



ICAO

Doc 10037

Global Operational Data Link (GOLD) Manual

First Edition, 2017

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FOREWORD

HISTORICAL BACKGROUND

The *Global Operational Data Link (GOLD) Manual* (Doc 10037) is the result of the progressive evolution of the Asia-Pacific (APAC) *Initial Future Air Navigation System (FANS 1/A) Operations Manual*, the North Atlantic (NAT) *Guidance Material for ATS Data Link Services in North Atlantic Airspace* and the European (EUR) *LINK2000+ Guidance Material for the aeronautical telecommunication network baseline 1 (ATN B1)*. These documents provided guidance on ATS data link services, namely data link initiation capability (DLIC), automatic dependent surveillance – contract (ADS-C) and controller-pilot data link communications (CPDLC).

Each of these founding documents provided guidance on a regional basis. However, in recognition of the need to provide globally harmonized guidance on data link operations, the *Global Operational Data Link Document (GOLD)*, First Edition, which merged the APAC and NAT guidance material, was adopted by the APAC and NAT Regions in 2010. The Second Edition of the GOLD, which incorporated the LINK2000+ guidance material, was published on 26 April 2013 and adopted that same year by all ICAO regions providing ADS-C and CPDLC services. The GOLD represented a very significant step towards the global harmonization of ADS-C and CPDLC implementation.

At the first working group meeting of the Operational Data Link Panel (OPLINKP-WG/1, March 2013, Montréal), the OPLINKP-WG reviewed the implementation and amendment programme of the GOLD. The working group recognized the value of the GOLD to serve as a basis for global harmonization of DLIC, ADS-C and CPDLC operations and agreed to elevate it to an ICAO manual. At the sixth meeting of the OPLINKP Working Group of the Whole (OPLINKP-WG/WHL/6, October 2013, Montréal), the working group further agreed that the first edition of the *Global Operational Data Link (GOLD) Manual* (Doc 10037) would be based on the second edition of the GOLD that was developed by the regions.

The *Global Operational Data Link (GOLD) Manual* (Doc 10037) addresses ATS data link service provision, operator readiness, controller and flight crew procedures. This manual supersedes the *Manual of Air Traffic Services Data Link Applications* (Doc 9694), Parts II (DLIC), III (ADS-C) and IV (CPDLC).

SCOPE AND PURPOSE

This manual provides guidance and information concerning data link operations and is intended to facilitate the uniform application of Standards and Recommended Practices (SARPs) contained in Annex 2 — *Rules of the Air*, Annex 10 — *Aeronautical Telecommunications* and Annex 11 — *Air Traffic Services*, the provisions in the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM) (Doc 4444) and, when applicable, the *Regional Supplementary Procedures* (Doc 7030).

This guidance material is intended to improve safety and maximize operational benefits by promoting seamless and interoperable data link operations throughout the world. This edition applies to DLIC, ADS-C, and CPDLC using FANS 1/A and ATN B1 technologies. Additional guidance is provided that applies to CPDLC for automatic dependent surveillance – broadcast (ADS-B) in-trail procedure (ITP).

The GOLD Manual is structured as follows:

- a) Chapter 1 provides an overview of data link (i.e. CPDLC and ADS-C) operations, including operational capabilities, systems and services;
- b) Chapter 2 provides administrative provisions related to data link, including service provision, operator considerations for usage and flight planning;
- c) Chapter 3 provides controller and radio operator procedures for CPDLC and ADS-C;
- d) Chapter 4 provides flight crew procedures for CPDLC and ADS-C;
- e) Chapter 5 provides information on advanced air traffic services (ATS) supported by data link, including re-route procedures, tailored arrivals (TAs) and the ITP; and
- f) Chapter 6 provides State aircraft data link operations.

The following personnel and organizations should be familiar with relevant aspects of its contents: regulators, airspace planners, aircraft operators, flight operations officers/flight dispatchers, air navigation services providers (ANSPs), aeronautical stations, communication service providers (CSPs), satellite service providers (SSPs) and radio operators, training organizations, regional/State monitoring agencies, automation specialists at air traffic services and radio facilities, and aircraft manufacturers and equipment suppliers.

The guidance will support the following activities:

- a) the States' roles and responsibilities in relation to the following:
 - 1) safety oversight of air navigation services;
 - 2) operational approval, flight crew training and qualification; and
 - 3) design approval of aircraft data link systems.
- b) the development of agreements and/or contractual arrangements between ANSPs and aircraft operators and their respective communication service providers;
- c) the development of operational procedures; and
- d) operational monitoring, analysis and exchange of operational data among regions, States and communication service providers.

FUTURE DEVELOPMENTS

In order to keep this manual relevant and accurate, suggestions for improving it in terms of format, content or presentation are welcome. Any such recommendation or suggestion will be examined and, if found suitable, will be included in regular updates to the manual. Regular revision will ensure that the manual remains both pertinent and accurate. Comments on this manual should be addressed to:

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