



International Civil Aviation Organization

**FOURTEENTH MEETING OF THE  
COMMUNICATIONS/NAVIGATION/SURVEILLANCE  
AND METEOROLOGY SUB-GROUP OF  
APANPIRG (CNS/MET SG/14)**



Jakarta, Indonesia, 19 – 22 July 2010

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**Agenda Item 4:      Aeronautical Mobile Service (AMS):**

**GLOBAL OPERATIONAL DATA LINK DOCUMENT (GOLD)**

(Presented by the United States of America)

**SUMMARY**

This paper provides information on the Global Operational Data Link Document (GOLD) and invites ATM/AIS/SAR/SG/20 to begin planning for its use and participate in the development and coordination of any future amendments to the GOLD.

This paper relates to:

**Strategic Objectives:**

- A. Safety – Enhance global civil aviation safety
- C. Environmental Protection – Minimize the adverse effect of global civil aviation on the environment
- D. Efficiency – Enhance the efficiency of aviation operations
- E. Continuity – Maintain the continuity of aviation operations

**Global plan initiatives:**

- GPI-1 Flexible use of airspace
- GPI-5 RNAV and RNP (Performance-based navigation)
- GPI-6 Air traffic flow management
- GPI-9 Situational awareness
- GPI-11 RNP and RNAV SIDs and STARs
- GPI-17 Data link applications
- GPI-19 Meteorological systems

**1.                    Introduction**

1.1                    In June and September 2008, respectively, the North Atlantic Systems Planning Group (NAT SPG/44) and Asia-Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/19) endorsed a work program for an ad hoc working group to develop a global operational data link document (GOLD).

1.2                    The purpose of the GOLD is to facilitate global harmonization of existing data link operations and resolve regional and/or State differences impacting seamless operations. It includes

required communication performance (RCP) and surveillance specifications, based on RTCA DO-306/EUROCAE ED-122, and guidelines on post-implementation monitoring and corrective action to address issues with satellite data communication services that were discussed during the special NAT SPG meeting in November 2007.

1.3 The GOLD is intended primarily for those who are involved in planning and implementation of data link services, and day-to-day operations, and will be key to harmonizing oceanic and continental (domestic) data link operations worldwide.

1.4 The GOLD has effectively replaced the *Guidance Material for ATS Data Link Services in North Atlantic Airspace* (NAT Data Link GM) and the *FANS-1/A Operations Manual* (FOM) for Asia/Pacific (APAC), South American (SAM) and African/Indian Ocean (AFI) Regions. The GOLD also includes provisions for the aeronautical telecommunication network (ATN) implementation in the European Region.

1.5 In September 2009, the APANPIRG/20 concluded that, upon release of the Global Operational Data Link Document (GOLD) by the Ad-Hoc GOLD Working Group in 2010, the FANS-1/A Operations Manual (FOM) be withdrawn and replaced by the GOLD as Asia/Pacific regional guidance material.

1.6 The GOLD Ad Hoc Working Group issued the GOLD, Edition 1.0, on 14 June 2010.

*Note.* — Refer to Attachment A for APANPIRG and NAT SPG Conclusions related to endorsing the GOLD work program and adopting the GOLD.

## **2. Discussion**

2.1 The GOLD development has been well represented by: a) ICAO Headquarters and regional offices: Montreal, Bangkok, Paris, and Lima; b) Air traffic service providers (ATSPs) in NAT, APAC, SAM, AFI and European (EUR) Regions; c) Ground system developers and manufacturers; d) International organizations, such as the International Federation of Airline Pilot's Associations (IFALPA), International Air Transport Association (IATA), and International Business Aviation Council (IBAC); e) Aircraft operators, airframe manufacturers, and avionics suppliers; f) Communication service providers (CSPs) and satellite companies; and g) Other interested parties.

2.2 Recently, the Ad-Hoc GOLD Working Group has completed the First Edition, which was published on 14 June 2010. The Regional Office issued a State letter Ref. T 3/10.0 – AP108/10 (ATM) on 28 June 2010 to notify States and international organizations of the publication.

2.3 The First Edition of GOLD is available for download on the following public websites:

a) FAA: [http://www.faa.gov/about/office\\_org/headquarters\\_offices/ato/service\\_units/en\\_route/oceanic/data\\_link/](http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/en_route/oceanic/data_link/);

b) Airways New Zealand: <http://www.ispacg-cra.com>; and

c) ICAO Asia and Pacific Office: <http://www.bangkok.icao.int/edocs/index.html>.

### ***GOLD contents***

2.4 Table 2-1 provides an overview of the contents of the GOLD and indicates intended uses.

**Table 2-1. GOLD contents**

<b>Material Type</b>	<b>Reference</b>	<b>Description</b>	<b>Intended uses, remarks</b>
<b>Introductory material</b>	Foreword	Purpose, scope, etc.	For all users of the document. Descriptive.
	Chapter 1	Definitions	For all users of the document. Descriptive.
	Chapter 2	Overview of data link operations	For ATSPs and operators to develop training material for personnel, as appropriate, on the fundamentals of data link operations. Descriptive.
<b>Guidelines</b>	Chapter 3	Administrative provisions related to data link operations	For ATSPs and airspace planners to plan for and implement data link services, including ATC automation, and interfacility agreements. For ATSPs and operators to negotiate contractual arrangements with CSPs. For operators to plan for and use the data link system.
	Chapter 4	Controller and radio operator procedures	For ATSPs and CSPs to develop procedures and training material for controllers and other personnel at ATSU's and radio facilities.
	Chapter 5	Flight crew procedures	For operators to develop procedures and training material for the flight crew and dispatchers.
	Chapter 6	Advanced data link operations	For ATSPs and operators to develop procedures and training material for personnel, as appropriate, related to advanced data link operations, such as dynamic airborne reroute procedures (DARP) and tailored arrival (TA).
	Chapter 7	State aircraft data link operations	For ATSPs and State (military) operators to develop procedures and training material for personnel, as appropriate, related to conducting military operations, such as military assumes responsibility for the separation of aircraft (MARSAs) and air-to-air refueling (AAR).
<b>Appendices (Supporting and Additional Guidelines)</b>	Appendix A	CPDLC message elements and standardized free text messages	For all users. Based on Doc 4444, and includes FANS 1/A and ATN B1 messages.
	Appendix B	RCP specifications	For technical operations specialists, applies to CPDLC, particularly in reduced separation environments.
	Appendix C	Surveillance performance specifications	For technical operations specialists, applies to ADS-C and FMC WPR, particularly in reduced separation environments.
	Appendix D	Post-implementation monitoring and corrective action	For post-implementation monitoring of the performance of the data link system, analysis, investigations, and corrective action at the the State/ATSP, regional, and global levels.
	Appendix E	Regional/State-specific information	Includes differences in data link operations at the State/ATSP and regional levels.
	Appendix F	Operator/aircraft specific information	Includes differences in aircraft data link system capability and performance.

*Change process for the GOLD*

2.5 The FOREWORD of the GOLD provides a change process described as follows:

**8. Changes to the document**

This document is maintained as a regional document in coordination with all ICAO planning and implementation regional groups (PIRGs) providing data link services within their region. Each participating PIRG establishes a mechanism for submitting and administering change proposals. Change proposals (CPs) can be submitted by any stakeholder participating in data link operations. The stakeholder should submit a Change Proposal to their ICAO regional office (see Appendix E). The ICAO regional office will coordinate the change proposal within its own region, other regions, and ICAO HQ, to determine the acceptability of the change proposal. Once the ICAO regional office has completed coordination and the participating PIRGs accept the change proposal, the change is concluded by each of the PIRGs.

2.6 Change proposals (CPs) will be submitted to any ICAO regional office. The ICAO regional office will coordinate with other participating regions. Participating Regions will need to accept the change proposal before the GOLD can be amended by any region.

2.7 GOLD, Appendices E and F, contain factual information that is specific to the regions/States and operators/aircraft and hence they would not be required to follow the same change process as other parts of the GOLD. Therefore, Appendices E & F are not subject to the GOLD amendment process described above, and will be maintained by the GOLD Ad Hoc Working Group on an as needed basis.

2.8 For the remainder of the GOLD, a global configuration management process will need to be put in place by ICAO whereby the document would be maintained in coordination between the concerned PIRGs and the ICAO Secretariat. In the initial period, the GOLD Ad-Hoc Working Group will assist the Secretariat in the global coordination of future amendments to the GOLD. Refer to draft NAT SPG/46 Conclusion at **Attachment A**.

3. **Action required by the Meeting**

3.1 The meeting is invited to:

- a) Note the information in this paper;
- b) begin planning and implementation using the GOLD; and
- c) participate in the development and coordination of any future amendment to the GOLD.

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**ATTACHMENT A**

**Attachment A – Conclusions of PIRG Meetings Related to GOLD**

**APANPIRG**

*APANPIRG/19*

**APANPIRG Conclusion 19/9 – Support for Ad-Hoc GOLD Working Group**

*That, recognizing the many benefits to be gained from the global application of harmonized FANS data link operational procedures, APANPIRG supports the work being undertaken under the auspices of the Ad-Hoc GOLD Working Group to produce a FANS Global Operational Data Link document (GOLD) and invites the Asia/Pacific Regional Office to act as the regional focal point for the Ad-Hoc GOLD Working Group.*

*APANPIRG/20*

**APANPIRG Conclusion 20/33 – Coordinate Implementation of Reduced Horizontal Separations with CSPs**

*That, recognizing the technical limitations in satellite data link communications capability for the provision of ADS-C and CPDLC, States intending to implement reduced horizontal separations based on RNAV 10 and RNP 4 PBN specifications in oceanic and remote area commence early coordination with Communication Service Providers (CSPs) in order to ascertain adequate data link communication/surveillance capability to support the proposed implementation. Outcomes should be recorded in a formal Service Level Agreement (SLA) between implementing States and CSPs, jointly or severally, to ensure that capabilities are available to properly support RCP 240/D specifications contained in Appendices B and C to the GOLD on an ongoing basis.*

**APANPIRG Conclusion 20/74 – Adopt GOLD to replace FOM**

*That, upon release of the Global Operational Data Link Document (GOLD) by the Ad-Hoc GOLD Working Group in first quarter 2010, the FANS-1/A Operations Manual (FOM) be withdrawn and replaced by the GOLD as Asia/Pacific regional guidance material for use by States and airspace users as the basis for operating Automatic Dependent Surveillance – Contract (ADS-C) and Controller Pilot Data Link Communications (CPDLC), in conjunction with Annex 10 – Aeronautical Telecommunications Volume II – Communications Procedures including those with PANS status and the Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM Doc 4444).*

**NAT SPG**

*NAT SPG/44*

**NAT SPG Conclusion 44/9 – Development and publication of common performance based data link guidance material**

That the NAT Implementation Management Group:

- a) coordinate the NAT Region inputs to the common performance based data link guidance material;

- b) oversee the maintenance of the NAT Region related data common performance based data link guidance;
- c) coordinate the overall maintenance of the guidance material on behalf of the NAT Region;
- d) complete the initial draft by 31 December 2008, and
- e) Report to NAT SPG/45.

*NAT SPG/45*

**NAT SPG Conclusion 45/19 – Global Operational Data Link Document**

That the NAT Implementation Management Group (NAT IMG):

- a) review the final version of the Global Operational Data Link Document (GOLD) with the aim to replace the Guidance Material for ATS Data Link Services in North Atlantic Airspace; and
- b) provide a report to NAT SPG/46.

*NAT SPG/46 (22-25 June 2010 in Paris)*

**Draft NAT SPG Conclusion 46/wp06/1 - Adoption of the GOLD**

That, the Global Operational Data Link Document (GOLD), Edition 1.0, as provided at Appendix A, replace the Guidance Material for ATS Data Link Services in North Atlantic Airspace as regional guidance material for use by States and airspace users as the basis for operating Automatic Dependent Surveillance - Contract (ADS-C) and Controller Pilot Data Link Communications (CPDLC).

**Draft NAT SPG Conclusion 46/wp06/2 - Global configuration management process for the GOLD**

That:

- a) ICAO implement a global configuration management process whereby the document would be maintained in coordination between the concerned PIRGs and the ICAO Secretariat;
- b) During the initial period, the GOLD Ad-Hoc Working Group will assist the Secretariat in the global coordination of future amendments to the GOLD; and
- c) NAT IMG submits a report to NAT SPG/47.