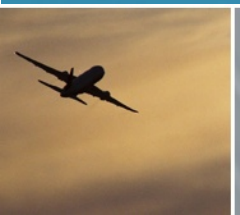
GOLD – Chapter 4
Controller Procedures

(ICAO Seminar/workshop on the implementation of Ground Ground and Ground Air data link in the SAM Region)

Lima, Peru 10 -12 September 2012



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GOLD – Global Operational Data-link Manual

• GOLD is a significant step towards <u>global standard procedures</u>:

- **GOLD - "is intended to maximize operational benefits in data link operations by promoting seamless and interoperable data link operations throughout the world."**

• GOLD is formatted such that it has specific sections for the different operational users:

- **Chapter 4 provides guidance on Controller and Radio Operator procedures.**

GOLD – towards "seamless and interoperable" global procedures

- **The procedures and guidance material for data link operations captured in the GOLD have been developed over years of operational experience.**
- **Many aircraft operate globally. We need to strive for seamless and interoperable procedures to:**
  - **Maximise Safety.**
  - **Keep training costs down.**
- **There will not be time to cover all of the procedures detailed in GOLD in this briefing.**

GOLD Chapter 5

- **This chapter provides guidance on procedures and recommended practices for the controller and the radio operator in airspace where data link services are available.**

- **This information is intended to assist in the development of:**
  - **Local procedures and associated documentation; and**
  - **Appropriate training programs.**

Gold Chapter 4

- **Controllers should be knowledgeable in the ATC automation. Refer to paragraph 3.1.2 for guidelines for implementation of ground systems supporting data link operations.**

- **Controllers should be knowledgeable in data link operations. Refer to Chapter 2. for an overview of data link operations.**

- **Radio operator procedures specific to data link operations can be found in paragraphs 4.8 and 4.8.3.**

GOLD Chapter 4.1

- CPDLC Connection Management
  - 4.1.1 General
  - 4.1.2 Establish CPDLC
  - 4.1.4 Transfer voice with CPDLC transfer
  - 4.1.5 Termination of CPDLC
  - 4.1.6 CPDLC – short sector transits

GOLD Chapter 4.2

- Uplink Messages
  - 4.2.1 General
  - 4.2.2 Use of Freetext
  - 4.2.3 Vertical Clearances
  - 4.2.4 Report/Confirmation Requests
  - 4.2.5 Multi-elementt Uplinks
  - 4.2.6 Weather Deviations
  - 4.2.7 Latency Timer

Standard Message Elements and Freetext

- **GOLD 4.2.1.3:** The controller should only use standard message elements when composing clearances or instructions. However, circumstances may exist where the controller may use free text to supplement the standard message elements.

- **GOLD 4.2.2.2:** The controller should only use a free text message when an appropriate standard message element does not exist and the intended use does not change the volume of protected airspace.

- Refer **Appendix A Para A.4** for standardised free texts

Conditional Clearances

- **GOLD 4.2.3.1:**
  - **The controller should precede conditional vertical clearances containing the word "AT" with UM 19 MAINTAIN [level] indicating to the flight crew to maintain their present level/altitude until the condition of the clearance is satisfied:**

Controller	UM 19 MAINTAIN [level] UM 21 AT [time] CLIMB TO AND MAINTAIN [level]
Controller	UM 19 MAINTAIN [level] UM 22 AT [position] CLIMB TO AND MAINTAIN [level]
Controller	UM 19 MAINTAIN [level] UM 24 AT [time] DESCEND TO AND MAINTAIN [level]
Controller	UM 19 MAINTAIN [level] UM 25 AT [position] DESCEND TO AND MAINTAIN [level]

Maintaining Level

- **GOLD 4.2.3.3: If a CPDLC level report is needed, the controller should append UM 129 REPORT MAINTAINING [level] or *REPORT LEVEL [altitude]* to the vertical clearance message element that is used to assign a single level/altitude.**

Weather Deviations (FANS1/A only)

- **GOLD 4.2.6.2: Append Weather Deviation Clearances with a report back on route.**
  - **This will arm the FMS to send a back on route when the deviation is completed.**

- *Note — When the controller issues a clearance direct to a waypoint when an aircraft is on a weather deviation, the controller will need to determine where the aircraft is or else continue to protect the airspace affected by the previous weather deviation until the aircraft sequences the waypoint to which the flight crew was cleared. May also see a "back on route"*

GOLD Chapter 4.3

- CPDLC Downlinks
  - 4.3.1 General
  - 4.3.2 Clarifying intent of a downlink
  - 4.3.3 Responses/Acknowledgements
  - 4.3.4 Responding to multi-element requests
  - 4.3.5 Offering alternative clearances

GOLD Chapter 4.4

- ADS-C (Not supported ATN B1)
  - 4.4.1 General
  - 4.4.2 ADS-C Connection Management
  - 4.4.3 ADS contract – periodic
  - 4.4.4 ADS contract – waypoint event
  - 4.4.5 ADS Contract – Vertical Rate and Lateral Deviation

GOLD Chapter 4.5

- Separation
  - 4.5.1 General ADS-C
  - 4.5.2 Vertical Separation ADS-C
  - 4.5.3 Lateral Separation ADS-C
  - 4.5.4 Longitudinal Separation ADS-C
  - 4.5.5 Using FMC WPR for position reporting
  - 4.6 Alerting Service

GOLD Chapter 4.6, 4.7, 4.8

- Alerting Service
- Emergency Procedures
  - 4.7.1 General
  - 4.7.2 CPDLC and ADS-C Emergency
  - 4.7.3 ADS-C emergency without CPDLC emergency
- Non-routine procedures
  - 4.8.1 General
  - 4.8.2 Voice communications relating to datalink
  - 4.8.3 Datalink service failures
  - 4.8.4 CPDLC relay

ADS-C Procedures

- **ADS-C Emergency Messages**
  - **Aircrews can accidently activate ADS-C emergency messages.**
  - **UM 169 CONFIRM ADS-C EMERGENCY**
- **If the aircrew responds DM 3 ROGER DM67 ADS-C RESET, most systems will continue the flash emergency until a normal ADS-C message is received.**
- **The ADS-C demand report is very helpful in this case.**

Thank you

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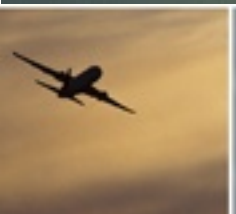

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