NAT OPS BULLETIN

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Subject: **CPDLC Uplink Message Latency Monitor Function**	Effective: ~~24 May~~ 04 June 2018
Originator: **NAT SPG**	

The purpose of this North Atlantic Operations Bulletin (NAT OPS) Bulletin is to provide material that North Atlantic (NAT) Air Navigation Service Providers (ANSPs) should use as a basis for an Aeronautical Information Circular (AIC).

It is recommended, as may be appropriate, that the NAT ANSPs implement the message SET MAX UPLINK DELAY VALUE TO [seconds] SEC~~ONDS~~ on or after 24 May 2018 to give aircraft operators two AIRAC cycles to distribute guidance material to flight crews. Considering that the state of readiness for NAT ANSPs is not the same, it is acknowledged that the NAT ANSPs will not all implement on the same date.

Any queries about the content of the attached document should be addressed to:

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NAT OPERATIONS BULLETIN – CPDLC UPLINK MESSAGE LATENCY MONITOR FUNCTION

1. INTRODUCTION

1.1   A number of ICAO regions are in the process of implementing reduced lateral and longitudinal separation minima predicated on Performance Based Communication and Surveillance (PBCS) specifications RCP 240 and RSP 180. One of the safety requirements in RCP 240 that are allocated to the aircraft system is Safety Requirement #15 (SR-15):

When the aircraft system receives a message whose timestamp exceeds ET_{RCMP}, the aircraft system shall provide appropriate indication.

1.2   To support SR-15, ATC can uplink the CPDLC free text message SYSU-6 (UM169) SET MAX UPLINK DELAY VALUE TO [*delayed message parameter*] SEC~~ONDS~~ to prompt the pilot to enter the specified latency value into the aircraft avionics (refer to the Global Operational Data Link Manual (GOLD) ICAO Doc 10037 Appendix A table A.4.13).

1.3   This document provides guidance to Aircraft Operators and pilots on how to react when receiving the message SET MAX UPLINK DELAY VALUE TO [*delayed message parameter*] SEC~~ONDS~~ from Air Traffic Control (ATC).

2. DISCUSSION

2.1   The intention of the message latency monitor function is to prevent pilots from acting on a CPDLC uplink message that has been delayed in the network. The most serious of such cases would be the pilot executing a clearance that was no longer valid.

2.2   There are variations between aircraft types in implementation of the message latency monitor function:

   a)   The Airbus implementation and some General Aviation aircraft implementations function in such a way that the aircraft automatically rejects a delayed uplink message by sending an error message to ATC and does not show the message to the pilot. The message sent to ATC is normally this:

   ERROR INVALID DATA. UPLINK DELAYED IN NETWORK AND REJECTED RESEND OR CONTACT BY VOICE.

   b)   The Boeing implementation and some General Aviation aircraft implementations function in such a way that the delayed message is displayed to the pilot with an indication that the message has been delayed. It is then up to the pilot to act as appropriate, refer to section 3 below.

   c)   Some aircraft have a deficient implementation that has not been designed in accordance to industry standards.

   d)   Some CPDLC equipped aircraft do not have the message latency monitor function implemented at all.

2.3   Because aircraft implementations are varied, it is impossible for ATC to tailor the uplink of the message SET MAX UPLINK DELAY VALUE TO [*delayed message parameter*] SEC~~ONDS~~ to different aircraft types. It has therefore been decided among the NAT Air Navigation Service Providers (ANSPs) to uplink this message to all CPDLC connected aircraft immediately after they enter each control area. An aircraft may therefore receive this message multiple times during a flight.

2.4   This paragraph is reserved for inclusion in AICs for those ANSPs that choose to discontinue the greeting message and replace it with the latency monitor message. This paragraph will not be in the NAT OPS bulletin.

3.   PILOT PROCEDURES

3.1   Pilots shall be familiar with aircraft functionality that concerns the CPDLC uplink message latency monitor.

3.2   When the pilot receives the uplink CPDLC message SET MAX UPLINK DELAY VALUE TO [*delayed message parameter*] SEC~~ONDS~~ he/she shall:

    a)   Send a positive response to ATC as prompted by the avionics (ACCEPT [ROGER]) regardless of whether the aircraft supports the latency monitor.

Note 1: It is important that pilots respond to the SET MAX UPLINK DELAY VALUE TO [*delayed message parameter*] SEC~~ONDS~~ uplink message to avoid having open unanswered CPDLC messages in the system. This also applies to aircraft that have deficient message latency monitor functionality or no such functionality at all.

Note 2: The Global Operational Data Link Manual specifies that the pilot should append the response downlink with the free text message TIMER NOT AVAILABLE when the message latency monitor function is not available in the aircraft (refer to GOLD Table 4-1).

    b)   If the aircraft is equipped with a correctly functioning message latency monitor, enter the specified uplink delay into the avionics in accordance with the aircraft procedures. Some avionics will automatically set the delay value in accordance with the uplink message and do not allow for a manual input.

Note 3: If an aircraft is instructed to log off and then log on again mid-flight, ATC may send the message SET MAX UPLINK DELAY VALUE TO [*delayed message parameter*] SEC~~ONDS~~ again once the logon is completed.

3.3   When a pilot receives a CPDLC uplink message with an indication that the message has been delayed the pilot shall:

    a)   Revert to voice communications to notify the ATS unit of the delayed message received and to request clarification of the intent of the CPDLC message; and

    b)   Respond appropriately to close the message as per the instructions of the controller.

    c)   The pilot must not act on the delayed uplink message until clarification has been received from the controller.

4.   IMPLEMENTATION AND FURTHER INFORMATION

4.1   Implementation of the SET MAX UPLINK DELAY VALUE TO [*delayed message parameter*] SEC~~ONDS~~ message will start in the NAT region on or after 24 May 2018. It is expected that the NAT Air Navigation Service Providers will not implement at the same date. The implementation date for each ANSP will be promulgated in their local AIC.

4.2   For further information please contact TBD

- **END** –