

Agenda Item 6.5

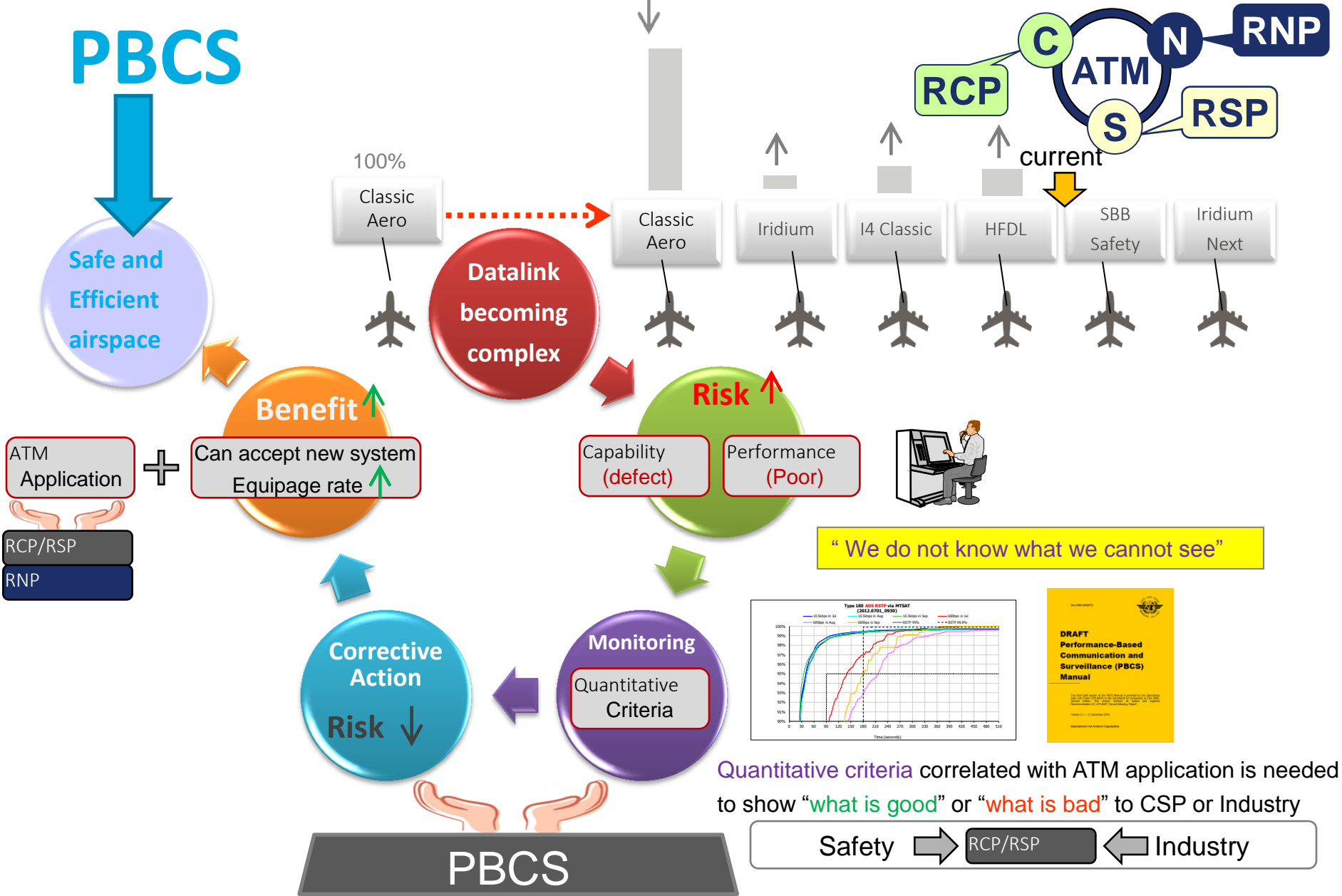
WP-7

Performance Based Communications and Surveillance (PBCS)

ISPACG 29
Santiago, Chile
4-5 March 2015



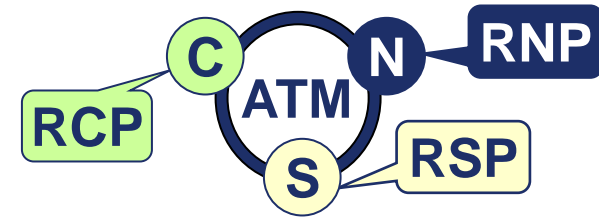
PBCS



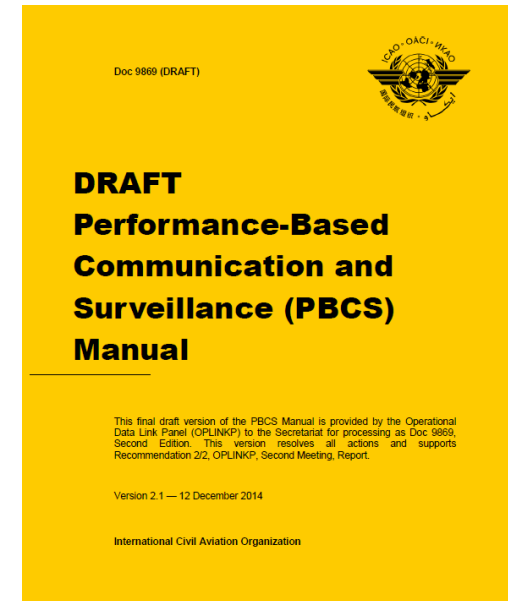
Quantitative criteria correlated with ATM application is needed to show "what is good" or "what is bad" to CSP or Industry

Safety → RCP/RSP ← Industry

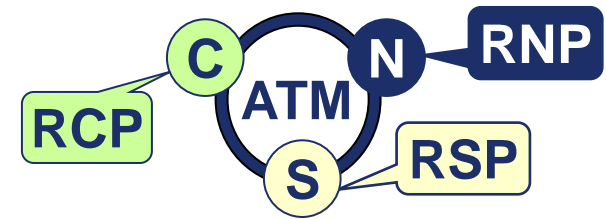
PBCS – Asia/Pac



- APANPIRG Conclusion 22/20 – Second Satellite Data-link Operational Continuity (SOCM/2) and Seminar on Satellite Data-link Communication (Feb 2012)
- APANPIRG Conclusion 23/13 – Data Link Performance Monitoring Seminar (Mar 2013)
- APANPIRG Conclusion 23/24 – Workshop on RCP and RSP (May 2013)
- Since 2011 and on-going – ISPACG and IPACG planning for PBCS implementation
- APANPIRG Conclusion 24/24 ADS-C and CPDLC problem reporting and analysis
- APANPIRG Conclusion 24/25 En-route monitoring agency role and tasks
- APANPIRG Conclusion 24/34 Adopt GOLD Edition 2
- APANPIRG Decision 24/33 APAC RCP/RSP Implementation Framework.

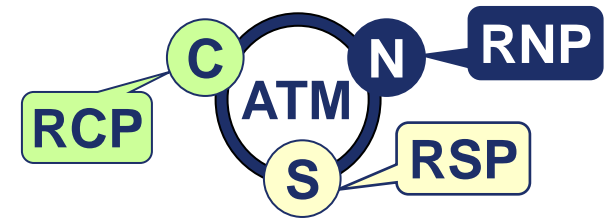


PBCS Implementation



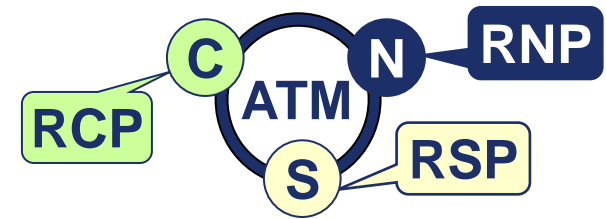
- ICAO OPLINKP have completed proposals for amendment to Annex and PANS incorporating PBCS (November 2016) and also completed a significant rewrite of Doc 9869 which has been re-named as the PBCS Manual (refer Attachment 5).
- At ISPACG 25 in March 2011 ISPACG agreed to a recommendation from FIT 18 to implement a performance based approach for communications and surveillance.
- Following on from PBCS workshops in Bangkok in 2013 APANPIRG agreed Conclusion 24/33 that requires APANPIRG sub-groups include in their work program and implementation initiatives consideration of the required communication performance (RCP) and required surveillance performance (RSP) framework.

Proposed Annex 6



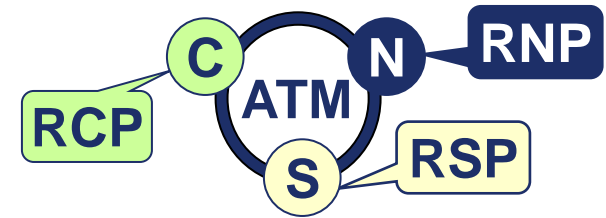
- Annex 6 – Aircraft Operations – Part 1 – Chapter 7
 - Where communications or surveillance equipment is required in defined airspace to meet RCP/RSP specifications for PBCS the aeroplane shall:
 - be authorized by the State of the Operator for operations in such airspace and have information relevant to the RCP/RSP specification capabilities listed in the flight manual or other aeroplane documentation, approved by the State of Design or State of Registry; and
 - have information relevant to the RCP/RSP specification capabilities included in the MEL.

Proposed Annex 6



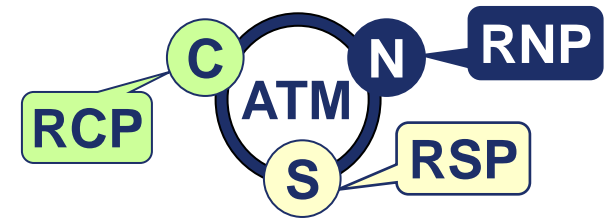
- Annex 6 – Aircraft Operations – Part 1 – Chapter 7
- Where communications or surveillance equipment is required in defined airspace to meet RCP/RSP specifications for PBCS the state of operator shall ensure that the operator has:
 - requirements for normal and abnormal procedures including contingency procedures; flight crew qualification and proficiency requirements, in accordance with appropriate RCP/RSP specifications;
 - training programme for relevant personnel consistent with the intended operations; and
 - appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RCP/RSP specifications.

Proposed Annex 6



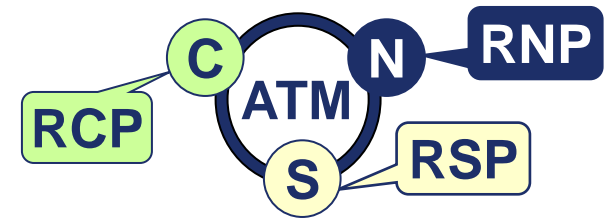
- Annex 6 – Aircraft Operations – Part 1 – Chapter 7
 - The State of the Operator shall ensure that adequate provisions exist for:
 - receiving the reports of observed communication performance issued by the monitoring programmes established in accordance with Annex 11, and
 - taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RCP specification.

Proposed Annex 11



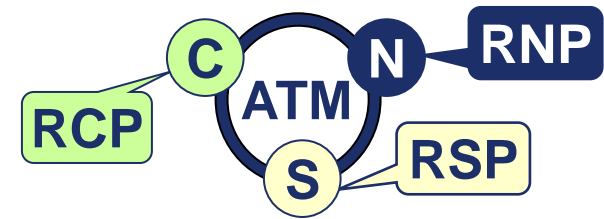
- Annex 11 – Air Traffic Services – Chapter 2
 - Performance-based communications/surveillance (PBC/PBS) shall be applied to any ATS system change that is predicated on communication performance/surveillance, including the implementation of a reduced separation minimum or new procedure.
 - *Note: May be superseded by SASP PfA to amend procedures for 30/50NM separations to require RCP240/RSP180 (SASP Nov 2014).*

Proposed Annex 11



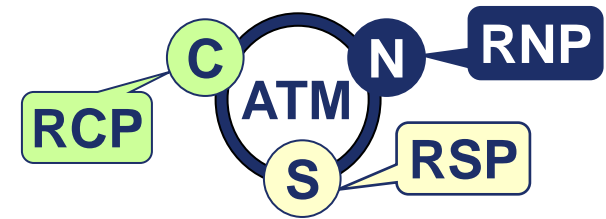
- Annex 11 – Air Traffic Services – Chapter 3
 - Where RCP/RSP specifications are applied, programmes shall be instituted for monitoring the performance of the infrastructure and the participating aircraft against the appropriate RCP and/or RSP specifications, to ensure that operations in the applicable airspace continue to meet safety objectives.
 - When applicable, arrangements shall be put in place, through interregional agreement, for the sharing between regions of data and/or information from monitoring programmes.

Proposed Doc 4444



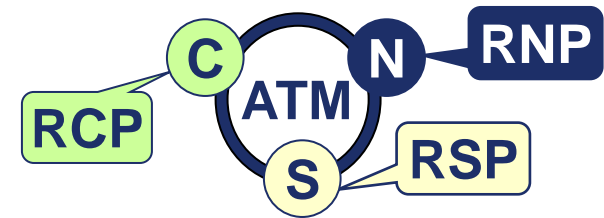
- PANS-ATM Doc 4444 – Chapter 4
 - An operator shall, prior to departure ensure that, where the flight is intended to operate where an RCP specification type is prescribed, an appropriate operational RCP/RSP approval has been granted, and that all conditions applying to that approval will be satisfied.
- PANS-ATM Doc 4444 – Appendix 2
 - Item 10 – Equipment and Capabilities. Add designators for RCP:
 - P1- CPDLC RCP 400;
 - P2- CPDLC RCP 240;
 - P3 -SATVOICE RCP 400
 - Item 18 – Other Information. Add appropriate RSP designator using SUR/

PBCS Checklist



- Doc 9689 PBCS Manual
 - OPLINKP have included a checklist in Appendix A of the revised Doc 9689 that provides guidelines on the steps required to implement PBCS. (Refer Attachment 2.)
 - The checklist is organised as follows:
 - Group A tasks – State/Region preparation;
 - Group B tasks – ANSP general project development and management;
 - Group C tasks – ANSP implementation activities – ATS service provision;
 - Group D tasks – Aircraft operator, Aircraft type/system (airworthiness) eligibility; and
 - Group E tasks – All stakeholders – post-implementation monitoring.

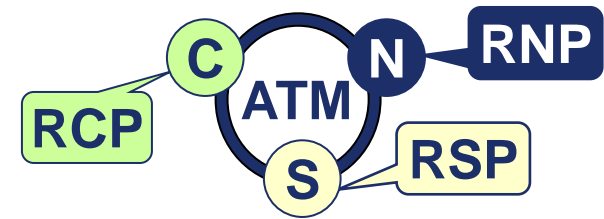
PBCS Checklist



➤ PBCS Checklist – Group A Tasks – State Region Preparation

TASK ID	TASK DESCRIPTOR	TASK DETAIL	REFERENCE(S)
A3	Operator and Aircraft System – PBCS policies, objectives supporting safety oversight	<p>Identify means to determine aircraft operator eligibility requirements for PBCS operations, including requirements for operations, maintenance, aircraft system and CSP/SSP service agreements, if applicable:</p> <ol style="list-style-type: none"> Establish State airworthiness requirements; Establish operational policy/procedures requirements for operational approval; Prepare State inspectors to perform tasks for operational approval; Develop plan to issue operational approval to national operators. Train pilots and, if applicable, dispatchers on PBCS operations; and Develop and distribute operations manuals, pilot bulletins or other appropriate documents containing PBCS policy and/or procedures. <p><i>Note.— State of the Operator identifies means for commercial air transport operations. State of Registry identifies means for general aviation operations. State of Design identifies means for design approval of the aircraft system.</i></p>	<p><u>PBCS Chapter 5</u> <u>Section 5.2.1</u> <u>Section 5.2.3</u></p>

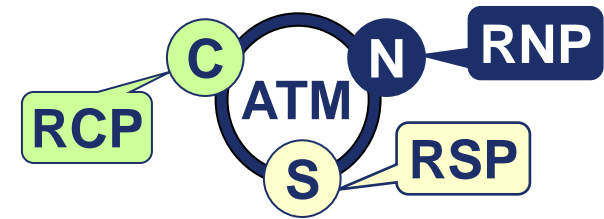
ISPACG PBCS Plan



➤ ISPACG PBCS Implementation Plan

- Propose that an ISPACG PBCS implementation plan based on the checklist from Doc 9869 will focus stakeholders on the steps required to implement an effective PBCS framework in the region.
- The current NAT PBCS plan is included at Attachment 3 as an example.
- Discussed at ISPACG PT/16 and 17
- DWG Chair proposed “tiger team” consisting of representatives from each state to prepare plan.
 - Develop material
 - Monitor progress of each state/ANSP
 - Report back at ISPACG 30

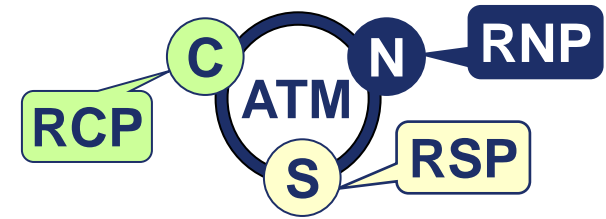
NAT PBCS Plan



➤ NAT Implementation Plan

TASK ID	TASK DESCRIPTOR	COMPLETE BY	LEAD	TASK DETAILS	STATUS
12a	ATC automation changes for monitoring	Before the start of operational trials of RLongSM or RLatSM.	NAT ANSPs	Implement post-implementation monitoring capability in ATC automation. See related Task 17	PENDING 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 – March 2015 TBC Shannon – completed

PBCS Implementation



- The meeting is invited to:
 - Note the proposed changes for Annex and PANS-ATM regarding PBCS.
 - Agree the need for an ISPACG PBCS implementation plan.
 - Allocate resources to draft and maintain the plan.