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ICAO UPDATE ON GOLD AND PBCS MANUALS

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- **Update to the GOLD Manual (Doc 10037)**
- **Update to the PBCS Manual (Doc 9869)**
- **Future Developments**

- **Update of information presented to FIT-Asia/9**



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UPDATE TO PBCS MANUAL (DOC 9869)



3rd Edition, 2020-2021



- 1. Improve guidance** on PBCS framework (operational authorization, CSP compliance and PBCS monitoring, etc.)
- 2. Improve safety requirements** related to the existing RCP/RSP specifications
- 3. Include new RCP specification**



1. Improve guidance on PBCS framework

- Training requirements, inspector checklist and alternative means of demonstrating compliance for operational authorization
- CSP compliance and notification
- ATSP's safety assessment and mitigation measures
- Compilation, filtering, interpretation of data
- Common list of issues affecting performance/connection between ATC and aircraft
- Clarified role of RMAs in PBCS

2. Improve safety requirements

- Single set of safety requirements agnostic to technologies and independent of an specification

CNS/ATM Safety Requirement	Related RCP parameter	Elements of the CNS ATM System		
		Aircraft System	ATS Provider	Operator
SR-2 A detected loss of data link communication service (i.e. CPDLC or ADS-C) shall be indicated to the controller/flight crew.	A, C	SR-AC-CPDLC-2A The aircraft system shall indicate to the flight crew a detected loss of CPDLC service.	SR-GD-CPDLC-2A The ATSU system shall indicate to the controller a detected loss of CPDLC service.	None
		SR-AC-CPDLC-2B After the end of a flight or after a power cycle resulting in a cold start or when CPDLC is turned off by aircraft systems, the aircraft system shall prohibit use of any CPDLC service prior to initiation of a new logon.		
SR-3 Data link communication service (i.e. CPDLC or ADS-C) shall be established in sufficient time to be available for operational use.	A	None	SR-GD-CPDLC-3A CPDLC service shall be established in sufficient time to be available for use.	

Changed in 3rd Edition

2. Improved safety requirements

- A mapping table with alternative means of compliance for available technologies (FANS 1/A, ATN B1)

PBCS	ATN B1 Standard (i.e. DO-290/ED-120)	Alternative Means of Compliance
Safety Requirement	Safety Requirement	
SR-AC-CPDLC-1A The aircraft system shall provide an indication to the flight crew when a CPDLC connection for a given aircraft-ATSU pair is established.	None	The Operating methods defined in Table 5-1, 5-3 and 5-15 of RTCA/EUROCAE SPR Standard DO-290/ED-120 ensure that ATN B1 implementations comply with the PBCS Safety Requirement.
PBCS	FANS 1/A+ Standard (i.e. DO-306/ED-122)	Alternative Means of Compliance
Safety Requirement	Safety Requirement	
SRs Allocated to Aircraft System		
SR-AC-CPDLC-1A The aircraft system shall provide an indication to the flight crew when a CPDLC connection for a given aircraft-ATSU pair is established.	None	The Interop Requirements specified in 4.6.6.7 of RTCA/EUROCAE Interop Standard DO-258A/ED-100A and Operating Method defined in Table 4-4 of RTCA/EUROCAE SPR Standard DO-306/ED-120 ensure that FANS 1/A+ implementations comply with the current Safety Requirement.

New in 3rd Edition



3. New RCP specifications for domestic data link operations & one-stage dialing SATVOICE

- For data datalink, based on RCP130 developed by RTCA/EUROCAE
- For SATVOICE, new allocation scheme different from data link
- Ongoing validation of **operational requirements/usage**
- Ongoing validation of **technical viability**



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UPDATE TO GOLD MANUAL (DOC 10037)





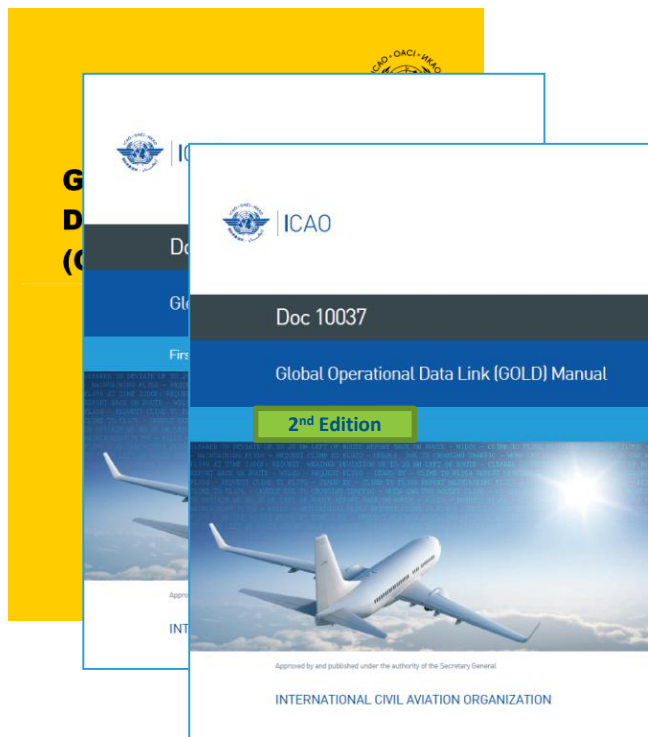
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UPDATE TO GOLD MANUAL (DOC 10037)



2nd Edition, 2020



1. Introduce new capabilities and services available in Baseline 2
2. Improve guidance on data link planning & implementation (concept of operations, technical validation, testing, trial, etc.)
3. Improve controller and pilot procedures
4. Add guidance on the use of CPDLC for departure clearance (DCL)



1st Edition

Chapter 1 Overview of Data Link Operations
Chapter 2 Administrative provisions related to data link operations
Chapter 3 Controller and radio operator procedures
Chapter 4 Flight crew procedures
...
Appendix B Regional/State-specific information

2nd Edition

Chapter 1 Overview of Data Link Operations - Existing capabilities and additional B2 capabilities
Chapter 2 <u>Implementation Considerations</u> (Concept of operation, planning, trial/ operational implementation and safety assessment)
Chapter 3 <u>Operational Procedures</u> (organized by operational scenarios)
Removed

Appendix A (Revised)

Route uplink message elements (RTEU)						New
Operational definition in ICAO PANS-ATM (Doc 4444)				CPDLC message sets		
Message element identifier	Message element intended use	Format for message element display	Resp.	FANS 1/A	ATN B1	B2
RTEU-4	Instruction to proceed, at the specified position, directly to the next specified position.	AT (<i>position</i>)PROCEED DIRECT TO (<i>position</i>)	W/U	UM77 AT (<i>position</i>) PROCEED DIRECT TO (<i>position</i>)	N/A	UM77RAT (<i>position</i> Atw) PROCEED DIRECT TO (<i>position</i> R)
RTEU-5	Instruction to proceed upon reaching the specified level, directly to the specified position.	AT (<i>level single</i>)PROCEED DIRECT TO (<i>position</i>)	W/U	UM78 AT (<i>altitude</i>) PROCEED DIRECT TO (<i>position</i>)	N/A	UM78RAT (<i>level single</i>) PROCEED DIRECT TO (<i>position</i> R)
RTEU-6	Instruction to proceed to the specified position via the specified route.	CLEARED TO (<i>position</i>) VIA (<i>departure data</i> [O]) (<i>en-route data</i>)	W/U	UM79 CLEARED TO (<i>position</i>)VIA (<i>route clearance</i>)	UM79 CLEARED TO (<i>position</i>) VIA (<i>route clearance</i>)	UM79R CLEARED TO (<i>position</i> R) VIA (<i>departure data</i> [O]) (<i>route clearance</i> R)



Appendix B Regional and State Specific Information (Removed)

- ✓ States and ANSPs will be encouraged to adopt global procedures in the implementation of ATS data link services
- ✓ If necessary, each region may consider adopting regional procedures and identify appropriate means of keeping the information up-to-date



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EXPECTED AVAILABILITY

UPDATED GOLD MANUAL

UPDATED PBCS MANUAL





Availability:

- **GOLD Manual** – targeted for publication by end 2020
- **PBCS Manual** – Delayed. Dates TBA (dependent on OPDLWG progress)



THANK YOU!