



International Civil Aviation Organization

**The 2<sup>nd</sup> Meeting of the Future Air Navigation Systems Interoperability Team-Asia (FIT-Asia/2)**

Bangkok, Thailand, 28 – 29 March 2013

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**Agenda Item 4: Data Link Guidance Material**

**TRANSFERRING CPDLC CONNECTIONS**

(Presented by Airservices Australia)

**SUMMARY**

This paper provides information describing CPDLC transfers between ATS Units, and the procedures that controllers should follow in the event of a failure of a CPDLC transfer

This paper relates to –

**Strategic Objectives:**

A: *Safety – Enhance global civil aviation safety*

**Global Plan Initiatives:**

GPI-17 Data link applications

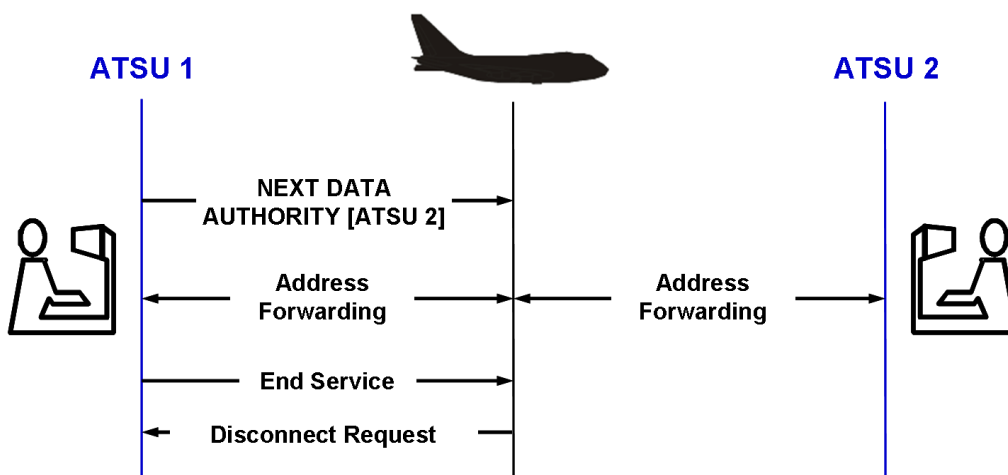
**1. INTRODUCTION**

1.1 FANS-1/A functionality supports the transfer of CPDLC connections between two ATS Units. This transfer is initiated by the ground systems, and allows a flight's CPDLC connection to be transferred from one ATS Unit to another with no (or minimal) flight crew involvement. This reduces the risk of data entry errors by the flight crew, as well as allowing the ATS Unit to control when, and to whom, the CPDLC transfer will occur.

## 2. DISCUSSION

2.1 There are three steps in the process to transfer a CPDLC connection for a FANS-1/A aircraft from one ATS Unit to another:

- i. The avionics must be notified of the identity of the next ATS Unit that is permitted to establish a CPDLC connection (Next Data Authority message)
- ii. The avionics must be instructed to logon to the next ATS Unit (Address forwarding)
- iii. The ATS Unit must terminate its CPDLC connect with the aircraft (End Service message)



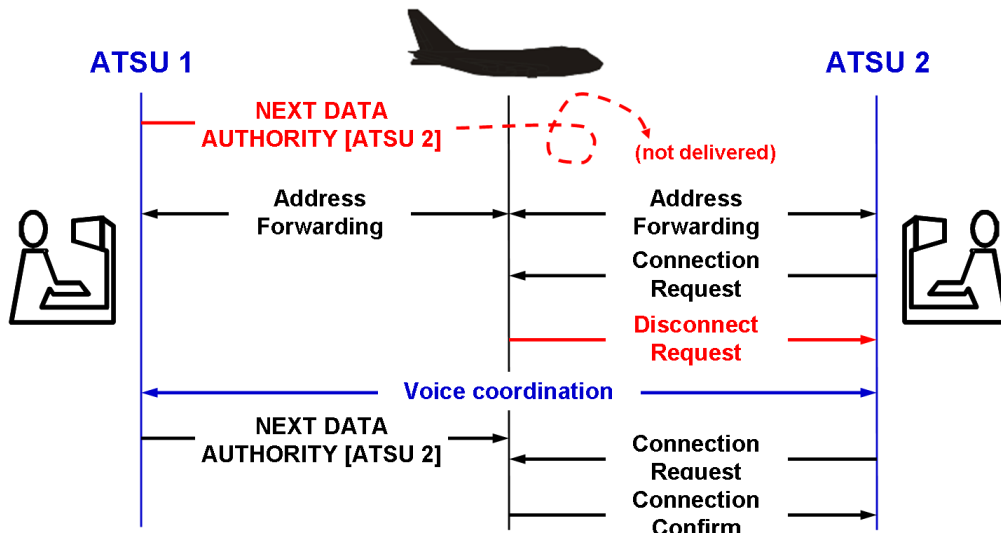
2.2 Possible errors that may occur during the CPDLC transfer process are:

1. If the Next Data Authority message is not sent (or not delivered to the aircraft), the next ATS Unit will be unable to establish an inactive CPDLC connection with the aircraft
2. If the Address forwarding is not initiated (or not completed successfully), the next ATS Unit will not receive a logon, and will therefore be unable to establish a CPDLC connection with the aircraft
3. If the End Service message is not sent (or not delivered to the aircraft), the next ATS Unit will be unable to exchange CPDLC messages with the aircraft.

2.3 In the event of the occurrence of any of the CPDLC transfer failures described above, the controller should take action to resolve the failure. The recommended controller procedures are described in the following paragraphs. The Global Operational data Link Document (GOLD) provides additional information.

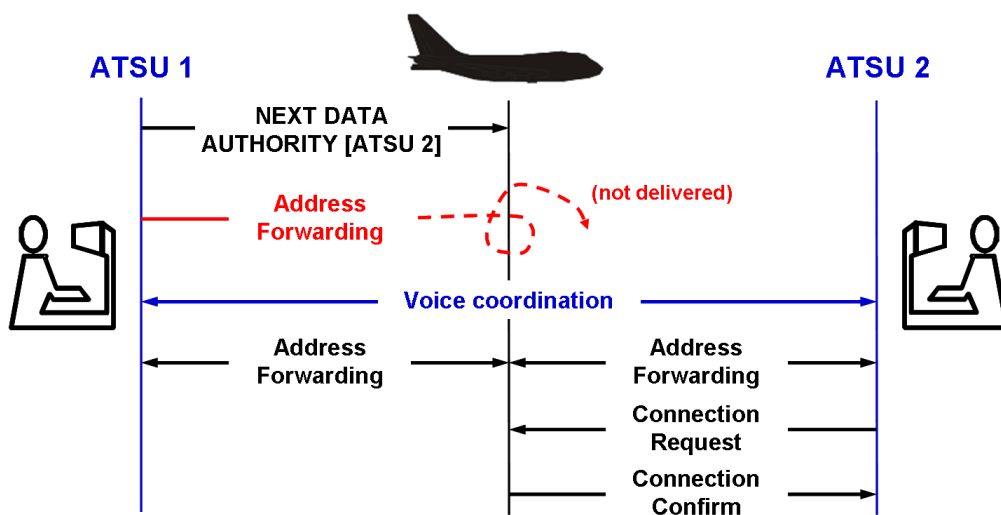
## 2.4 Failure of the Next Data Authority message

2.4.1 Under normal circumstances, the **transferring** ATS Unit will not be aware that the Next Data Authority message has not been delivered to the aircraft. However the **receiving** ATS Unit will be unable to establish a CPDLC connection with the aircraft. The receiving ATS Unit should contact the transferring ATS Unit and request that they re-send the Next Data Authority message.



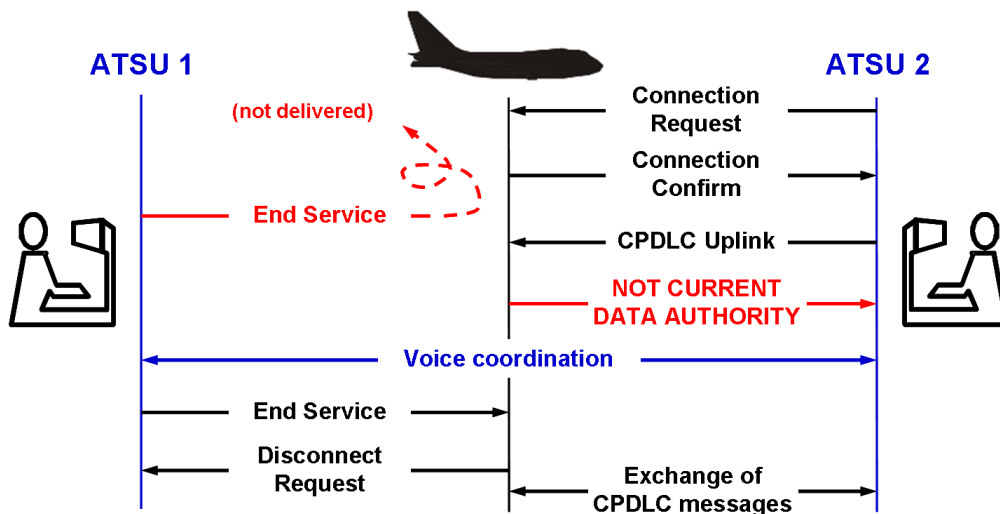
## 2.5 Failure of Address Forwarding

2.5.1 If the receiving ATS Unit becomes aware that they have not received a logon for a CPDLC-equipped aircraft inbound to their airspace, they should contact the transferring ATS Unit, and request that they re-Address Forward the aircraft. If the transferring ATS Unit is unable to re-address forward the aircraft, the flight crew should be instructed to manually logon to the next ATS Unit.



## 2.6 Failure of the End Service message

2.6.1 Under normal circumstances, the **transferring** ATS Unit will not be aware that the End Service message has not been delivered to the aircraft. However the **receiving** ATS Unit will be unable to exchange CPDLC messages with the aircraft. The receiving ATS Unit should contact the transferring ATS Unit and request that they re-send the End Service message.



2.7 To allow a seamless CPDLC transfer between two ATS Units to occur:

- The ground system functionality should support the above functionality;
- The CPDLC transfer functionality should be automated, and occur at off-line defined parameters prior to the FIR boundary, so there is minimal (or no) controller involvement;
- Flight crews need to be aware not to attempt to become involved in the CPDLC transfer process, unless it has obviously failed;
- Controllers need to be aware of the procedures involving manual intervention in the event of a failed CPDLC transfer.

## 3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- Note the recommended practice of implementing automated CPDLC transfers between appropriately equipped ATS Units;
- (For ATSUs), ensure that controllers are familiar with the recommended procedures in the event of a failure of a CPDLC transfer;
- (For operators), ensure that flight crews are aware that they should not become involved in the CPDLC transfer process unless the process has clearly failed; and
- Discuss any relevant matters as appropriate.