



ICAO

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WORKING PAPER

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Second NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/2)
Puntarenas, Costa Rica, 1 to 4 June 2015

Agenda Item 4 Follow-up on the NAM/CAR Regional Performance Based Air Navigation Implementation Plan (NAM/CAR RPBANIP)

4.1 Progress reports of the Task Forces and the ANI/WG

ANI/WG GOLD (CPDLC/ADS-C) IMPLEMENTATION TASK FORCE PROGRESS REPORT

(Presented by ANI/WG GOLD Task Force Rapporteur)

EXECUTIVE SUMMARY	
<p>This working paper presents the progress achieved by the GOLD Task Force (TF) since its creation in the ANI/WG/1 Meeting and its follow-up made in the NACC/WG/04 Meeting. Following the work programme of the Task Force and its deliverables, the note includes the results for these deliverables and recommendations for improving the Task Force function and coordination.</p>	
Action:	The suggested action is presented in Section 3
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency
<i>References:</i>	<ul style="list-style-type: none">• NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP)• First NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/1), Mexico City, Mexico, 29 July to 1 August 2013• Fourth North ANERICA, Central American and Caribbean Working Group Meeting (NACC/WG/04), Ottawa, Canada, 24 to 28 March 2015• 2015 CAR Project RLA/09/801 CPDLC/ ADS-C Go-team planning

1. Introduction

1.1 During the ANI/WG/1 Meeting, and based on the ANI/WG ToRs, and Work Programme, the Meeting considered the existence of the various existing Ad-hoc Groups that were working in support of the implementation working Task groups, such as the ADS-B TF, the GOLD TF, etc., and considered necessary to group them under the ANI/WG structure, including any other specific implementation task group, with the aim of providing continuity. In this regard, seven topics that shall be developed through Task Forces under the ANI/WG were identified.

2. GOLD TF Progress and Results

2.1 The GOLD TF had their Terms of Reference and work programme approved by the NACC/WG/04 meeting, where the task for “assistance and supporting the coordination of the implementation of CPDLC applications” was included, as presented in **Appendix A** to this paper.

2.2 During the NACC/WG/4, the progress report on CPDLC and ADS-C as shown in **Appendix B** to this paper. A follow-up to the work programme is presented in **Appendix C**.

2.3 The GOLD TF developed some considerations for the implementation of CPDLC and an Action Plan template for this implementation as shown in **Appendix D and E** respectively.

2.4 The implementation of CPDLC, ADS-C is planned for continental remote and oceanic airspaces, identifying the following areas as applicable: the PIARCO FIR, Central American FIR- Pacific Oceanic airspace, Mexico Mazatlán Oceanic Airspace and northern part of Curacao FIR. COCESNA and Trinidad and Tobago are conducting CPDLC, ADS-C trials, notifying them officially by NOTAMs.

2.5 Due to the discrete group of FIRs, the assistance to the implementation is being planned through the support of the CAR RLA/09/801 Project Technical Assistance Missions (TEAM). Two TEAMS has been scheduled, one for COCESNA (Central American FIR) and PIARCO FIR. The initial terms of reference of the TEAM is presented in **Appendix F**. Subject Matters experts (SME) from Canada and United States experts in the CPDLC/ADS-C implementation in the North Atlantic (NAT) are scheduled to support these TEAMS.

2.6 In order to support the CPDLC, ADS-C implementation, the following Draft conclusion is proposed:

Draft Conclusion

ANI/WG/02/xx CPDLC/ADS-C IMPLEMENTATION GUIDANCE AND CONSIDERATIONS

That, in order to support the implementation of CPDLC, ADS-C, the States involved in this implementation adopt as a reference the implementation consideration and Action Plan template as shown in Appendix xx and bb respectively.

2.7 Based on the Action Plan template, Mexico, COCESNA, Curacao and Trinidad and Tobago are invited to inform of their Action Plan for this implementation and provide as needed an effective assistance by the GOLD TF.

3. Suggested Action

3.1 The Meeting is invited to:

- a) take note of the progress made by the GOLD Taskforce regarding CPDLC/ ADS-C;
- b) review and approved the draft conclusion proposed in paragraph 2.6;
- c) Mexico, COCESNA, Curacao and Trinidad and Tobago are invited to inform of their Action Plan for the CPDLC, ADS-C implementation as detailed in paragraph 2.7; and
- d) take any action as deemed necessary.

**TERMS OF REFERENCE OF THE
OPERATIONAL ANALYSIS OF THE GOLD DOCUMENT VERSION 2 TASK FORCE**

1. Background

During the first ANI/WG meeting, a Gold Document Operational Review/CPDLC Task Force was formed in order to streamline related air navigation implementation activities. This Task Force shall examine the Global Operational Data Link Document (GOLD) for applicability in the NAM/CAR Regions and identify any potential regional differences as well as update and report progress to the ANI/WG based on the action plan for these tasks. A new task was added by the NACC/WG/04 Meeting to support the CPDLC implementation.

2. Responsibilities

The Task Force is responsible for:

- a) Work Programme Management
- b) Reviewing the GOLD Document for applicability in the NAM/CAR Regions
- c) Identifying any regional differences and documenting these as potential additions to the next edition of GOLD
- d) Assistance and supporting the coordination of the implementation of CPDLC applications
- e) Making recommendation to the ANI/WG on adoption of GOLD in the NAM/CAR Regions

3. Working Methods

The Task Force will:

- a) Present its work programme containing activities in terms of objectives, responsibilities, deliverables and timelines
- b) Avoid work duplication within the ANI/WG and maintain close coordination among the existing entities to optimize use of available resources and experience
- c) Designate, as necessary, ad hoc groups to work on specific topics and activities and organize clearly defined tasks and activities
- d) Coordinate tasks to maximize efficiency and reduce costs via electronic means including emails, telephone and teleconference calls, and convene meetings as necessary
- e) Report on and coordinate the progress of assigned tasks to the ANI/WG

4. Membership

Task Force Member- Name:	State/T/IO	email
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APPENDIX B

NACC/WG/04 CPDLC/ADS-C PROGRESS REPORTED

- a) The Progress done by COCESNA in the implementation of ADS-C/CPDLC in the Pacific sector of the Central American FIR (CENAMER) and the trials being conducted until the second quarter 2014.
- b) Canada provided an overview of their CPDLC and ADS-C planning and implementation
- c) No operational obstacles to the use of the GOLD Document were identified, so the adoption of the GOLD, Version 2 as the guidance material for data link procedures in the NAM/CAR Regions was recommended, resulting in NACC/WG/04 Conclusion
- d) Further to the need for data link guidance material, the TF suggested to extend the GOLD TF activities scope to provide assistance for the implementation, Canada leading this task
- e) The current GOLD TF work programme has been fulfilled and completed, but a new deliverable should be suggested to the ANI/WG to provide a means of continued support for data link implementation to newly implementing States/Organizations. The GOLD TF new responsibility would include providing assistance and supporting the coordination of the implementation of CPDLC applications. Therefore, the TF extends certain aspects of the current GOLD TF work programme until the end of 2015.
- f) No major regional differences were identified from what is currently written in the GOLD document. ICAO indicated that the current GOLD Document Appendix E tables contain the latest information/planning of the NAM/CAR States
- g) The progress reported by COCESNA with their trials in the Pacific Oceanic Airspace, Trinidad and Tobago's automated system capabilities for CPDLC and ADS-C
- a) Curacao joined the work of the GOLD TF for studying the implementation of CPDLC/ADS-C in the north western part of the Curacao FIR
- b) Mexico participated in the GOLD TF for analysis of the Mazatlan Oceanic Airspace implementation activities

**APPENDIX
GOLD TASKFORCE WORK PROGRAMME**

Tasks	Deliverables	Start Date	End Date	Responsible	Remarks
Review by each Member of ToR and draft work programme	Comments to GOLD TF	28/Oct/13	8/Nov/13	All Members	Completed
Final Review and definition of Work Programme	Comments to ToR and Work Programme to ICAO	15/Nov/13	15/Nov/13	GOLD TF Rapporteur	Completed
Review of GOLD Doc for applicability in the NAM/CAR Regions	Comments to Rapporteur on understanding GOLD Document	28/Oct/13	25/Nov/13	All Members	Completed General document and focus on Chap 3 and 4, Appendix E based on each FIR experience
	Identification of regional differences and documenting them as potential additions to the next edition of GOLD, draft 1	26/Jun/14	16/Dec/14	All Members	
	Identification of regional differences and documenting them as potential additions to the next edition of GOLD, draft 2	17/Jan/15	14/Nov/15	All Members	
	Regional differences in GOLD applicability to report to ICAO	15/Nov/15	15/Dec/15	GOLD TF Rapporteur	
	Recommendation to the ANI/WG on adoption of GOLD in the NAM/CAR Regions	28/Oct/13	27/Jan/14	All Members	Completed NACC/WG/04
	Final recommendations for adoption of GOLD Doc	30/Jan/14	30/Jan/14	GOLD TF Rapporteur	Completed NACC/WG/04
2 nd GOLD TF Teleconf	Review of GOLD specifics	26/Nov/13	26/Nov/13	All Members	Completed
3 rd GOLD Teleconf	Analysis of GOLD and preparation of inputs to the NACC/WG/04 Meeting	10/Jan/14	10/Jan/14	All Members	Completed

Tasks	Deliverables	Start Date	End Date	Responsible	Remarks
Coordination of progress among TF Members	Inputs to ANI/WG Chairman for presentation to NACC/WG/04 Meeting	23/Jan/14	23/Jan/14	Rapporteur	Completed
Assistance and supporting the coordination of the implementation of CPDLC applications	Update CPDLC Regional Plan Identification of implementation gaps the operational considerations and recommendations for the adoption of GOLD, Edition 2	1/Apr/14	31/Dec/15	GOLD TF IATA Interested States	Ongoing

CPDLC Implementation Considerations

Regulatory/Regional Coordination/Approval

1.	Advise purpose and use within present ATM concept
2.	Establish and reference GOLD as the source guidance material
3.	Coordinate safety implementation activities

This category involves any coordination with State or Regional stakeholders such as regulatory authorities or PIRGs

Air Traffic Management Considerations

1.	ATC and Technical Operations training
2.	Decision on which messages to support
3.	Pre-implementation live system testing
4.	Performance monitoring

This category involves activities to support overall ANSP system readiness

State/Operator Awareness

1.	State Letter development and promulgation.
2.	State AIP (ICAO) <ul style="list-style-type: none"> • Document amendment • Aeronautic Information Circular development and publication

This category involves activities to coordinate and advertise the addition of CPDLC services, includes procedures, flight planning, etc

Details and Examples

1.	The specific use of CPDLC for ATC functions would be described.
2.	This would be necessary so that the State can be aware of the guidance for procedures and monitoring requirements.
3.	Incorporation of CPDLC would normally follow SMS practices for changes to operating procedures.
1.	To be determined by implementer - Example, 2 hours (1 hour theory, 1 hour practice in simulator).
2.	To be determined by implementer.
3.	To be determined by implementer.
4.	As per GOLD guidance
1.	Advisory to States
2.	Should contain all procedures, including coverage area, implementation timelines, AFN logon address, etc

APPENDIX E

CPDLC/ADS-C IMPLEMENTATION Action Plan

STATE/ANSP: _____ Date: _____.

Task Name	Duration	Start	Finish
CPDLC CONOPS			
use of GOLD Document as official guidance material			
Initial concept: scope/purpose within current ATM OPS concept			
Safety assessment of the CPDLC Concept			
Approval of CPDLC concept			
CPDLC Implementation			
Decision on which messages to support			
System evaluation for compliance and improvements			
Review of operational procedures regarding CPDLC			
Contracting of Data service provider			
ATC Training regarding CPDLC			
Technical Operations training regarding CPDLC			
State letter development and promulgation			
Pre-implementation live system testing			
AIP publication- AIC			
Evaluation of tests and preparation for operational use			
CPDLC operation start			
Performance Monitoring			

TERMS OF REFERENCE

**CONTROLLER–PILOT DATA LINK COMMUNICATIONS (CPDLC)/ AUTOMATIC
DEPENDENT SURVEILLANCE - CONTRACT (ADS-C) IMPLEMENTATION GO-TEAM
ICAO REGIONAL TECHNICAL COOPERATION PROJECT — “CAR REGION
IMPLEMENTATION OF THE PERFORMANCE BASED AIR NAVIGATION SYSTEM ”
(RLA/09/801)**

1. References

The *Go-Team* consists of subject matter experts selected among Project Member States and led by the ICAO NACC Regional Office. The purpose is to provide States with assistance required for effective CPDLC/ ADS-C implementation that is aligned with regional air navigation and safety priorities contained in the NAM/CAR Regional Performance Based Air Navigation Implementation Plan (RPBANIP) under the following sub-projects:

<i>Sub-Project 1.</i>	<i>Implement a CAR Region PBN Airspace Concept</i>
<i>Sub-Project 2.</i>	<i>Implement Regional Air Traffic Flow Management (ATFM)</i>
<i>Sub-Project 3.</i>	<i>Implement Flexible Use Airspace (FUA)</i>
<i>Sub-Project 4.</i>	<i>Enhance ATS situational awareness and improve operational efficiency of ATS Unit(s)</i>
<i>Sub-Project 5.</i>	<i>Enhance Aerodrome Operations Capacity and Efficiency</i>
<i>Sub-Project 6.</i>	<i>Improve Regional Safety</i>
<i>Sub-Project 7.</i>	<i>Improve Search and Rescue System</i>

The *Go-Team* initiative was approved by the Third Steering Committee Meeting (SCM/3) held in [STATE / ANSP] in April 2014.

The *Go-Team* will provide Project Member States with technical assistance to meet the regional goals as agreed in the *Port-of-Spain Declaration* through the following:

- Development of CPDLC/ ADS-C implementation gap analysis
- Assistance in the application of the Global Operational Data Link Document (GOLD)
- Evaluation of CPDLC/ADS-C trials results
- Assistance to [STATE / ANSP] with development of a CPDLC/ADS-C Operational concept and an action plan for effective CPDLC/ ADS-C implementation

2. ***Composition of the CPDLC/ ADS-C Project Go-Team for [STATE / ANSP]***

- The *Go-Team* will be led by an ICAO NACC Regional Officer
- The *Go-Team* will be composed of subject matter experts from Project Member States selected by the ICAO NACC Regional Office
- The *Go-Team* mission cost will be covered by the Regional Project
- Other Project Member States could send additional specialists as observers, as long as all travel and daily subsistence allowance (DSA) costs are covered by such State, and upon Trinidad and Tobago's approval
- The selected *Go-Team* experts shall comply with the required background for the mission
- Specialists shall agree and sign a confidentiality agreement regarding the information observed and discussed during and after the *Go-Team* mission
- The mission duration will be three days, as determined by the ICAO NACC Regional Office

3. ***State Responsibilities***

- The State shall designate a point-of-contact for *Go-Team* coordination, as well as personnel in charge of CPDLC/ ADS-C implementation
- Provide the required information for the gap analysis development
- Facilitate access and necessary resources for the achievement of the *Go-Team* mission objectives
- Develop and comply with the Action Plan in accordance with the CPDLC/ ADS-C implementation *Go-Team* recommendations

4. ***General Work Programme***

On-site Activities:

- Initial meeting to present *Go-Team* mission objectives to [STATE / ANSP]
- Assessment of information for CPDLC/ ADS-C implementation in [STATE / ANSP], as appropriate
- Conduct other related activities for CPDLC/ ADS-C implementation in [STATE / ANSP]
- Debriefing meeting to inform the [STATE / ANSP] on the *Go-Team* mission outcomes

Follow-Up:

- The ICAO NACC Regional Office will CPDLC/ ADS-C implementation in [STATE / ANSP] through the regional implementation groups (ANI/WG, NACC/WG, etc.) as per the approved Action Plan

5. *Deliverables*

- Action Plan for CPDLC/ ADS-C implementation prepared by [STATE / ANSP] with *Go-Team* assistance
- Mission report on CPDLC/ ADS-C implementation in [STATE / ANSP] prepared by the *Go-Team*

6. *Proposed Go-Team Membership*

CPDLC/ ADS-C Implementation <i>Go- Team</i> Members	State / Territory / International Organization	Position	E-mail Address
TBD	ICAO		
TBD	Canada/ Nav Canada		
TBD	United States/ FAA		

— END —