV/RNP

Certain RNP operations require advanced features of the onboard navigation function and approved training and crew procedures. These operations must receive approvals that are characterized as Special Aircraft and Aircrew Authorization Required (SAAAR), similar to approvals required for operations to conduct instrument landing system (ILS) Category II and III approaches. Approximately 50 percent of transport-category aircraft are capable of basic RNP operations, and 25-30 percent is capable of RNP SAAAR approach operations. Industry-wide forecasts predict that 80-90 percent of transport category aircraft will be capable of basic RNP operations by 2017. Many business aviation aircraft are also capable of RNAV and basic RNP operations (approximately 75 percent being Global Positioning System [GPS]-equipped).

Some piston aircraft are capable of RNAV and basic RNP, with nearly half of all general aviation instrument flight rules (IFR) aircraft equipped with IFR-certified GPS navigation systems. RNAV and RNP specifications facilitate more efficient design of airspace and procedures, which collectively result in improved safety, access, capacity, predictability, operational efficiency, and environmental effects.

The following table summarizes the goals of the NAT Region PBN transition plans:

NAT REGION PBN TRANSITION PLAN	
AIRSPACE	**NAVIGATION SPECIFICATIONS**
NAT FL430 and above	TBD
NAT FL410	Until <date TBD>: MNPS WATRS: RNP 10
	From <date TBD>: MNPS RNP 10/MNPS WATRS: RNP 10
NAT FL350 – FL400	Until <date TBD> 2012: MNPS WATRS: RNP 10
	From <date TBD> 2012 - 7 February 2013: MNPS RNP 4/MNPS on the 3 central NAT OTS tracks. WATRS: RNP 10
	From 7 February 2013 – 5 February 2015: MNPS RNP 4/MNPS on all NAT OTS tracks WATRS: RNP 10
	From 5 February 2015: RNP 4/MNPS WATRS: RNP 10
NAT FL290 – FL340	Until <date TBD>: MNPS WATRS: RNP 10
	From <date TBD>: MNPS RNP 10/MNPS WATRS: RNP 10
NAT FL060 – FL280 Outside Greenland, Faroe Islands, Iceland, Azores and Bermuda.	TBD
NAT SFC – FL050 Outside Greenland, Faroe Islands, Iceland, Azores and Bermuda.	TBD
Greenland SFC – FL190	TBD
Faroe Islands SFC – 7500' ASL	TBD
Iceland SFC – FL190	TBD
Azores SFC – FLxxx	TBD
Bermuda SFC – FLxxx	TBD

Note 1: RNP10/MNPS signifies that, in addition to the RNP10 approval, an MNPS approval is required for the non-navspec part of the operational approval.

Note 2: RNP4/MNPS signifies that, in addition to the RNP4 approval, an MNPS approval is required for the non-navspec part of the operational approval.

Detailed guidance material on RNP is contained in the *Performance-based Navigation Manual* (Doc 9613). It should be noted that any plans to transition to PBN operations should be in accordance with provisions contained in Doc 9613.

———————————

APPENDIX F – Follow up action lists

(paragraphs 2.1 and 8.6 refer)

Table 1 – Extant items from NAT ATMG/34

ID #	ACTION	REMARKS	WHO	WHEN/WHAT
34-21	Develop draft update to NAT Doc 005 regarding reduced lateral separation	(NAT ATMG/34 paragraph 6.10 refers); deferred to NAT ATMG/36 (paragraph 6.19 refers)	Canada	WP to NAT ATMG/36
34-22	Develop draft update to NAT Doc 005 regarding reduced longitudinal separation	(NAT ATMG/34 paragraph 6.10 refers); deferred to NAT ATMG/36 (paragraph 6.19 refers)	United Kingdom	WP to NAT ATMG/36
34-27	Review NAT ASM and develop amendments to refer to "same identical track" as necessary.	(NAT ATMG/34 paragraph 6.14 refers); Secretary will provide base material, Group will develop amendment if necessary (NAT ATMG/35 paragraph 6.21 refers)	All	WP or IP to NAT ATMG/36

Table 2 – Items arising from NAT ATMG/35

ID #	ACTION	WHO	WHEN	X-REF
35-01	Update charts in NAT MNPSA Operations Manual to account for changes in Shannon FIR.	Ireland, Secretariat & NAT DMO	By NAT SPG/46	*para 2.3*
35-02	Prepare updated issues list and present to NAT IMG.	United States	NAT IMG/36	*para 3.1*
35-03	Prepare working paper to present draft task list for the implementation of reduced lateral separation.	Secretariat	NAT IMG/36	*para 3.3*
35-04	Prepare updated planning document for implementing reduced lateral separation and present to NAT SARSIG.	Canada	NAT SARSIG/11	*para 3.4*
35-05	Prepare updated planning document for implementing reduced lateral separation and present to NAT IMG.	Canada	NAT IMG/36	*para 3.4*

ID #	ACTION	WHO	WHEN	X-REF
35-06	Prepare draft concept of operations for accommodating non-equipped aircraft in regards to the NAT Region data link mandate and implementation of reduced lateral separation and present to NAT ATMG.	United Kingdom & All	NAT ATMG/36	*para 5.2*
35-07	Prepare updated draft task list for transition from MNPS to PBN and present to NAT SARSIG.	United States	NAT SARSIG/11	*para 5.4*
35-08	Prepare updated draft concept of operations for the use of portable SATCOM voice systems and present to NAT ATMG.	United States	NAT ATMG/36	*para 5.7*
35-09	Provide information to NAT ATMG concerning differing operational requirements and practices in the PAC and southern part of the NAT Region from those in the northern part of the NAT Region and possible areas for harmonisation.	Canada & All	NAT ATMG/36	*para 5.13*
35-10	Prepare draft proposal for amendment to NAT SUPPs to document NAT Region phraseology practices and present to NAT ATMG.	Secretary & All	NAT ATMG/36	*para 5.14*
35-11	Prepare proposal for amendment to NAT ASM to take account of ADS-B and present to NAT ATMG.	Secretary & All	NAT ATMG/36	*para 5.16*
35-12	Prepare proposal for amendment to NAT MNPSA Operations Manual to account for ADS-B and present to NAT ATMG.	Canada	NAT ATMG/36	*para 5.16*
35-13	Review NAT Operational Contingency Plans, prepare proposals for amendment to account for ADS-B as necessary and present to NAT ATMG.	All	NAT ATMG/36	*para 5.16*
35-14	Coordinate with NAT DMO to ensure ADS-B is taken into account during review and update of NAT Doc 001.	Secretary	ASAP	*para 5.16*
35-15	Update NAT Doc 006 in accordance with information provided by Iceland in NAT ATMG/35 WP/04.	Secretary	ASAP	*para 6.4*
35-16	Develop proposal to amend NAT Doc 006 to take account of generic and ATSU specific procedures in the event of data link failures and present to NAT ATMG.	Canada & Ireland and All	NAT ATMG/36	*para 6.5*
35-17	Advise Secretary concerning recommendation to endorse the GOLD.	All	1 May 2010	*para 6.6*
35-18	Advise NAT IMG of Group's recommendation concerning GOLD endorsement.	Secretary	ASAP	*para 6.6*
35-19	Coordinate with regulator concerning acceptability of using CPDLC UM7, UM8 and UM9 with prepended free text THIS IS NOT A CLEARANCE.	United Kingdom	ASAP	*para 6.7*

ID #	ACTION	WHO	WHEN	X-REF
35-20	Coordinate with GOLD ad-hoc working group concerning NAT ATMG recommendations concerning use of CPDLC messages containing the word EXPECT.	United States	ASAP	*para 6.7*
35-21	Review draft proposal to amend GOLD to incorporate CPDLC re-route clearances and coordinate with respective NAT CNSG members and NAT CNSG Rapporteur.	All	NAT CNSG/02	*para 6.8*
35-22	Report to appropriate groups on results of implementing agreed solutions to address safety concerns with certain CPDLC message elements.	All	When/if implemented	*para 6.14*
35-23	Provide necessary information to Iceland concerning surveillance coverage and communications coverage.	All	ASAP	*paras 6.17 & 6.18*
35-24	Prepare proposal to amend NAT Doc 005 to incorporate ATS surveillance and present to NAT IMG.	Iceland	NAT IMG/36	*para 6.17*
35-25	Prepare proposal to amend NAT Doc 005 to update material on communications and present to NAT ATMG.	Portugal	NAT ATMG/36	*para 6.18*
35-26	Coordinate with NAT DMO concerning issues raised by the NAT SG for possible clarification in the NAT MNPSA Operations Manual	Secretary	ASAP	*paras 7.14, 7.18 & 7.19*
35-27	Coordinate with United Kingdom concerning introduction of new ATS route T213.	EUR/NAT Office	ASAP	*para 8.4*

- END -