IBAC Technical Report Summary

Subject: NAT Operations and Air Traffic Management

Meeting: *North Atlantic (NAT) Communications, Navigation and Surveillance Group 13th (CNSG/13)*

IBAC File:

Reported by: *Jerry Mettes*

Summary: The CNSG/13 was held from 5 to 9 October 2015 in Washington DC, United States of America.

CNSG recognised that in accordance with the ongoing reorganisation of the IMG contributory groups, this is the final meeting of the NAT CNSG. Future tasks will be referenced as NAT Technical and Interoperability Group (TIG) actions.

Boeing brought the CNSG requests, regarding CPDLC delayed message delivery and implementation of a timeout in the ground network, to the AEEC DLK. The AEEC DLK recommended that specific cases of delayed uplink messages be examined, due to implementation cost/schedule for an uplink message expiration function. ANSPs and aircraft operators should submit DLMA problem reports for uplink delays exceeding 300 seconds.

CNSG agreed to consider if and how the NAT ANSPs might use the "FANS-1/A+" message latency detection function to address the issue of delayed uplink messages. CNSG recommended that a NAT TIG Aircraft Message Latency Monitor Evaluation Project Team be established.

CNSG noted that a candidacy of Mr. Steve Pinkerton (United States) has been proposed and supported as a rapporteur of the inter-regional task force to assess the minimum technically feasible ADS-C reporting interval.

CNSG added a task (due at the next meeting) to compare the flight plan inconsistencies in the NAT per operator from 2014 to 2015, due to inconsistencies observed in the flight plan filed equipage versus actual.

CNSG noted ICAO and AEEC NDB are coordinating a change proposal to ARINC 424 para 7.2.5 on half-degree waypoint naming. States implementing RLatSM have issued AICs discouraging the use of "Nxxyy" and encouraging the format using "Hxxyy" to indicate half-degree waypoints. Similar statements will be included in the respective AIPs.

CNSG discussed the use of CPDLC UM137/DM40 (Confirm Assigned Route/Assigned Route) for route conformance monitoring. Portugal noted that the use of UM137 and DM40 is currently available for operations in the Santa Maria ATM system, by manual intervention and analysis from the controllers.

Flight crews should respond to UM137 with a downlink report (DM40) which provides the active route from the FMS. The use of free text (DM67) in response to UM137 should be avoided, as this will negate automatic conformance monitoring, create potential flight crew errors, and increase ATS workload. IATA, IFALPA and IBAC agreed to convey this information to their members.

CNSG noted that the fully automated use of UM137/DM40, could potentially eliminate oceanic clearances in the NAT. CNSG agreed that this perspective should be brought to the NAT IMG for consideration.

CNSG noted CPDLC and ADS-C performance reports by the NAT ANSPs. All reports agreed that aggregated 95% criterion of the ADS-C Required Surveillance Performance (RSP) 180 and CPDLC Required Communication Performance (RCP) 240 requirement was met. The reports included a PORT filter value of 12 seconds which provided better PORT estimation and improved overall results.

Future ANSP reports will include the performance by operator/aircraft type, in order to collectively assess which operators are meeting the PBCS criteria and thus qualified for reduced separations.

CNSG noted the DLMA Problem Report (PR) investigations and resolutions since the previous meeting. Of 119 PRs, 43 (36%) occurred in the NAT.

DLMA Problem Reports are considered closed when a fix is available from aircraft manufacturers. However, implementation of fixes is not mandatory. Since some PR fixes improve performance and safety, CNSG agreed that a list of such PRs where a fix is available but implementation pending would be created.

CNSG discussed a suggestion that aircraft operators with capable avionics consider reconfiguring the avionics to continuously use SATCOM in those areas of the world with intermittent VHF coverage. Use of VHF in those areas may degrade data link performance. CNSG recognized that additional work is needed on VHF/SATCOM operational definition. IATA and IBAC agreed to convey the above-mentioned VHF/SATCOM considerations to their members.

CNSG reviewed the issue in which uplink messages were determined to be undeliverable by the data link service provider (DSP). The review included analysis of Aircraft Not Logged On messages. ANSPs and aircraft operators are invited to submit problem reports to the DLMA for occurrences of uplink message non-delivery.

CNSG reviewed abnormal terminations of ADS-C connections in the NAT, where issues remain with ADS-C terminations by flight crews without coordination with ATC. The operational impact of those occurrences will increase with expanded use of data link dependent separation.

CNSG noted cases where CPDLC and ADS-C messages contained an incorrect timestamp. The possibility of aircraft with incorrect time may have significant safety consequences, as precise time was the basis for all safety assessments and collision risk modelling. It was agreed that ANSPs should investigate mitigation measures.

Shanwick informed the CNSG that as part of the preparations for the RLatSM trial within Shanwick airspace, the Prestwick based ATC and Engineering teams agreed to conduct a review of live data link operations ahead of the trial commencement date. The review resulted in actions to address a number of operational data link issues.

CNSG discussed proposed changes to the Global Operational Data Link Manual (GOLD) (Doc 10037). These include a standardized free text message for situations when data link transfers across control area boundaries fail. Isavia uses the following: TO FIX A DATA LINK PROBLEM DISCONNECT CPDLC AND THEN LOG ON AGAIN TO [BIRD]

CNSG also supported additional guidance in the GOLD on data link connection reset. Cases were reported where ATC requests to log on again were misunderstood by the flight crew. CNSG noted that GOLD Edition 1.0 language was SELECT ATC COMM OFF THEN LOG ON TO [facility]. The language changed in Edition 2.0 to DISCONNECT CPDLC THEN LOG ON TO [facility]. Some NAT and APAC ANSPs are using GOLD Edition 1.0 language that may be confusing for some flight crews.

CNSG agreed that issues related to data link standards and implementations need to be analysed, especially in the context of ED-122 SR-27. If this analysis concludes that manual transfer of information between the data link system and other aircraft systems cannot satisfy the requirements of ED-122 SR-27 and/or RCP240, then aircraft dependent on such manual transcription would not meet mandatory data link requirements. CNSG agreed the IMG should be informed about this subject with a request for guidance.

Gander presented information identifying data link outages by using ADS-C performance data and "NOT LOGGED ON" data and compared these with the CSP outage notifications. CNSG noted that this work would allow a better estimate of data link availability for PBCS and agreed to draft an amendment to the GOLD Manual.

Inmarsat provided an update on the system current status and plans, system coverage, and performance. With regards to the Alphasat coverage over Greenland, CNSG was provided with the comparison of the ADS-C reports received over I4 versus Alphasat, whose coverage areas appeared to be similar. Inmarsat stated that they are continuing to investigate how to further improve the coverage over Greenland.

CNSG invited Inmarsat to carry out a similar analysis to compare the I3 and Alphasat coverage to identify the areas where Alphasat will not provide services. CNSG felt that the coverage provided by I3 over Greenland should be the target for the Inmarsat efforts to improve the Alphasat coverage.

CNSG reviewed an interim report on the FANS 1/A over SBB (Swift Broadband) project to show that CPDLC and ADS-C meet RCP240 and RSP180, respectively, within the PBCS framework. PARC CWG is planning to complete the FANS 1/A over SBB project report for the FAA by the middle of 2016.

Iridium provided an update on the constellation status, Iridium NEXT launch and service evolution, and on the status of the CERTUS Service.

Gander provided information regarding a trial planned for November 2015 to assign a Primary and Secondary HF frequency via CPDLC free text from Gander Domestic to Gander Oceanic and to provide a Primary HF frequency from Gander Oceanic to Shannon Radio using UM117 as per GOLD.

CNSG discussed different options available in UM117 to identify the unit name to contact. It was noted that UM117 offers either CONTROL or CENTER but not RADIO. It was noted that both available variables were implemented in the NAT without any operational issues. UM117 offers advantages over free text by allowing auto-tuning of the aircraft radios.

CNSG reviewed an update on the use of satellite voice (SATVOICE) for air traffic services (ATS). NAT ANSPs have confirmed that all, except the United States, have published in AIPs that SATVOICE is available for routine communications.

CNSG noted an assessment which showed that only 46% of flight plans which filed SATVOICE capability in Item 10 filed CODE/ [aircraft address in hex code] in Item 18. The FAA is preparing an information document (InFO) to raise the awareness of flight plan requirements for filing REG/ and CODE/, which are used by ATS systems for multiple purposes, in Item 18 of the flight plan.

CNSG noted a draft common NAT AIC to promulgate information on 10 December 2015 on elimination of the High Frequency (HF) phraseology requirements for data link equipped aircraft to communicate "Controller Pilot Data Link Communications (CPDLC)", next Control Area (CTA) / Flight Information Region (FIR), Track and "SELCAL code". CNSG agreed that the planned implementation could take place as of 1 January 2016.

CNSG reviewed the ADS-B exclusion list procedures and the current exclusion list established by Canada, Iceland and Portugal, the ANSPs providing ADS-B in the NAT. CNSG agreed that the procedures be published on the ICAO EUR/NAT website.

CNSG reviewed the status of the NAT PBCS plan tasks cross-referencing them with the ICAO *PBCS Manual* (Doc 9869), Appendix A. CNSG amended the NAT PBCS plan and proposed that the updated plan be published.

IATA encouraged the NAT ANSPs to embrace AOC initiated DARP and continue implementation of CPDLC route clearance uplinks throughout the NAT. CNSG recognized that further coordination was necessary to implement DARP, which has significant operational benefits.

Portugal provided information on their implementation of CPDLC route clearances using UM79, UM80 and UM83. Effective with the start of RLatSM Phase 1, Gander Oceanic and Shanwick will have the capability to send a clearance using UM79, while the flight is within oceanic airspace. Iceland plans to complete their implementation early 2016.

CNSG noted the progress of the NAT IMG Structure Change Management Project Team (SCMPT) established by NAT IMG, the approved Terms of Reference of the new Procedures and Operations Group (POG), and Technology and Interoperability Group (TIG). CNSG noted that the TIG would largely replace the functions of the CNSG, including the ACSG and partially the OPS/AIR (e.g. RVSM performance specifications issues) subgroups, and possibly some functions of SARSIG.

The TIG will start functioning January 2016. Election of a rapporteur will take place at the first meeting. Nominations should be sent to the EUR/NAT Office of ICAO two months before the meeting in accordance with the NAT SPG Handbook.

The first meeting of the NAT TIG will take place from 4 to 8 April 2016 in Paris, France. The second meeting is currently scheduled in the last week of September 2016 in Dublin, Ireland.

Implication for Business Aviation:

Note. Operators should note flight plan requirements for filing REG/ and CODE/ in Item 18 of the flight plan. Operators should ensure that filed flight plan codes agree with the approved datalink capability on the aircraft.

Note. Flight crews should respond to UM137 (Confirm Assigned Route) with a downlink report DM40 (Assigned Route) which provides the active route from the FMS.

Note. Aircraft operators with capable avionics may want to consider reconfiguring the avionics to continuously use SATCOM in those areas of the world with intermittent VHF coverage. Use of VHF in those areas may degrade data link performance.

Note. Before terminating ADS-C connections, flight crews should coordinate with ATC.

Note. Flight crews are encouraged to be familiar with ATC terminology related to data link connection reset.

Note. Operators should note a NAT AIC on elimination of the High Frequency (HF) phraseology requirements for data link equipped aircraft to communicate "Controller Pilot Data Link Communications (CPDLC)", next Control Area (CTA) / Flight Information Region (FIR), Track and "SELCAL code".

Note. Aircraft operators are encouraged to submit DLMA problem reports for any occurrences of CPDLC uplink message non-delivery or any CPDLC uplink message delayed by more than 300 seconds (5 minutes).

Decisions Required:

To make decisions on the timely acquisition of equipment, degree of training and certification required to meet the requirements to efficiently continue accessing airspace.