

NAT PERFORMANCE BASED COMMUNICATION AND SURVEILLANCE (NAT PBCS) IMPLEMENTATION PLAN V-2017-1 (AS ENDORSED AT NAT IMG/50)

(Appendix G to the NAT IMG/50 Summary of Discussions – NAT IMG Decision 50/3 refers)

This plan addresses the application of Required Communication Performance (RCP) and Required Surveillance Performance (RSP) associated with the NAT data link operations services in support of implementation of performance-based horizontal separation minima in accordance with ICAO Doc 4444 provisions applicable in November 2016. These minima include 5-minute (referred to as RLongSM), 30 NM and 50 NM longitudinal separation minima and 23 NM lateral separation minimum. Application of 23 NM lateral separation minimum on half degree tracks in the NAT OTS is referred to as RLatSM. This plan has been expanded in scope to include implementation of all performance-based horizontal separation minima, which are dependent on RCP/RSP.

Further applications of RCP/RSP to communication and surveillance capability may be considered by NAT SPG in situations where it has been found to be beneficial. At such time, the NAT Performance Based Communication and Surveillance Implementation Plan would be amended.

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Doc 9869 TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
Group A tasks – State/Region preparation					
A-1 (old 11)	AIP – Prescription of an RCP/RSP specification	Consistent with Task A-4.	States	AIPs and other State documents supporting NAT SUPPS and/or PANS ATM – Amend AIPs and other State documents to support NAT SUPPs amendment proposed in Task A-4 and/or PANS-ATM.	PENDING The work is pending completion of the PfA for the NAT SUPPS in Task A-4. To be published at least 2 AIRAC cycles before 29 March 2018 Common AIC TBD POG/4
A-2 (new)	ANSP – PBCS policies, objectives supporting safety oversight	Prior to operational implementation of performance-based separation minima (i.e. prior to publication of Doc 7030 per Task A-4 and is no longer in a “trial” status)	States,	State regulations, policies and guidance material for ANSP in providing services dependent on PBCS.	PENDING The following sequence of events will facilitate States/ANSPs having the systems and capability to provide services that comply with RCP 240/RSP 180: a) Review ICAO Annexes, PANS and PBCS Manual (Doc 9869), GOLD Manual (Doc 10037 - completed; b) See Task A-4 – Revise NAT SUPPS to include RCP 240 and RSP 180 specifications for specified separation standards – ongoing ; c) See Task A-1 – Establish lead time for States to establish State regulations and guidance using ICAO documents – before 29 March 2018; d) ICAO Annexes, PANS and Manuals applicable – completed.”

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A-3 (old 16)	Operator and Aircraft System – PBCS policies, objectives supporting safety oversight	Prior to operational implementation of performance-based separation minima (i.e. prior to publication of Doc 7030 per Task A-4 and is no longer in a “trial” status)	States, Users	<p>State regulations and guidance material – Provide guidance to States on application of PBCS to communication and surveillance supporting data link mandate and performance-based separation minima.</p> <p>Develop or revise State guidance and/or regulations, as necessary.</p> <p>a) Establish State airworthiness requirements. Establish operational policy/procedures requirements for operational approval;</p> <p>b) Prepare State inspectors to perform tasks for operational approval;</p> <p>c) Develop plan to issue operational approval to national operators by [date], to extent possible. Train pilots and, if applicable, dispatchers on RCP/RSP aspects of reduced separation; and</p> <p>d) Develop and distribute operations manuals, pilot bulletins or other appropriate docs containing RCP/RSP policy/procedures.</p> <p>See related Task C-1f.</p>	<p>PENDING</p> <p>The following sequence of events will facilitate States having the capability to authorize their operators and aircraft to RCP 240/RSP 180:</p> <p>a) Review ICAO Annexes, PANS and PBCS Manual (Doc 9869), GOLD Manual (Doc 10037) – unedited advance version are available completed;</p> <p>b) See Task A-4 – Revise NAT SUPPS to include RCP 240 and RSP 180 requirements for specified separation standards – ongoing;</p> <p>c) See Task A-1 – Establish lead time for States to establish State regulations and guidance using ICAO documents – before 29 March 2018;</p> <p>d) NAT OPS/AIR update the Data Link Job Aid Template to include RCP 240/RSP 180 per NAT IMG/44 SoD, paragraph 4.83 – complete date TBD;</p> <p>e) Inform States of example RCP/RSP authorization documents published by other States – completd. Examples from Canada available.the United States -ongoing;</p> <p>f) Notify States by State letter of date by which operators/aircraft must be authorized, could be extended following outcome of Task B-2 – completed, follow up to NAT SPG/52; and</p> <p>g) ICAO Annexes, PANS and Manuals applicable – completed.”</p>

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A-4 (old 10)	Regional Supplementary Procedures (Doc 7030) for PBCS operations, if applicable	NAT IMG/42 and NAT SPG/49. Pending the outcome of the work on the global provisions (NAT SPG/50 report refers)	NAT PBCS PT	PfA for NAT Regional Supplementary Procedures (NAT SUPPS) - Draft or update PfA (or revise existing drafts) to the NAT Regional Supplementary Procedures (SUPPs) (Doc 7030) to prescribe the performance specifications for communication and surveillance to support RLatSM and RLongSM. PfA should include criteria for operator eligibility, aircraft equipage, requirements for flight planning, monitoring, alerting and reporting. A transition strategy for current implementation of 30 NM lateral and 30 NM and 50 NM longitudinal separation needs to be considered.	COMPLETED

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Group B tasks – ANSP general project development and management					
B-1 (old 1)	PBCS Implementation Plan	NAT IMG/38 and NAT SPG/47	NAT CNSG	Prepare a draft plan outlining the tasks to implement performance based communication and surveillance for consideration by the NAT IMG.	COMPLETE Periodically reviewed and updated. The plan was completed and endorsed by NAT SPG/47 (NAT SPG Conclusion 47/5). The NAT IMG was directed to manage and execute the plan. The NAT CNSG was assigned lead.
B-2 (old 2)	Target dates for PBCS and relevant ATM operations	29 March 2018 target date	NAT IMG	Identify Key Target Dates on implementing performance based framework for communication and surveillance and prescribing RCP/RSP specifications to support RLongSM, and RLatSM. A transition strategy for current implementation of 30 NM lateral and 30 NM and 50 NM longitudinal separation needs to be considered.	COMPLETED
B-3 (old 3)	RCP/RSP specifications	NAT SPG/48	NAT SARSIG	a) Confirm applicable performance specifications that will be used for operational implementation of data link services in support of RLongSM. Detail and validate CRM assumptions against actual performance measurements in accordance with Doc 4444 and Doc 9869. b) Confirm applicable performance specifications that will be used for operational implementation of data link services in support of RLatSM. Detail and validate CRM assumptions against actual performance measurements in accordance with Doc 4444 and Doc 9869.	COMPLETED a) For NAT data link operations, RCP 240 will be used to measure CPDLC performance and RSP 180 will be used to measure ADS-C performance. b) RCP 240 and RSP 180 will be prescribed for application of RLatSM (23 NM Lateral), RLongSM (5 minute longitudinal), 30 NM and 50 NM longitudinal separation minima (in accordance with ICAO Annex/PANS provisions developed by OPLINKP and SASP). <i>Note.— As agreed in the plan, during trials of RLongSM and RLatSM, specifications are not prescribed, but will provide guidelines against which the actual performance is measured.</i> (NAT SPG Conclusion 48/7, NAT SPG/48 SoD, Appendix I, and NAT SPG Conclusion 49/05 refers)

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B-4 (old 4)	PBCS awareness	1 st Workshop Feb 2013 2 nd Workshop Jun-2015	ICAO/ States	Workshop(s) – Conduct workshops to raise awareness on performance based communication and surveillance and promote the implementation of the plan.. Establish a planning team to work with ICAO and subject matter experts to develop and present material at workshops, as needed.	ONGOING One workshop held 20-22 Feb 2013. One workshop held 17-19 June 2015 More workshops may be convened, if needed. Other means to raise awareness may be considered. Workshop 2 nd half 2017 on PBCSs approvals process, information sharing and common AIC
Group C tasks – ANSP implementation activities – ATS service provision					
C-1a (old 5)	Operational concepts and procedures for PBCS operations – Operational concepts	NAT IMG/42and NAT SPG/49	NAT ATMG in coordination with CNSG	a) Update operational concepts for implementation of RLatSM and RLongSM supported by data link to include associated RCP/RSP specifications. b) Develop operational concept (of use), including procedures using CPDLC and ADS C to reduce the number and exposure of operational errors and pilot deviations, regardless of whether or not reduced ADS C based separations are applied. For example, concept of use should detail conformance monitoring, intervention and route re-clearances when using data link. c) Review and comment on material for incorporation in GOLD, as appropriate, NAT Doc 006 and Doc 007.	COMPLETED for RLongSM and RLatSM. RLongSM – Concept of Operations –NAT SPG/48 Appendix F, RLongSM Plan. RLatSM – Concept of Operations – NAT SPG/48 SOD, Appendix D. IMG Decision 43/04, Appendix F. RLatSM Plan. RLatSM Task List. Mandate Plan – NAT SUPPs Data Link Mandate Task List.

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C-1b (old 6)	Operational concepts and procedures for PBCS operations – GOLD amendments	NAT IMG/42 and NAT SPG/49	GOLD ad-hoc group	Develop GOLD material, as appropriate, in support of reduced separations: <ul style="list-style-type: none"> - the provisions for data link service (AIC, guidance for AIPs, eligibility requirements, etc); - performance specifications; - initial qualifications for operations of operators, aircraft and ATC; and - post implementation monitoring. Specific amendments to GOLD are identified in Tasks C-1a and C-1c through C-1f .	COMPLETED Completed with regards to Tasks C-1a and C-1c through C-1f .
C-1c (old 7)	Operational concepts and procedures for PBCS operations – Contingency procedures	NAT IMG/42 and NAT SPG/49	NAT ATMG/CNSG	Develop flight crew and controller contingency procedures in the event of service outage, malfunction or failure that would cause performance to degrade below that required by performance specifications. Doc 006 will include reference to GOLD, Chapters 4 and 5. Review and comment on material for incorporation in GOLD, as appropriate, NAT Doc 006 and Doc 007.	COMPLETED. No additional/specific material is needed. NAT ATMG/42 report refers.
C-1d (old 8)	Operational concepts and procedures for PBCS operations – Restoration of service	NAT IMG/42 and NAT SPG/49	NAT ATMG/CNSG	Develop the criteria for resuming data link service, RLatSM, or RLongSM operations after service communication and/or surveillance capabilities are restored to acceptable level of performance. Include in NAT Doc 006. Amendments are needed to ensure that long duration outages/degradations are also considered. Similar provisions should be included in the GOLD and NAT Doc 007. Review and comment on material for incorporation in GOLD, as appropriate, NAT Doc 006 and Doc 007.	COMPLETED. No additional/specific material needed. NAT ATMG/42 report refers.

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C-1e (old 14)	Operational concepts and procedures for PBCS operations – RCP/RSP compliance determination	NAT IMG/42 and NAT SPG/49	CNSG	Develop a guidance material to clarify the interpretation of performance specifications in terms of compliance/non-compliance. Review and comment on material for incorporation in GOLD, as appropriate. See related Task E-1 .	COMPLETED. NAT SPG Conclusion 49/05 refers. The intent of NAT SPG Conclusion 49/5 was incorporated into GOLD, 2 nd Edition, and is contained in the OPLINKP draft Doc 9869 (PBCS Manual), targeted for publication in 1st Quarter 2015.
C-1f (old 15)	Operational concepts and procedures for PBCS operations - Guidelines on operator eligibility	NAT IMG/42 and NAT SPG/49	OPS/AIR	Provide guidance to State regulators related to aircraft equipage and operator eligibility requirements taking into account the GOLD and performance specifications. Refer to FAA AC 20-140A and AC 120-70B. Other State material may apply. Review and amend GOLD, if required. See related Task A-3 .	COMPLETED Guidelines on operator eligibility were updated in the GOLD, 2 nd Edition, and is contained in the OPLINKP draft Doc 9869 (PBCS Manual), targeted for publication in 1st Quarter 2015.
C-2a (old 9)	ATC automation changes to use flight plan RCP/RSP indicators – Flight plan requirements	Doc 4444 target date – November 2016	NAT CNSG ICAO (Global)	Draft guidance material for the flight plan to define the descriptors for performance specifications, as appropriate, using the new format planned for 2012 implementation. Include definition of P descriptors in Item 10a and expansion or redefinition of descriptors for ADS-C. Review and comment on material for incorporation in GOLD, as appropriate.	COMPLETED.

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C-2b (old 12b)	ATC automation changes to use flight plan RCP/RSP indicators	Prior to operational implementation of performance-based horizontal separation minima (i.e. prior to publication of Doc 7030 per Task A-4 and is no longer in a “trial” status)	NAT ANSPs	Implement changes to recognize new flight plan descriptors defined under Task C-2a to configure system, as necessary (e.g. set timers) for operations predicated on communication and surveillance performance and apply operations only to eligible aircraft. This task should be complete prior to operational implementation of RLatSM or RLongSM. A transition strategy for current implementation of 30 NM lateral and 30 NM and 50 NM longitudinal separation is needed.	PENDING. before 29 March 2018.
C-3 (old 12a)	ATC automation changes for PBCS monitoring	Before the start of operational trials of RLongSM or RLatSM.	NAT ANSPs	Implement post-implementation monitoring capability in ATC automation. See related Task E-1.	COMPLETE Data collection function is completed. The status is reported by each NAT ANSP at NAT CNSG meetings. Gander – completed Shanwick – completed Reykjavik – completed Santa Maria – completed New York – completed Bodø – completed Shannon – completed

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C-4 (old 13)	Confirm initial ANSP compliance with RCP/RSP specifications	Prior to operational implementation	ANSPs/ DLMA/ CNSG/	<p>Confirm actual CPDLC and ADS C performance of ANSP. Collect and analyze data in accordance with PBCS Manual (Doc 10037), Appendix D.</p> <p>Provide a clear indication of whether or not RCP 240 and RSP 180 can be met in each NAT Oceanic Control Area currently being assessed.</p> <p>Where RCP 240/RSP 180 cannot be met, determine and execute corrective action.</p> <p>See related Task E-1.</p>	<p>COMPLETED.</p> <p>Performance reports provided at CNSG, IMG and SPG meetings to confirm aggregate performance of control areas. See task D-2 for task to confirm operator.</p> <p>Measuring against RSP180 and RCP240 is implemented.</p> <p>(NAT SPG Conclusion 48/7 and 49/05 refers).</p> <p>NAT SARSIG work completed for the task (NAT SARSIG/19 SoD, para 4.7 refers).</p> <p>This task is has been completed for ANSP “airspace aggregate” and the ongoing status of performance from continued monitoring will be maintained under Task E-1</p>

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Group D tasks – Aircraft operator, Aircraft type/system (airworthiness) eligibility					
D-1 (old 16)	Aircraft operator readiness	Prior to operational implementation of performance-based horizontal separation minima- (i.e. prior to publication of Doc 7030 per Task A-4 and is no longer in a “trial” status)	States, Users	Develop or revise State guidance and/or regulations, as necessary. a) Establish State airworthiness requirements. Establish operational policy/procedures requirements for operational approval; b) Prepare State inspectors to perform tasks for operational approval; c) Develop plan to issue operational approval to national operators by [date], to extent possible. Train pilots and, if applicable, dispatchers on RCP/RSP aspects of reduced separation; and d) Develop and distribute operations manuals, pilot bulletins or other appropriate docs containing RCP/RSP policy/procedures. See related Task C-1f .	PENDING The following sequence of events will facilitate States having the capability to authorize their operators and aircraft to RCP 240/RSP 180: a) Review ICAO Annexes, PANS and PBCS Manual (Doc 9869), GOLD Manual (Doc 10037) – completed; b) See Task A-4 – Revise NAT SUPPS to include RCP 240 and RSP 180 requirements for specified separation standards – ongoing; c) See Task A-1 – Establish lead time for States to establish State regulations and guidance using ICAO documents – completed; d) NAT OPS/AIR update the Data Link Job Aid Template to include RCP 240/RSP 180 per NAT IMG/44 SoD, paragraph 4.83 – completed e) Inform States of example RCP/RSP authorization documents published by other States – completed; f) Notify States by State letter of date by which operators/aircraft must be authorized, could be extended following outcome of Task B-2 – completed; and g) ICAO Annexes, PANS and Manuals applicable – completed.”
D-2 (old 13)	Confirm initial operator and/or aircraft type/system compliance with RCP/RSP specifications	Prior to operational implementation NAT IMG/51	ANSPs/ Sates/IATA&IBAC	Assess the readiness of operators to file PBCS indicators.	PBCS monitoring data is available through NAT ANSPs. Sharing of PBCS monitoring data mechanisms – ONGOING

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Group E tasks – All stakeholders – post-implementation monitoring					
E-1 (old 17)	PBCS monitoring - Post-implementation		ANSP/s/ NAT DLMA/ NAT TIG, PBCS IS PT	Post-implementation monitoring, analysis and corrective action per Doc 9869, Appendix D and any other necessary monitoring tasks. When performance falls below specified levels, operational judgment may be a consideration in determining appropriate actions. See related Tasks C-2a, C-2b, D-2 and C-1e.	ONGOING. - Annual PBCS reports provided to NAT SPG Sharing of PBCS monitoring data mechanisms - ONGOING

-END-