Agenda item 4: **System performance monitoring and maintenance.**
a. Interoperability requirements
b. Safety monitoring aspects and;
c. Problem identification, reporting and resolution procedures.

EUR-SAM Corridor ADS/CPDLC Procedures

(Presented by *International Air Transport Association*)

Summary

This working paper presents LATAM concerns about differences and variances within the EUR-SAM Corridor, regarding ADS/CPDLC procedures used both by Flight Crews and Air Traffic Controllers. These differences and variances over a fixed standard results in increased workload and a decreased confidence.

REFERENCES:	
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ICAO Strategic Objectives	*A - Safety.* *B – Air Navigation Capacity and Efficiency.*

1. Introduction

1.1 It is observed over time that ADS/CPDLC procedures within the EUR-SAM corridor are not used as per GOLD Manual recommendations. These differences (Not every ATSU using the same procedures) and variances (Differences within the same ATSU) result in an overall performance degradation of the system.

1.2 We can generally categorize most problems as being ATC induced and/or Crew induced. It is probable that a safety impact can be inferred, impacting all concerned when these problems occur.

2. ATC Related issues

2.1 **Massive use of FREE TEXT messages.** Used even when pre-formatted messages exists, introducing an error factor for possible grammatical-orthographical errors. These free text messages does not triggers interaction with the FMC, such as all the REPORT [event] preformatted messages, which auto-generates when the condition is met.

E.g.1 ROGER (see image n°1)

E.g.2 FL 390 CORRECT AND AVAILABLE, NO TRAFFIC TO REPORT (see image n°2)

E.g.3 CPDLC SUCCESSFUL SELCAL NOT REQUIRED WITH SOOO (see image n°3)

E.g.4 RADAR SERVICES TERMINATED (see image n°4)

2.2 **ETA to waypoints requested using FREE TEXT.** In this case, the controller can/must use ADS-C data.

E.g.3 CONFIRM EST ERNEK (see image n°5)

E.g.4 CONFIRM ETA AT MAVKO (see image n°6)

2.3 **Delay in responding CPDLC messages.** Operators have observed on several occasions, delays as it concerns receiving ATC clearances/response when a WEATHER DEVIATION is requested by the crew. It is noteworthy that at times, the flight crew will delay the decision whether to deviate RIGHT or LEFT, (depending on radar returns), resulting in having less time for flight crew reaction due to delayed ATC clearance or response, and the WEATHER DEVIATION procedure started without clearance.

2.4 **AFN (ATS Facility Notification).** AFN logon procedures at times should be started manually because NDA is not shown in the Communication manager. This problem increases crew and controller workload, and reduces integrity as the aircraft flies some periods of time without Datalink surveillance (ADS-C) and Communication (CPDLC). AFN and LOGON procedures turn variable and not standardized even with the same ATS Facility over time.

E.g.4 LOGON LPPO CONTACT SM HF 6628 OR 5598 (see image n°7)

3. Crew related issues

3.1 **Massive use of FREE TEXT messages.** The GOLD Manual recommendation is to avoid the use of FREE TEXT messages to the extent possible, especially when there is a "pre-formatted" message that serves the same purpose. Often, we see crews interacting with ATC using confusing FREE TEXT messages. Negotiations such as CLIMB are done with the use of free text, leading to confusions and/or non-compliance of instructions, which are time-constrained.

3.2 **Unnecessary use of FREE TEXT messages appended to requests messages.**

E.g.5 REQUEST DIRECT TO[waypoint] THANK YOU

E.g.6 REQUEST FL380 DUE TO AIRCRAFT PERFORMANCE (image n°8)

3.3 Use of **REQUEST CRUISE CLIMB TO [altitude].** This technique (Cruise Climb) is not operational in EUR-SAM Corridor and operators might confuse this with the fact that an aircraft is climbing in the cruise phase. In that case, a REQUEST CLIMB [altitude] must be used.

E.g.6 REQUEST CRUISE CLIMB TO FL380 DUE TO AIRCRAFT PERFORMANCE (see image n°9)

3.4 **Use of CPDLC simultaneously with voice communications.** Voice communications and CPDLC should not be used simultaneously, due to the potential conflicting clearances that may exist.

3.5 **Errors in reporting BACK ON ROUTE.** Whenever a BACK ON ROUTE message is sent, the crew must have sequenced the correct track in order to inform ATC that they are back on route. A DIRECT TO [waypoint] clearance can be requested, but then the BACK ON ROUTE should be sent just after passing the waypoint, not before.

4. Suggested action

4.1 The meeting is invited to:

a) Take note of the information contained in this working paper.

b) Identify and take appropriate actions to assure ATSU's and operators are encouraged to raise their knowledge level of the system, and ensure utilization of procedures to meet GOLD standards, emphasizing the following aspects;

- Reduce usage of free-text.
- Correct and proper use of pre-formatted messages.
- AFN and LOGON procedures.

c) Develop and publish a FANS1/A EUR-SAM chart, with all relevant procedures (AFN, CPDLC transfers, ADS-C detailed inform operators of what parameters are being extracted from their FMS systems, etc.)

Image n°1


FLT ▪ LAN704
MIC 121.500 VHF R
XPDR 3315
SELCAL DP-AQ
TAIL ▪ CC-BBI
UTC TIME
05:54:49z
DATE
20 MAY 16
ELAPSED TIME
07:18
ATC UPLINK
0555z
FROM GVSC
ROGER
CANCEL

Image n°2


FLT ▪ LAN705
MIC
XPDR 2000
SELCAL GL-FQ
TAIL ▪ CC-BBD
UTC TIME DATE ELAPSED TIME
04:34:49z 22 MAY 16 06:27
ATC UPLINK
0434z FROM SBAO
FL 380 CORRECT AND AVAILABLE,
MONITOR SBAO CENTER ON 6649KHZ,
SQUAWK 2747,
AT N0126.0W04141.0 CONTACT
SBAZ CENTER ON 133.700MHZ,
SECONDARY 128.3.
ACCEPT
REJECT

Image n°3

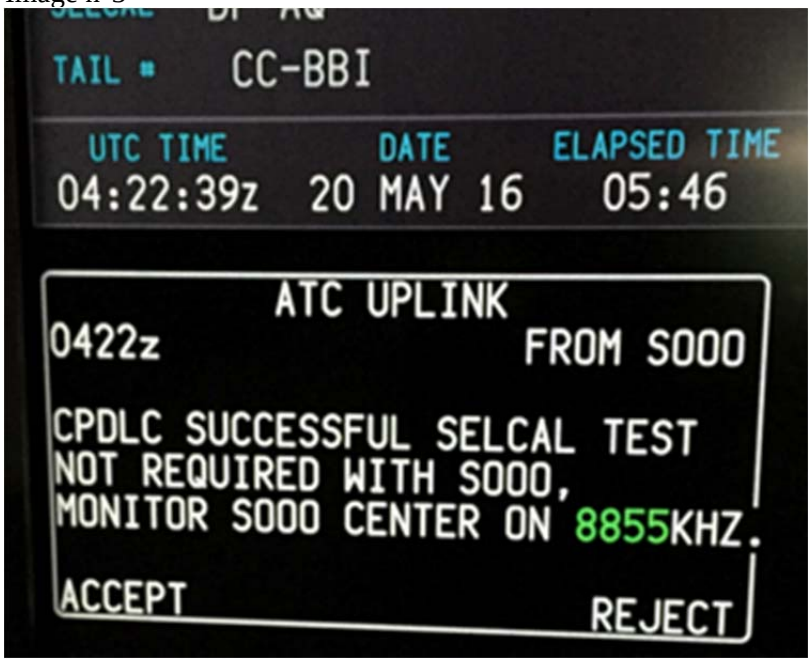


Image n°4

Image n°5

Image n°6

Image n°7

Image n°8

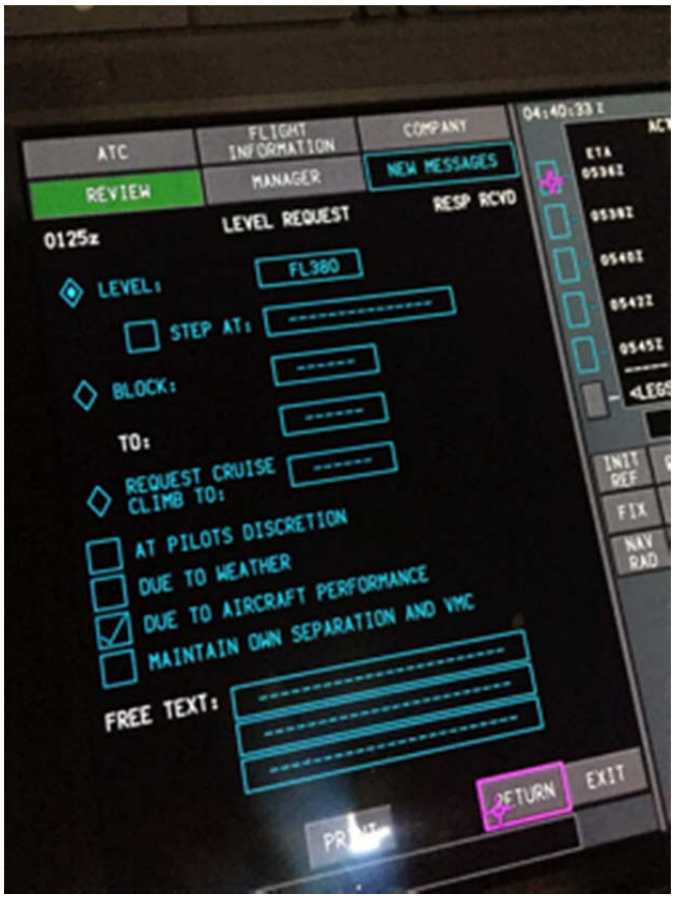
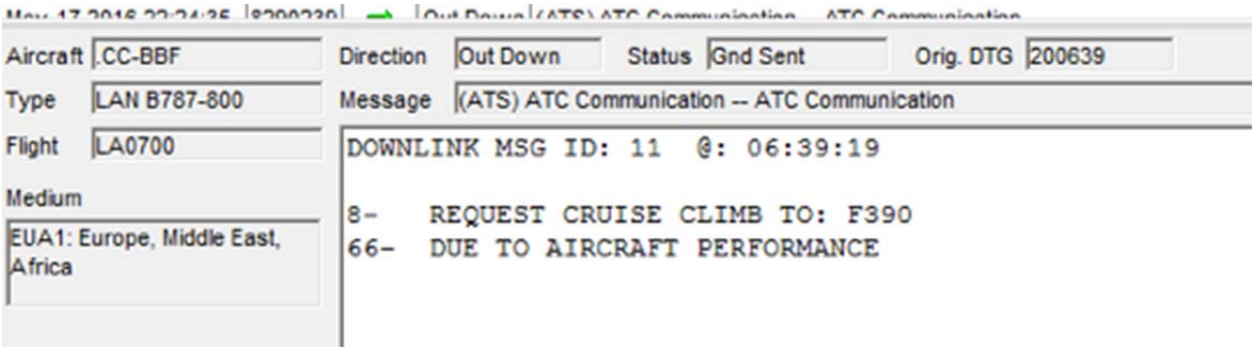


Image n°9


Aircraft CC-BBF
Direction Out Down
Status Gnd Sent
Orig. DTG 200639
Type LAN B787-800
Message (ATS) ATC Communication -- ATC Communication
Flight LA0700
Medium
EUA1: Europe, Middle East, Africa
DOWNLINK MSG ID: 11 @: 06:39:19
8- REQUEST CRUISE CLIMB TO: F390
66- DUE TO AIRCRAFT PERFORMANCE

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