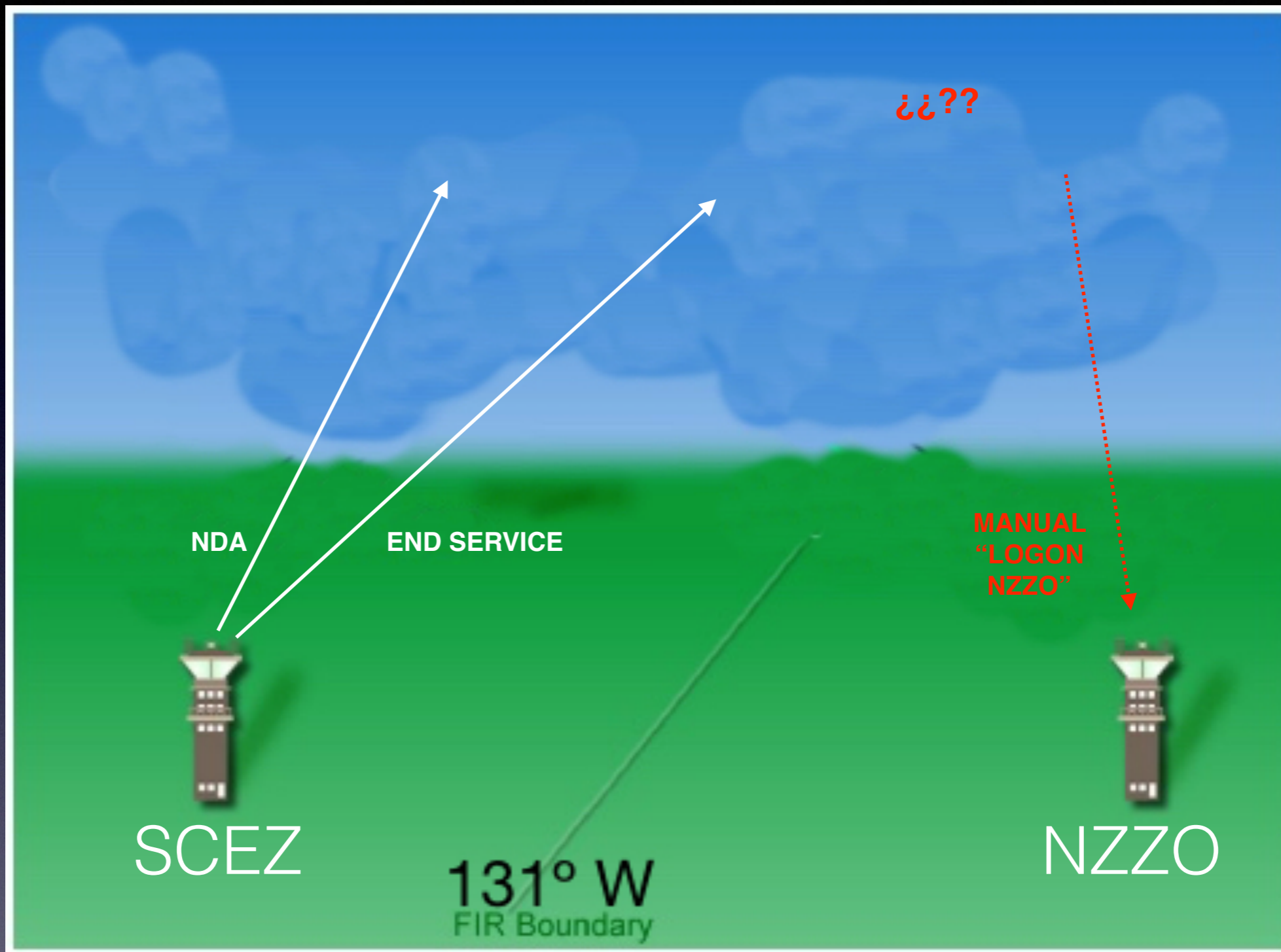**FANS Interoperability Team Meeting**
(FIT/27)

VIRTUAL
28 – 29 July 2020

Agenda Item Comments from ANSPs

Address Forwarding Data Link Connection (CPDLC)

Presented by DGAC Chile

UNTIL EARLY 2019, FLIGHTS EXITING FROM SCIZ FIR TO NZZO FIR WERE LOSING DATALINK DURING SWITCHING FROM CDA TO NDA. BECAUSE OF THAT, PILOTS WERE PERMANENTLY FORCED TO MANUALLY "LOGON" WITH AUCKLAND OAC AFTER SANTIAGO OAC HAD SENT / (RECEIVED) THE MESSAGE "REQUEST FOR TERMINATION / (CONFIRMATION OF TERMINATION)". SUCH A SITUATION WAS ABNORMAL.

As per document Global Operational Data Link (GOLD) Manual (Doc 10037)under normal circumstances, the CDA will initiate a CPDLC transfer to an adjacent ATS unit as the aircraft transits from the current ATS unit to another CPDLC-capable ATS unit. These transfers are normally automatic, without flight crew action

In FANS 1/A terminology, the logon is known as the Airways Facilities Notification (AFN) logon. The AFN is usually abbreviated to FN. The logon message is known as the AFN Contact message, or the FN_CON
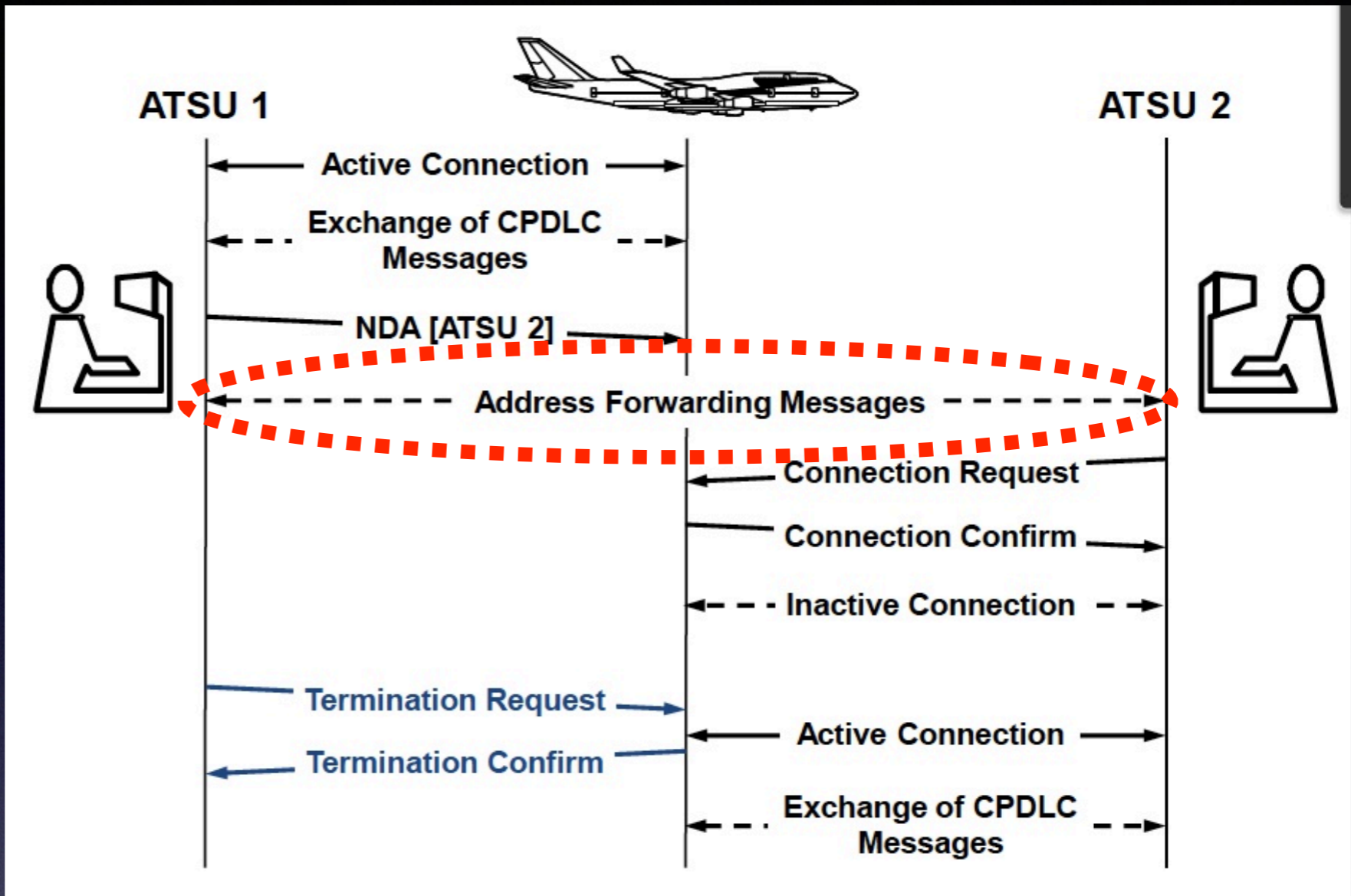

Figure 1-13.   Termination of active CPDLC connection

The majority of commercial ATS data link flights at present are FANS 1/A equipped, so we will refer to messages by using the FANS 1/A terminology as it is the flights type that operates in our air space.

The purpose of the Next Data Authority (NDA) message is to advise the avionics of the next ATS unit that will make a CPDLC connection. The sending of the NDA message is the first step in the CPDLC transfer sequence between an aircraft and two ATS units

Global Operational Data Link (GOLD) Manual (Doc 10037)

1.2.3.5.1.1   The CDA performs the following steps in the exact order listed to transfer a CPDLC connection to the next ATS unit:

a)   sends a NDA message to notify the aircraft of the identity of the next ATS unit permitted to establish a CPDLC connection;

b)   initiates address forwarding with the next ATS unit; and

c)   sends a CPDLC termination request message when the aircraft is in the vicinity of the boundary with the next ATS unit.

Address Forwarding is used to instruct the avionics to forward the aircraft's application addresses to a particular ATS unit. Address Forwarding consists of sending the aircraft an AFN contact advisory message (FN_CAD), which contains the address of the ATS unit. On receipt of this address, the avionics will automatically trigger an AFN logon with this unit

Global Operational Data Link (GOLD) Manual (Doc 10037)

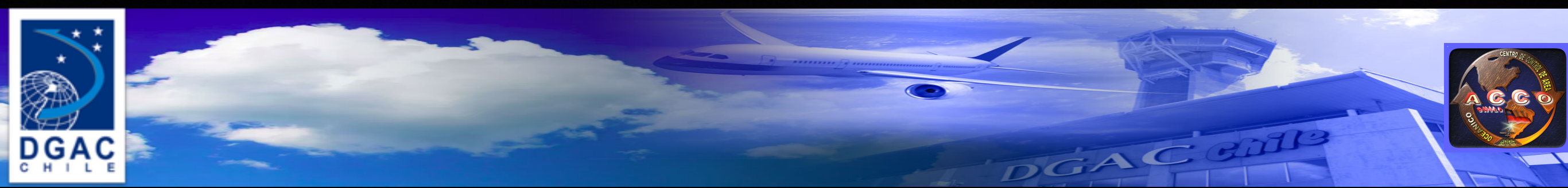| Generic message name	Purpose	FANS-1/A	ATN B1
Air-ground logon procedure			
Logon Request	To provide the ATSU with information to confirm the identity of the aircraft and its data link capabilities, and to notify the ATSU of the flight crew's intention to use data link services.	FN_CON	CM_LOGON_REQUEST
Logon Response	To notify the aircraft of the status of its logon request.	FN_AK	CM_LOGON_RESPONSE
Air-ground address forwarding procedure			
Contact Request	To instruct the aircraft to send a logon request to the specified ATSU.	FN_CAD	CM_CONTACT
Contact Response	To indicate to the initiating ATSU that the logon request will be sent to the specified ATSU.	FN_RESP	No ATN equivalent
Contact Complete	To provide to the initiating ATSU the status of the logon request to the specified ATSU.	FN_COMP	CM_CONTACT_RESPONSE

Reprograming work was carried out by our Oceanic ATM System developer and finally managed to integrate the capability to send and receive address forwarding (FN_CAD, FN_RESP and FN-COMP) messages into the HMI
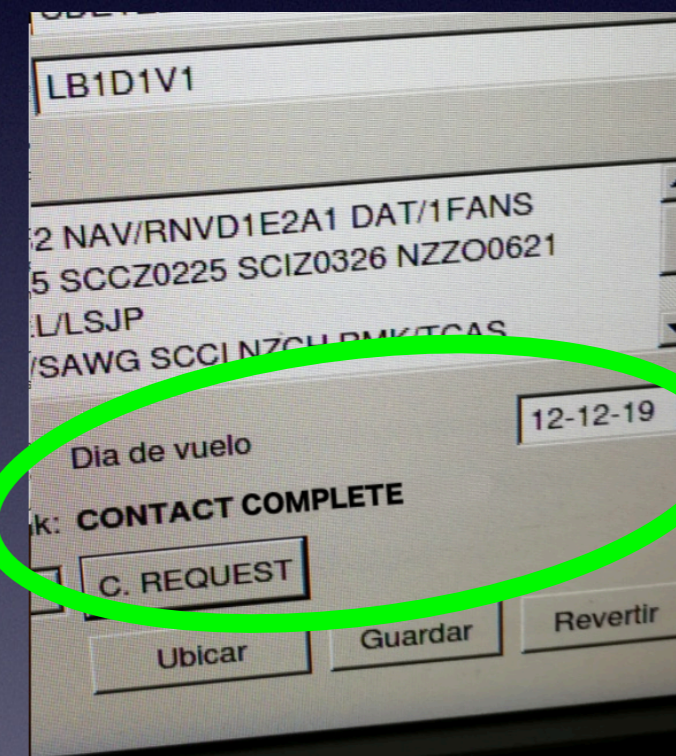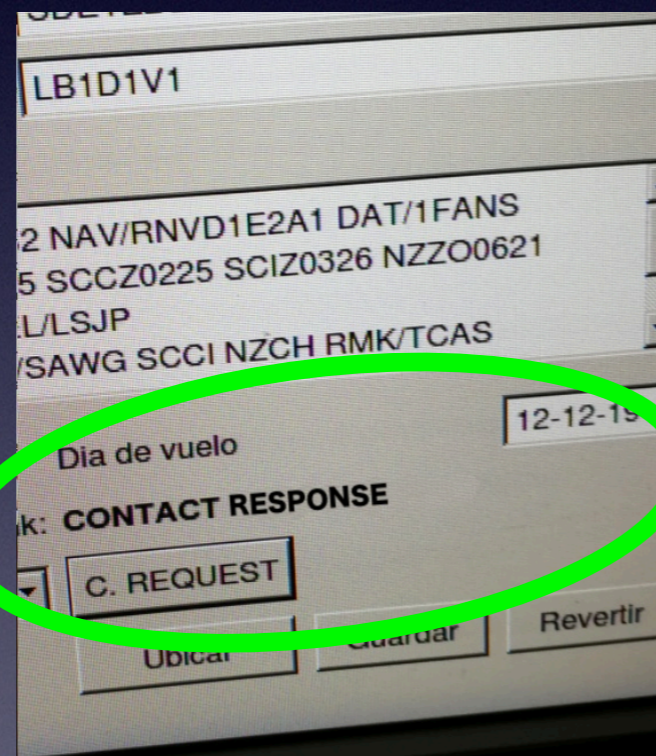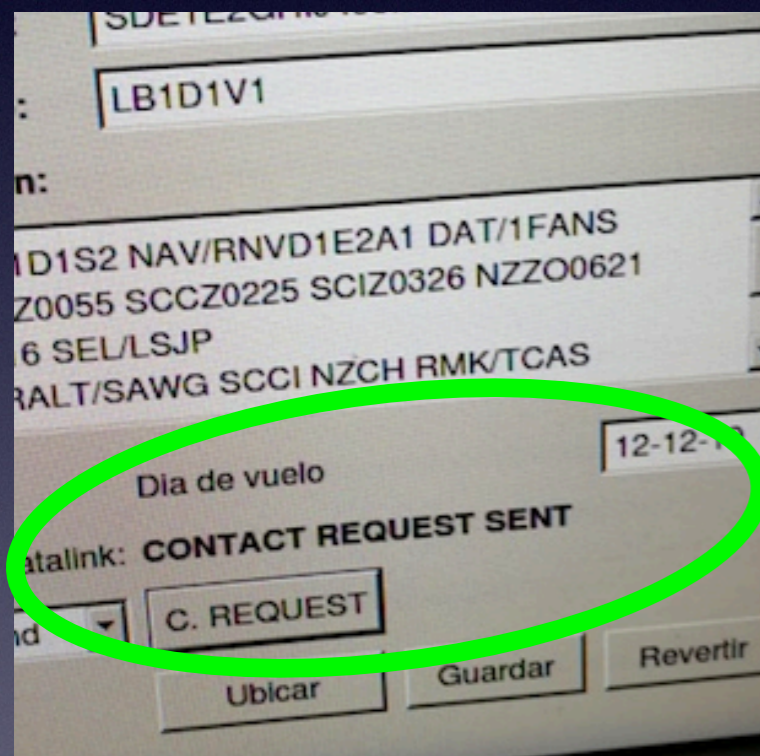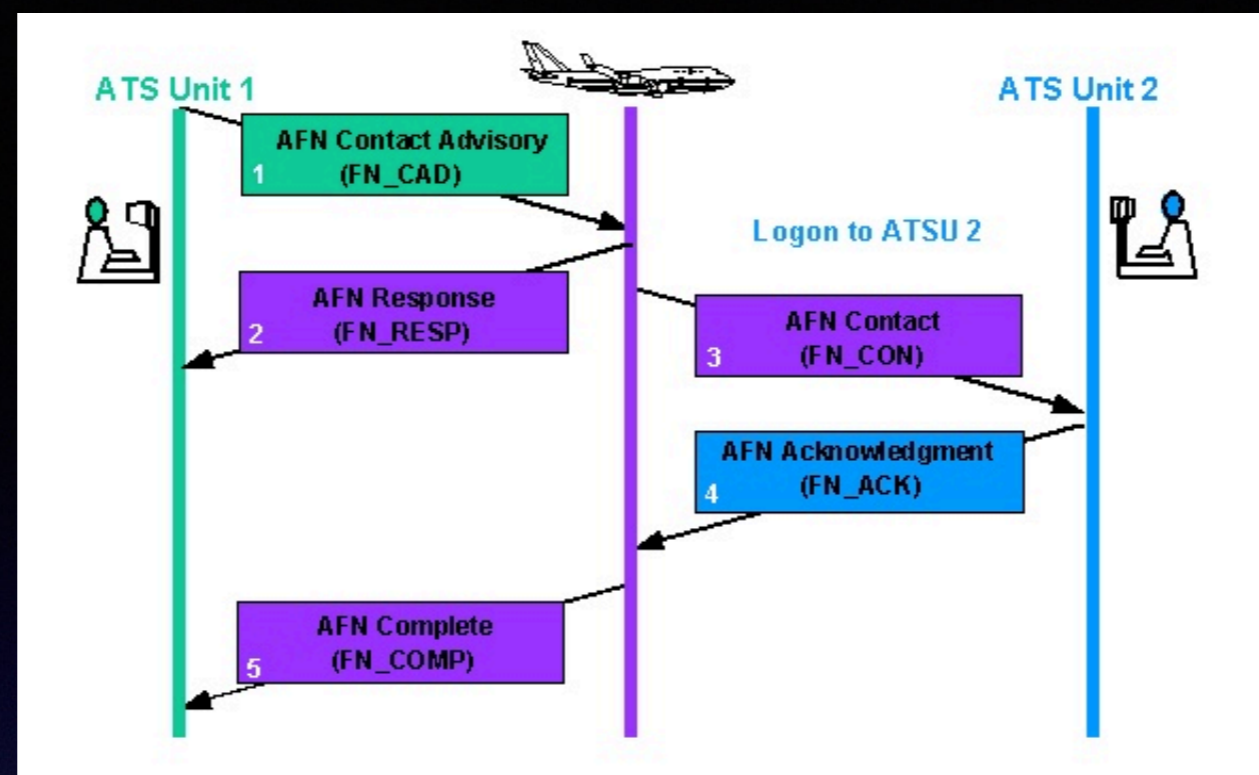
The address forwarding process is completely invisible to the flight crew. For AFN logons initiated by the address forwarding process, the flight crew has no indication that the FN_CON or FN_ACK messages have been delivered successfully.
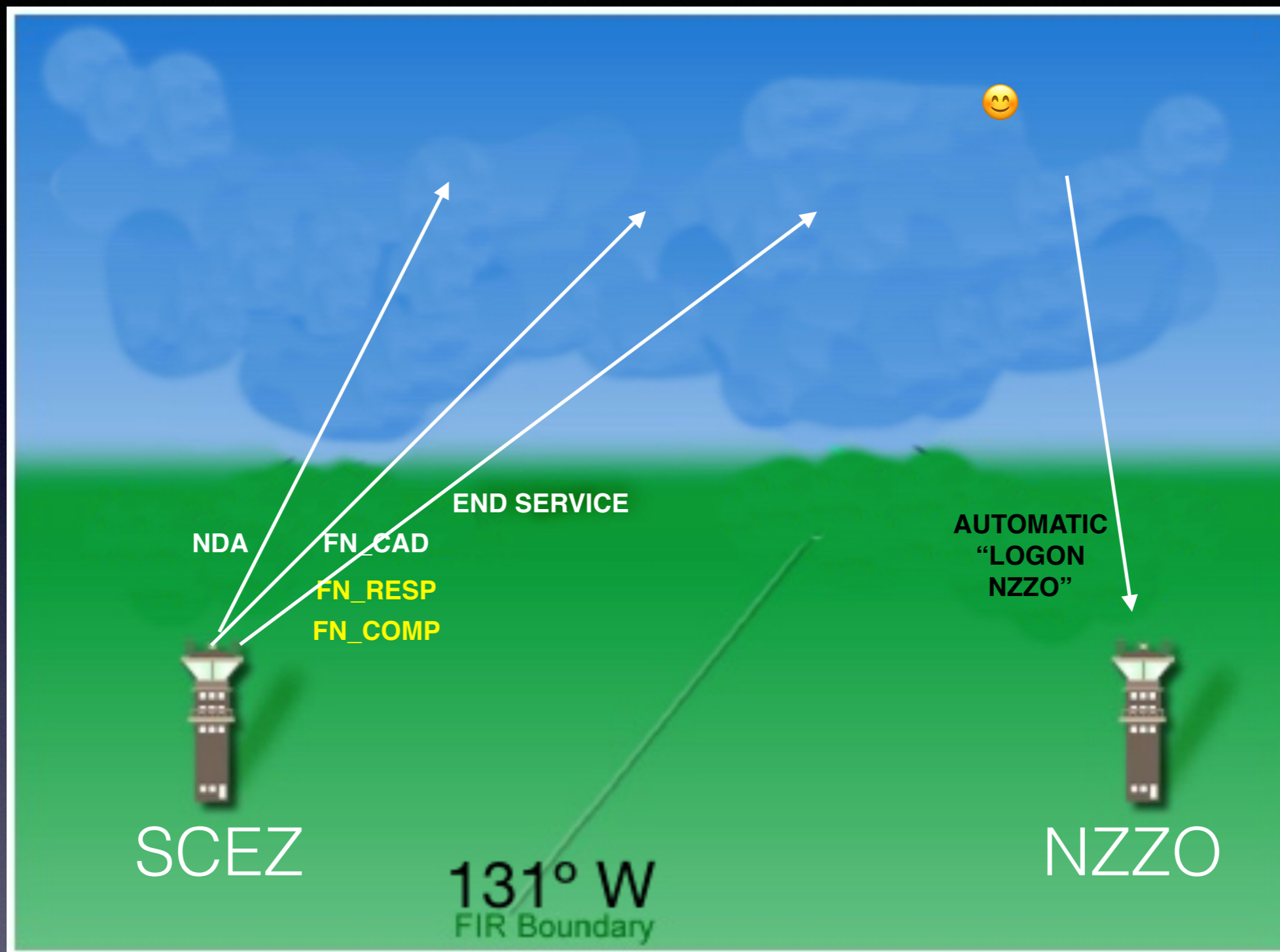
The result was successful and to date, the transfer of flights in a datalink environment (FANS 1/A) between Chile AOC and Auckland OAC has worked within the expected parameters. It is necessary to note that for Chile, *address forwarding initiation* is still carried out manually, however, with the future upgrade in our Oceanic ATM System, the implementation of more automated features is expected

THANK YOU