

# GOLD

## Implementation and Amendment Program

Presented to: ISPACG/27 FIT/20  
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Federal Aviation  
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GOLD

# GOLD introduction

- **In June 2010, the North Atlantic (NAT) and Asia-Pacific (APAC) Regions endorsed the use of the Global Operational Data Link Document (GOLD), First Edition**
- **The GOLD now supersedes both the**
  - NAT Data Link Guidance Material and
  - FANS 1/A Operations Manual (FOM)



# GOLD contents

Information	<b>Background</b>	<b>Foreword</b>
	<b>Definitions of terms / acronyms</b>	<b>Chapter 1</b>
	<b>Data link general familiarization</b>	<b>Chapter 2</b>
Guidelines	<b>Data link service provision</b>	<b>Section 3.1</b>
	<b>Operator – aircraft preparation</b>	<b>Section 3.2</b>
	<b>Controller – flight crew procedures</b>	<b>Chapters 4-7</b>
Supporting Guidelines	<b>CPDLC message sets / standardized free text</b>	<b>Appendix A</b>
	<b>RCP – RSP specifications</b>	<b>Appendices B and C</b>
	<b>Post-implementation monitoring</b>	<b>Appendix D</b>
	<b>Region/State &amp; aircraft specifics</b>	<b>Appendices E and F</b>



# GOLD availability

- **GOLD, 1<sup>st</sup> Edition, is available without need for user ID or password and free of charge on the following web sites:**
  - <http://www.ispacg-cra.com>
  - [http://www.faa.gov/about/office\\_org/headquarters\\_offices/ato/service\\_units/enroute/oceanic/data\\_link/](http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/enroute/oceanic/data_link/)
- **GOLD, v1.5 FINAL DRAFT, is available now on**
  - ICAO Portal Website – GOLD Working Group – GOLD Folder
  - Contact ICAO APAC Regional Office



# GOLD application

- **GOLD is a very significant step towards the global harmonization of ADS-C and CPDLC procedures for pilots and air traffic controllers**
- **Amendment program will allow GOLD to be applicable to existing and new data link implementations throughout the world**
  - Nov 2010 – Program established to support EANPG
  - Apr 2013 – Issue GOLD, 2<sup>nd</sup> Edition



# EUR Region plans to endorse GOLD

- **Amendments are needed to support EUR Region, including implementing rule for data link services, referred to as Link 2000+**
  - Operational differences – airspace where ATS surveillance services are provided (domestic) versus airspace where procedural separations are applied (oceanic and remote)
  - Technical differences - ATN B1 versus FANS 1/A
- **Ensure amendments are globally acceptable**



# Participating ICAO Regions

- **Bangkok – Asia / Pacific (A-PAC) Regions**
- **Paris (EUR-NAT) – European / North Atlantic Regions**
- **Lima (SAM) – South American Region**
- **Dakar (AFI) – African – Indian Ocean Region**
- **Mexico (CAR) – Caribbean Region**
- **And also North American (NAM) Region**



# Other participation

- **ICAO Montreal - Headquarters (e.g. OPLINKP)**
- **IATA, IFALPA and operators / pilots**
- **CANSO, IFATCA, ANSPs and controllers**
- **IBAC, IGA and general aviation community**
- **ATS system suppliers**
- **Aircraft manufacturers and equipment suppliers**
- **CSPs and satellite service providers (SSPs)**
- **Others**





# GOLD Working Group

- 120+ GOLD website subscribers
- 56 different organizations from 27 different countries

AUSTRALIA	MALAYSIA	RUSSIAN FEDERATION
BELGIUM	MEXICO	SENEGAL
CANADA	NETHERLANDS	SINGAPORE
FRANCE	NEW ZEALAND	SPAIN
GERMANY	OMAN	THAILAND
ICELAND	PERU	TUNISIA
ITALY	PORTUGAL	UNITED ARAB EMIRATES
JAPAN	REPUBLIC OF KOREA	UNITED KINGDOM
LIBYA	ROMANIA	UNITED STATES



# Activity since GOLD 1st Edition

- **10-14 Oct 2011 – GOLD/4 in Paris, France – 27**
  - 21 Oct 2011 – GOLD v1.1 Working Draft
- **9 May 2012 – GOLD Web 4.1 - 17**
  - 14 May 2012 – GOLD v1.2 Working Draft
- **10-15 Jun 2012 – GOLD/5 in Miami - 28**
  - 30 Jun 2012 – GOLD v1.3 Working Draft
- **17 Oct 2012 – GOLD Web 5.1 - 23**
  - 4 Nov 2012 – GOLD v1.4 Working Draft
  - 18 Jan 2013 – GOLD v1.4.1 Working Draft
- **28 Jan to 4 Feb 2013 – GOLD/6 in Phoenix – 38**
  - 4 Feb 2013 – GOLD v1.4.4 Working Draft
  - 16 Feb 2013 – GOLD v1.5 Final Draft

# GOLD, 2<sup>nd</sup> Edition, trailer (1 of 2)

- **Applies to all airspace**
  - Where procedural separations are applied
  - Where ATS surveillance services are provided
- **Applies to FANS 1/A, ATN B1 and FANS 1/AATN B1 aircraft and ground systems**
  - Generalized Chapter 2 data link description
  - Common procedures (for most part) in Chapter 4-6
- **Addresses High Level Safety Conference (HLSC) recommendations**



# GOLD, 2<sup>nd</sup> Edition, trailer (2 of 2)

- **Added advanced air traffic services supported by data link**
  - CPDLC for ATC-initiated re-route procedure
  - CPDLC for ADS-B in trail procedure (ITP)
- **Clarified position reporting requirements in ADS-C environments, e.g. reporting revised time estimates**
- **Additional guidance on RCP – RSP and post-implementation monitoring**
- **Updated Appendix E, Region / State specifics, with new look, to include European Region**



# Change Proposal Scorecard

Legend:

- A Additional material
- C Confusing, clarification, erroneous information, inconsistency, or invalid argument
- E Editorial
- R Review
- S Serious – resolution of comment requires special attention
- T Total number of comments
- O Open comments remaining

GOLD Chapter	Total Comments	Total Closed	Total Open	A		C		E		R		S	
				T	O	T	O	T	O	T	O	T	O
General	17	16	1	2	0	5	1	5	0	5	0	0	0
Foreword	8	8	0	1	0	1	0	6	0	0	0	0	0
1	10	10	0	3	0	3	0	3	0	1	0	0	0
2	345	345	0	22	0	171	0	105	0	44	0	3	0
3	31	31	0	9	0	11	0	5	0	4	0	2	0
4	264	263	1	37	0	130	1	65	0	16	0	16	0
5	197	196	1	33	0	62	1	88	0	5	0	9	0
6	52	51	1	3	0	36	0	13	0	0	0	0	1
7	0	0	0	0	0	0	0	0	0	0	0	0	0
Apx A	15	14	1	6	0	5	0	1	1	1	0	2	0
Apx B	5	4	1	2	1	2	0	1	0	0	0	0	0
Apx C	1	1	0	0	0	1	0	0	0	0	0	0	0
Apx D	15	15	0	8	0	7	0	0	0	0	0	0	0
Apx E	37	37	0	20	0	8	0	5	0	0	0	4	0
Apx F	5	5	0	4	0	1	0	0	0	0	0	0	0
<b>Total</b>	<b>1002</b>	<b>996</b>	<b>6</b>	<b>150</b>	<b>1</b>	<b>443</b>	<b>3</b>	<b>297</b>	<b>1</b>	<b>76</b>	<b>0</b>	<b>36</b>	<b>1</b>



# What's left to do?

- **15 March 2013 – 30 day review and comment period on GOLD v1.5 ends**
- **15 March to 15 April 2013 – Resolve comments**
- **15 April 2013 – Issue GOLD, 2nd Edition**



# GOLD, 2nd Edition, endorsement

- **North Atlantic – NAT SPG – Jun 2013**
- **Asia – Pacific – APANPIRG – Jun 2013**
- **European – EANPG - Nov 2013**
  - Propose to supersede LINk2000+ guidance docs
- **South American – SAM/IG – Oct 2013**
- **African – Indian Ocean – APIRG – Mar 2014**



# Summary

- **GOLD continues to provide global basis for global harmonization of data link operations**
- **GOLD is proving to be a significant activity to converge data link implementations worldwide**
- **GOLD embraces performance based concept for communication and surveillance capabilities**
- **We all need to participate and contribute**









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