U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

**ORDER
JO 7110.125A**

Effective Date:
11/14/2022

SUBJ: Controller Pilot Data Link Communications (CPDLC) in the ERAM Environment

1. Purpose of This Order. This order prescribes interim guidance to supplement the guidance contained in FAA Order JO 7110.65, Air Traffic Control, in support of the initial use of CPDLC in Air Route Traffic Control Centers (ARTCC) using ERAM for domestic operational air traffic control services. The guidance contained in this order applies to those facilities that have been approved to use CPDLC with ERAM for domestic operational air traffic control services.

2. Audience. This order is intended for all air traffic personnel at ARTCCs that use CPDLC for domestic operational air traffic control services.

3. Where Can I Find This Order? This order is available on the MyFAA employee website at https://employees.faa.gov/tools_resources/orders_notices/ and on the air traffic publications website at https://www.faa.gov/air_traffic/publications/.

4. Cancellation. This order cancels FAA Order JO 7110.125, Controller Pilot Data Link Communications (CPDLC) in the ERAM Environment.

5. Responsibilities. ARTCC air traffic managers must ensure that the provisions of this order are implemented and briefed to appropriate personnel prior to the initial operational use of CPDLC for domestic operational air traffic control services.

6. Explanation of Policy Changes. Whenever CPDLC in ERAM is used operationally for domestic air traffic control services, the requirements specified in this order supplement the applicable provisions of FAA Order JO 7110.65. Following CPDLC implementation at all ERAM facilities, the requirements of this order will be integrated into a future change to FAA Order JO 7110.65. This revised order includes updates to allow partial deployment of full services CPDLC, including advisory messages, speed assignment and holding. Some content from the original order has been rearranged and categorized for added clarity.

7. Background. CPDLC will be implemented in accordance with a phased schedule at ARTCCs using ERAM. The use of CPDLC enhances national airspace system safety and efficiency by improving the accuracy of air-to-ground communications. CPDLC augments, but does not replace, voice communications. This order provides controller guidance for CPDLC capabilities.

8. Definitions.

   a. Downlink: CPDLC message sent from the flight deck to ATC.

b. Eligibility: Designates which sector is eligible to exchange CPDLC messages with a specific aircraft.

NOTE-
Only one sector at a time is eligible to exchange CPDLC messages with a specific aircraft.

c. Connection: A virtual connection between the ground system and the aircraft for the exchange of CPDLC messages.

d. Pilot Initiated Downlink (PID): Any message exchange that originates from the flight deck.

e. Trajectory Altering Clearance (TAC): A clearance that alters altitude, speed, heading, or route.

f. Transfer of Communication (TOC): A CPDLC uplink that instructs the pilot to either contact or monitor the next air traffic radio frequency.

g. Uplink: CPDLC message sent from ATC to the flight deck.

9. Procedures.

a. General

1. The use of CPDLC is approved to augment the voice communication requirements of FAA Order JO 7110.65 for all altitudes, routes, speeds, holding clearances, altimeters, advisories, and frequency changes.

2. The sector team is responsible for sending and responding to CPDLC messages.

3. Controllers should minimize the use of CPDLC during critical phases of flight.

4. CPDLC should not be used to issue immediate or expeditious clearances unless voice communication is not operationally feasible.

5. Ensure there are no TACs open prior to transfer of communication unless otherwise coordinated.

6. Use of the automated Voice Communication Indicator (VCI) during CPDLC operations complies with the requirements of FAA Order JO 7110.65 Paragraph 2-1-17, Radio Communications.

7. Unless otherwise coordinated, the last controller working the aircraft before it exits the continental United States (U.S.) must ensure the CPDLC connection is terminated upon transfer of communication to any non-U.S. facility or Advanced Technologies and Oceanic Procedures (ATOP) sector.

8. Coordination must be accomplished with the sector with eligibility prior to terminating a CPDLC connection from any other position or adapted air traffic workstation.

9. In the event of receipt of an emergency PID, follow the provisions of FAA Order JO 7110.65, Chapter 10, Emergencies.

10. When responding to a PID for a weather deviation request via CPDLC, and the aircraft has a clearance to climb/descend via or has a crossing restriction, the controller must unable the request and revert to voice communications.

NOTE-
After a climb via or descend via clearance has been issued, a vector/deviation off of a SID/STAR cancels the altitude restrictions on the procedure. The aircraft's flight management system (FMS) may be unable to process crossing altitude restrictions once the aircraft leaves the SID/STAR lateral path. Without an assigned altitude, the aircraft's FMS may revert to leveling off at the altitude set by the pilot, which may be the SID/STAR published top or bottom altitude.

REFERENCE−
FAA Order JO 7110.65, Para 4−2−5, Route or Altitude Amendments.

b. Abnormal Situations

(1) When an initial contact (IC) mismatch or confirm assigned altitude (CAA) downlink time-out indicator is displayed in the full data block (FDB) and aircraft list (ACL), the controller who has the aircraft on their voice frequency must use voice communication to verify the assigned altitude of the aircraft and acknowledge the IC mismatch/time-out indicator.

NOTE-
All sectors in the controlling ARTCC displaying an FDB will show the IC mismatch/time-out indicator.

(2) Abnormal CPDLC indications must be acknowledged by the controller only after required coordination has been performed.

(3) Use voice communications when overriding an open CPDLC clearance and issuing alternate control instructions. If the CPDLC clearance contains multiple elements, the entire clearance must be restated.

PHRASEOLOGY-
DISREGARD CPDLC (type) CLEARANCE (description of clearance) AND SEND AN UNABLE (alternate clearance).

EXAMPLES-
"American Fifty-Two, disregard CPDLC altitude clearance to flight level three five zero and send an unable. Climb and maintain flight level three one zero."

"Delta Four Twenty Three, disregard CPDLC route clearance direct Memphis and send an unable. Cleared direct Nashville, direct Memphis, rest of route unchanged."

"United Thirty-Two, disregard CPDLC hold clearance at JKSON and send an unable. Cleared to Atlanta airport via direct JKSON GLAVN one, maintain flight level three three zero."

"Alaska Ten, disregard CPDLC crossing and speed clearance at EMZOH and send an unable. Cross EMZOH at and maintain flight level two eight zero at two five zero knots."

NOTE-
Controllers should be aware that the CPDLC clearance being overridden may not have been received on the flight deck at the time of the voice communication. This phraseology tells the pilot exactly which clearance requires an UNABLE response.

(4)   Controllers may cancel an open uplink only after ensuring the pilot has been issued, via voice communication, the superseding ATC clearance.

NOTE-
1. The provisions of this paragraph are not intended to replace the requirements to override a CPDLC clearance as stipulated in paragraph b(3).

2. Cancelling an uplink only removes the uplink from the CPDLC ground system. The uplink remains open on the flight deck. Controllers must instruct the pilot to respond with an unable to close the uplink on the flight deck.

3. The ability to cancel an uplink is only provided to allow controllers to clear open uplink indications in the FDB and ACL. Clearing these indications allows controllers to continue CPDLC operations with the affected aircraft.

(5)   For No Radio (NORDO) aircraft with an active CPDLC connection:

(a)   It is permissible for the sector with eligibility to mark the aircraft on frequency to allow CPDLC communications with that aircraft.

(b)   Use existing procedures in FAA Order JO 7110.65, paragraphs 5-2-4, Radio Failure, and 10-4-4, Communications Failure, for all CPDLC aircraft that experience a two-way voice radio communications failure.

c. System Situations

1.   If the CPDLC system fails to provide a necessary automated altimeter setting to an aircraft, the controller must issue an altimeter setting in accordance with FAA Order JO 7110.65 Chapter 2, Section 7, Altimeter Settings.

NOTE-
If the CPDLC system fails to provide an automated altimeter setting, the controller with eligibility will be notified with an abnormal indication in the FDB. Automated altimeters are only sent in response to a monitor TOC, or an altitude uplink when the assigned altitude is below FL180.

2.   When a CPDLC connection is unexpectedly lost with an aircraft, and voice communication had not previously been established, the controller must ensure voice communication is established and maintained with that aircraft.

3.   Whenever there is a shutdown or failure of CPDLC service:

(a)   The Operations Manager in Charge (OMIC) must coordinate with each area to ensure controllers refrain from initiating new CPDLC uplinks and start cleaning up existing CPDLC messages.

(b)   Controllers must use voice to broadcast a message alerting pilots to the shutdown and request no pilot downlinks until further advised.

EXAMPLE-
"Attention all aircraft; CPDLC no longer in use. Do not downlink any messages until further advised."

(c)   Controllers must take action to ensure that any open or abnormally closed uplinks at the time of the shutdown are resolved, by voice, with each aircraft.

d. Specific Uplinks

(1)   Advisory Messages

(a)   Control instructions and messages that require an acknowledgement from the aircraft must not be issued via advisory/free text messages.

NOTE-
This type of message includes, for example, traffic advisories, terrain advisories, etc.

(b)   When using abbreviations to compose weather related or advisory/free text messages, comply with AC-00-45, Aviation Weather Services.

NOTE-
Some common meteorological abbreviations:

- *Extreme = EXTRM*
- *Severe = SEV*
- *Heavy = HVY*
- *Moderate = MOD*
- *Light = LGT*
- *Turbulence = TURB*
- *Continuous = CONS*
- *Occasional = OCNL*
- *Intermittent = INTMT*

(2) Speeds

(a)   When using CPDLC to issue a speed assignment to an aircraft at or above FL390, the WILCO response satisfies the requirement in JO 7110.65, 5-7-2-b regarding pilot concurrence.

(b)   CPDLC must not be used to issue a speed adjustment to an aircraft established on a route or procedure that has published speed restrictions.

3. Holding

(a)   CPDLC must not be used to clear an aircraft out of holding.

NOTE-
Because a route uplink does not specify a new clearance limit, clearing an aircraft out of holding must be done via voice.

(b)   If an aircraft has a clearance to climb/descend via, holding instructions must not be issued via CPDLC.

NOTE-
The vertical navigation portion of the procedure must be canceled prior to using CPDLC to issue holding instructions.

10. Distribution. This order is distributed to the following units: Air Traffic Services, Technical Operations, System Operations Services, Mission Support Services, Safety and Technical Training; the William J. Hughes Technical Center; the Mike Monroney Aeronautical Center; the Air Traffic Control System Command Center; and all air traffic control facilities.

11. Safety Management System. Appropriate safety management documentation, in accordance with FAA Order 1100.161, Air Traffic Safety Oversight, ATO Order JO 1000.37, Air Traffic Organization Safety Management System, and the ATO Safety Management System Manual, has been completed in support of this order.

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Appendix A
CPDLC MESSAGES

RESPONSE ATTRIBUTE OF CPDLC MESSAGE ELEMENT

Response attribute	Description
	For uplink message
W/U	Response required. Valid responses. WILCO, UNABLE, STANDBY, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY, LOGICAL ACKNOWLEDGEMENT (only if required), ERROR NOTE— WILCO, UNABLE, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY and ERROR will close the uplink message. FANS 1/A.— WILCO, UNABLE, STANDBY, ERROR, NOT CURRENT DATA AUTHORITY.
A/N	Response required. Valid responses. AFFIRM, NEGATIVE, STANDBY, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY, LOGICAL ACKNOWLEDGEMENT (only if required), ERROR NOTE— AFFIRM, NEGATIVE, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY and ERROR will close the uplink message. FANS 1/A.— AFFIRM, NEGATIVE, STANDBY, ERROR, NOT CURRENT DATA AUTHORITY
R	Response required. Valid responses. ROGER, UNABLE, STANDBY, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY, LOGICAL ACKNOWLEDGEMENT (only if required), ERROR NOTE— ROGER, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY and ERROR will close the uplink message. FANS 1/A.— ROGER, STANDBY, ERROR, NOT CURRENT DATA AUTHORITY. FANS 1/A aircraft do not have the capability to send UNABLE in response to an uplink message containing message elements with an "R" response attribute. For these aircraft, the flight crew may use alternative means to UNABLE the message. These alternative means will need to be taken into consideration to ensure proper technical and operational closure of the communication transaction.
Y	Response required.

	Valid responses: Any CPDLC downlink message, LOGICAL ACKNOWLEDGEMENT (only if required).
N	No response required unless logical acknowledgement is required. Valid Responses (only if LOGICAL ACKNOWLEDGEMENT is required). LOGICAL ACKNOWLEDGEMENT, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY, ERROR FANS 1/A.— "N" is defined as "no response is required," but not used. Under some circumstances, an ERROR message will also close an uplink message.
NE	[Not defined in Doc 4444] FANS 1/A.— The WILCO, UNABLE, AFFIRM, NEGATIVE, ROGER, and STANDBY responses are not enabled (NE) for flight crew selection. An uplink message with a response attribute NE is considered to be closed even though a response may be required operationally. Under some circumstances, a downlink error message may be linked to an uplink message with a NE attribute.
For downlink message	
Y	Response required. Yes Valid responses. Any CPDLC uplink message, LOGICAL ACKNOWLEDGEMENT (only if required).
N	Response required. No, unless logical acknowledgement required. Valid responses (only if LOGICAL ACKNOWLEDGEMENT is required). LOGICAL ACKNOWLEDGEMENT, SERVICE UNAVAILABLE, FLIGHT PLAN NOT HELD, ERROR FANS 1/A.— Aircraft do not have the capability to receive technical responses to downlink message elements with an "N" response attribute (other than LACK or ERROR for ATN B1 aircraft). In some cases, the response attribute is different between FANS 1/A aircraft and Doc 4444. As an example, most emergency messages have an "N" response attribute for FANS 1/A whereas Doc 4444 defines a "Y" response attribute for them. As a consequence, for FANS 1/A aircraft, ATC will need to use alternative means to acknowledge to the flight crew that an emergency message has been received.

TBL A-1
Route Message Elements

Route uplink message elements (RTEU)				
CPDLC message sets		**Operational definition in PANS-ATM (Doc 4444)**		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
UM74 PROCEED DIRECT TO *(position)*	W/U	**RTEU-2**	**Instruction to proceed directly to the specified position.**	**PROCEED DIRECT TO** *(position)*
UM75 WHEN ABLE PROCEED DIRECT TO (*position***)** *NOTE — This message element is equivalent to SUPU-5 plus RTEU-2 in Doc 4444.*	W/U	**RTEU-2**	**Instruction to proceed directly to the specified position.**	**PROCEED DIRECT TO** *(position)*
UM77 AT *(position)* **PROCEED DIRECT TO** *(position)*	W/U	**RTEU-4**	**Instruction to proceed, at the specified position, directly to the next specified position.**	**AT** *(position)* **PROCEED DIRECT TO** *(position)*
UM78 AT *(altitude)* **PROCEED DIRECT TO** *(position)*	W/U	**RTEU-5**	**Instruction to proceed upon reaching the specified level, directly to the specified position.**	**AT** *(level single)* **PROCEED DIRECT TO** *(position)*
UM79 CLEARED TO *(position)* **VIA** *(route clearance)*	W/U	**RTEU-6**	**Instruction to proceed to the specified position via the specified route.**	**CLEARED TO** *(position)* **VIA** *(departure data[O])* *(en-route data)*
UM80 CLEARED *(route clearance)*	W/U	**RTEU-7**	**Instruction to proceed via the specified route.**	**CLEARED** *(departure data[O])* *(en-route data)* *(arrival approach data)*
UM83 AT *(position)* **CLEARED** *(route clearance)*	W/U	**RTEU-9**	**Instruction to proceed from the specified position via the specified route.**	**AT** *(position)* **CLEARED** *(en-route data) (arrival approach data)*
UM91 HOLD AT *(position)* **MAINTAIN** *(altitude)* **INBOUND TRACK** *(degrees)* *(direction)* **TURN LEG TIME** *(leg type)*	W/U	**RTEU-11**	**Instruction to enter a holding pattern at the specified position in accordance with the specified instructions.** *NOTE — RTEU-13 EXPECT FURTHER CLEARANCE*	**AT** *(position)* **HOLD INBOUND TRACK** *(degrees)(direction)* **TURNS** *(leg type)* **LEGS**

			AT TIME (time) is appended to this message when an extended hold is anticipated.	
UM92 HOLD AT [position] AS PUBLISHED MAINTAIN [altitude]	W/U	RTEU-12	**Instruction to enter a holding pattern at the specified position in accordance with the published holding instructions. NOTE — RTEU-13 ECPECT FURTHER CLEARANCE AT TIME (time) is appended to this message when an extended hold is anticipated.**	**AT (position) HOLD AS PUBLISHED**
UM93 EXPECT FURTHER CLEARANCE AT *(time)*	W/U	RTEU-13	**Notification that an onwards clearance may be issued at the specified time.**	**EXPECT FURTHER CLEARANCE AT TIME** *(time)*
UM137 CONFIRM ASSIGNED ROUTE *NOTE — NE response attribute.*	Y	RTEU-15	**Request to confirm the assigned route.**	**CONFIRM ASSIGNED ROUTE**

TBL A-2

Route Downlink message elements (RTED)				
CPDLC message sets		**Operational definition in PANS-ATM (Doc 4444)**		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
DM22 REQUEST DIRECT TO *(position)*	Y	RTED-1	**Request for a direct clearance to the specified position.**	**REQUEST DIRECT TO** *(position)*
DM23 REQUEST *(procedure name)*	Y	RTED-2	**Request for the specified procedure or clearance name.**	**REQUEST** *(named instruction)*
DM24 REQUEST *(route clearance)*	Y	RTED-3	**Request for the specified route.**	**REQUEST CLEARANCE** *(departure data[O]) (en-route data) (arrival approach data[O])*
DM40 ASSIGNED ROUTE *(route clearance)*	N	RTED-9	**Confirmation that the assigned route is the specified route.**	**ASSIGNED ROUTE** *(departure data[O]) (en-route data) (arrival approach data[O])*

TBL A-3
Lateral Message Elements

Lateral Uplink message elements (LATU)				
CPDLC message sets		**Operational definition in PANS-ATM (Doc 4444)**		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
UM82 CLEARED TO DEVIATE UP TO *(distance offset) (direction)* **OF ROUTE**	W/U	LATU-10	**Instruction allowing deviation up to the specified distance(s) from the cleared route in the specified direction*(s)*.**	**CLEARED TO DEVIATE UP TO** *(lateral deviation)* **OF ROUTE**
UM127 REPORT BACK ON ROUTE *NOTE — R response attribute.*	W/U	LATU-18	**Instruction to report when the aircraft is back on the cleared route.**	**REPORT BACK ON ROUTE**

TBL A-4
Lateral Message Elements

Lateral downlink message elements (LATD)				
CPDLC message sets		**Operational definition in PANS-ATM (Doc 4444)**		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
DM27 REQUEST WEATHER DEVIATION UP TO *(specified distance) (direction)* **OF ROUTE**	Y	LATD-2	**Request for a weather deviation up to the specified distance(s) off track in the specified direction(s).**	**REQUEST WEATHER DEVIATION UP TO** *(lateral deviation)* **OF ROUTE**
DM41 BACK ON ROUTE	N	LATD-4	**Report indicating that the cleared route has been rejoined.**	**BACK ON ROUTE**
DM59 DIVERTING TO *(position)* **VIA** *(route clearance)* *NOTE 1. — H alert attribute.* *NOTE 2. — N response attribute.*	N See Note	LATD-5	**Report indicating diverting to the specified position via the specified route, which may be sent without any previous coordination done with ATC.**	**DIVERTING TO** *(position)* **VIA** *(enroute data) (arrival approach data[O])*
DM60 OFFSETTING *(distance offset) (direction)* **OF ROUTE**	N See Note	LATD-6	**Report indicating that the aircraft is offsetting to a parallel track at the specified distance in the specified**	**OFFSETTING** *(specified distance) (direction)* **OF ROUTE**

			direction off from the cleared route.	
DM80 DEVIATING *(deviation offset)* *(direction)* **OF ROUTE** *NOTE 1. — H alert attribute.* *NOTE 2. — N response attribute*	**N** **See Note**	**LATD-7**	**Report indicating deviating specified distance or degrees in the specified direction from the cleared route.**	**DEVIATING** *(specified deviation)* *(direction)* **OF ROUTE**

NOTE–
ICAO Document 10037, Global Operational Data Link (GOLD) Manual has these values set to Y in their table.

TBL A-5
Level Message Elements

Level uplink message elements (LVLU)				
CPDLC message sets		**Operational definition in PANS-ATM (Doc 4444)**		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
UM19 MAINTAIN *(altitude)* *NOTE — Used for a single level.*	**W/U**	**LVLU-5**	**Instruction to maintain the specified level or vertical range.**	**MAINTAIN** *(level)*
UM20 CLIMB TO AND MAINTAIN *(altitude)* *NOTE — Used for a single level.*	**W/U**	**LVLU-6**	**Instruction that a climb to the specified level or vertical range is to commence and once reached is to be maintained.**	**CLIMB TO** *(level)*
UM23 DESCEND TO AND MAINTAIN *(altitude)* *NOTE — Used for a single level.*	**W/U**	**LVLU-9**	**Instruction that a descent to the specified level or vertical range is to commence and once reached is to be maintained.**	**DESCEND TO** *(level)*
UM30 MAINTAIN BLOCK *(altitude)* **TO** *(altitude)* *NOTE — Used for a vertical range.*	**W/U**	**LVLU-5**	**Instruction to maintain the specified level or vertical range.**	**MAINTAIN** *(level)*

UM31 CLIMB TO AND MAINTAIN BLOCK *(altitude)* TO *(altitude)* *NOTE — Used for a vertical range.*	W/U	LVLU-6	Instruction that a climb to the specified level or vertical range is to commence and once reached is to be maintained.	CLIMB TO *(level)*
UM32 DESCEND TO AND MAINTAIN BLOCK *(altitude)* TO *(altitude)* *NOTE — Used for a vertical range*	W/U	LVLU-9	Instruction that a descent to the specified level or vertical range is to commence and once reached is to be maintained.	DESCEND TO *(level)*
UM36 EXPEDITE CLIMB TO (*altitude*) *NOTE — This message element is equivalent to SUPU-3 plus LVLU-6 in Doc 4444.*	W/U	LVLU-6	Instruction that a climb to the specified level or vertical range is to commence and once reached is to be maintained.	CLIMB TO *(level)*
UM37 EXPEDITE DESCENT TO *(altitude)*	W/U	LVLU-9	Instruction that a descent to the specified level or vertical range is to commence and once reached is to be maintained.	DESCEND TO *(level)*
UM38 IMMEDIATELY CLIMB TO (*altitude*) *NOTE — This message element is equivalent to EMGU-2 plus LVLU-6 in Doc 4444.*	W/U	LVLU-6	Instruction that a climb to the specified level or vertical range is to commence and once reached is to be maintained.	CLIMB TO *(level)*
UM39 IMMEDIATELY DESCEND TO (*altitude*) *NOTE — This message element is equivalent to EMGU-2 plus LVLU-9 in Doc 4444.*	W/U	LVLU-9	Instruction that a descent to the specified level or vertical range is to commence and once reached is to be maintained.	DESCEND TO *(level)*
UM135 CONFIRM ASSIGNED ALTITUDE *NOTE — NE response attribute.*	Y	LVLU-27	Request to confirm the assigned level.	CONFIRM ASSIGNED LEVEL

UM177 AT PILOTS DISCRETION	NE	See Note		

NOTE–
ICAO Document 10037, Global Operational Data Link (GOLD) Manual does not include this in its tables.

TBL A-6

Level downlink message elements (LVLD)				
CPDLC message sets		**Operational definition in PANS-ATM (Doc 4444)**		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
DM6 REQUEST *(altitude)* *NOTE—Used for a single level.*	Y	LVLD-1	**Request to fly at the specified level or vertical range.**	**REQUEST** *(level)*
DM7 REQUEST BLOCK *(altitude)* **TO** *(altitude)* *NOTE— Used for a vertical range.*	Y	LVLD-1	**Request to fly at the specified level or vertical range.**	**REQUEST** *(level)*
DM9 REQUEST CLIMB TO *(altitude)*	Y	LVLD-2	**Request for a climb to the specified level or vertical range.**	**REQUEST CLIMB TO** *(level)*
DM10 REQUEST DESCENT TO *(altitude)*	Y	LVLD-3	**Request for a descent to the specified level or vertical range.**	**REQUEST DESCENT TO** *(level)*
DM38 ASSIGNED ALTITUDE *(altitude)* *NOTE— Used for a single level*	N	LVLD-11	**Confirmation that the assigned level or vertical range is the specified level or vertical range.**	**ASSIGNED LEVEL** *(level)*
DM61 DESCENDING TO *(altitude)* *NOTE — Urgent alert attribute.*	N	LVLD-14	**Report indicating descending to the specified level.**	**DESCENDING TO** *(level single)*
DM77 ASSIGNED BLOCK *(altitude)* **TO** *(altitude)* *NOTE— Used for a vertical range.*	N	LVLD-11	**Confirmation that the assigned level or vertical range is the specified level or vertical range.**	**ASSIGNED LEVEL** *(level)*

TBL A-7
Crossing Constraint Message Elements

Crossing Constraints (CSTU)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
UM46 CROSS *(position)* **AT** *(altitude)* *NOTE — Used for a single level.*	W/U	CSTU-1	**Instruction that the specified position is to be crossed at the specified level or within the specified vertical range.**	**CROSS** *(position)* **AT** *(level)*
UM49 CROSS (*position*) **AT AND MAINTAIN** (*altitude*) *NOTE 1. — A vertical range cannot be provided.* *NOTE 2.— This message element is equivalent to CSTU-1 plus LVLU-5 in Doc 4444.*	W/U	CSTU-1	**Instruction that the specified position is to be crossed at the specified level or within the specified vertical range.**	**CROSS** *(position)* **AT** *(level)*
UM51 CROSS *(position)* **AT** *(time)*	W/U	CSTU-4	**Instruction that the specified position is to be crossed at the specified time.**	**CROSS** *(position)* **AT TIME** *(time)*
UM52 CROSS *(position)* **AT OR BEFORE** *(time)*	W/U	CSTU-5	**Instruction that the specified position is to be crossed before the specified time.**	**CROSS** *(position)* **BEFORE TIME** *(time)*
UM53 CROSS *(position)* **AT OR AFTER** *(time)*	W/U	CSTU-6	**Instruction that the specified position is to be crossed after the specified time.**	**CROSS** *(position)* **AFTER TIME** *(time)*
UM55 CROSS *(position)* **AT** *(speed)*	W/U	CSTU-8	**Instruction that the specified position is to be crossed at the specified speed.**	**CROSS** *(position)* **AT** *(speed)*
UM56 CROSS *(position)* **AT OR LESS THAN** *(speed)*	W/U	CSTU-9	**Instruction that the specified position is to be crossed at or less than the specified speed.**	**CROSS** *(position)* **AT** *(speed)* **OR LESS**
UM57 CROSS *(position)* **AT OR GREATER THAN** *(speed)*	W/U	CSTU-10	**Instruction that the specified position is to be crossed at or greater than the specified speed.**	**CROSS** *(position)* **AT** *(speed)* **OR GREATER**
UM61 CROSS *(position)* **AT AND**	W/U	CSTU-14	**Instruction that the specified position is to be crossed at the level or within the vertical**	**CROSS** *(position)* **AT** *(level)* **AT** *(speed)*

MAINTAIN *(altitude)* AT *(speed)* NOTE 1.— *A vertical range cannot be provided.* NOTE 2.— *This message element is equivalent to CSTU-14 plus LVLU-5 in Doc 4444.*			range, as specified, and at the specified speed.	

TBL A-8
Speed Message Elements

Speed uplink message elements (SPDU)				
CPDLC message sets		**Operational definition in PANS-ATM (Doc 4444)**		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
UM106 MAINTAIN *(speed)*	**W/U**	**SPDU-4**	**Instruction to maintain the specified speed.**	**MAINTAIN** *(speed)*
UM107 MAINTAIN PRESENT SPEED	**W/U**	**SPDU-5**	**Instruction to maintain the present speed.**	**MAINTAIN PRESENT SPEED**
UM108 MAINTAIN *(speed)* **OR GREATER**	**W/U**	**SPDU-6**	**Instruction to maintain the specified speed or greater.**	**MAINTAIN** *(speed)* **OR GREATER**
UM109 MAINTAIN *(speed)* **OR LESS**	**W/U**	**SPDU-7**	**Instruction to maintain the specified speed or less.**	**MAINTAIN** *(speed)* **OR LESS**
UM116 RESUME NORMAL SPEED	**W/U**	**SPDU-13**	**Instruction to resume a normal speed. The aircraft no longer needs to comply with a previously issued speed restriction.**	**RESUME NORMAL SPEED**
UM134 CONFIRM SPEED NOTE— *NE response attribute.*	**Y**	**SPDU-15**	**Request to report the speed defined by the speed type(s).**	**REPORT** *(speed types)* **SPEED**

TBL A-9

Speed downlink message elements (SPDD)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
DM34 PRESENT SPEED *(speed)*	N	SPDD-3	Report indicating the speed defined by the specified speed types is the specified speed.	*(speed types)* SPEED *(speed)*

TBL A-10
Air Traffic Advisory Message Elements

Air traffic advisory uplink message elements (ADVU)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
UM154 RADAR SERVICES TERMINATED	R	ADVU-2.	Advisory that the ATS surveillance service is terminated	SURVEILLANCE SERVICE TERMINATED

TBL A-11
Voice Communications Message Elements

Voice communications uplink message elements (COMU)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
UM117 CONTACT *(ICAO unit name) (frequency)*	W/U	COMU-1	Instruction to establish voice contact with the specified ATS unit on the specified frequency.	CONTACT *(unit name) (frequency)*
UM120 MONITOR *(ICAO unit name) (frequency)*	W/U	COMU-5	Instruction to monitor the specified ATS unit on the specified frequency. The flight crew is not required to establish voice contact on the frequency.	MONITOR *(unit name) (frequency)*

TBL A-12

Voice communications downlink message elements (COMD)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
DM20 REQUEST VOICE CONTACT *NOTE — Used when a frequency is not required.*	Y	COMD-1	Request for voice contact on the specified frequency.	REQUEST VOICE CONTACT *(frequency)*

TBL A-13
Emergency/Urgency Message Elements

Emergency/urgency uplink message elements (EMGU)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
Used in combination with LVLU-6 and LVLU-9, which is implemented in FANS 1/A as: UM38 IMMEDIATELY CLIMB TO (*altitude*) UM39 IMMEDIATELY DESCEND TO (*altitude*)	N	EMGU-2	Instruction to immediately comply with the associated instruction to avoid imminent situation.	Immediately

TBL A-14

Emergency/urgency downlink message elements (EMGD)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
DM55 PAN PAN PAN *NOTE — N response attribute.*	Y	EMGD-1	**Indication of an urgent situation.**	**PAN PAN PAN**
DM56 MAYDAY MAYDAY MAYDAY *NOTE — N response attribute.*	Y	EMGD-2	**Indication of an emergency situation.**	**MAYDAY MAYDAY MAYDAY**
DM57 *(remaining fuel)* **OF FUEL REMAINING AND** *(remaining souls)* **SOULS ON BOARD** *NOTE — N response attribute.*	Y	EMGD-3	**Report indicating fuel remaining (time) and number of persons on board.**	*(remaining fuel)* **ENDURANCE AND** *(persons on board)* **PERSONS ON BOARD**
DM58 CANCEL EMERGENCY *NOTE — N response attribute.*	Y	EMGD-4	**Indication that the emergency situation is cancelled.**	**CANCEL EMERGENCY**

TBL A-15
Standard Response Message Elements

Standard response uplink message elements (RSPU)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
UM0 UNABLE	N	RSPU-1	**Indication that the message cannot be complied with.**	**UNABLE**
UM1 STANDBY	N	RSPU-2	**Indication that the message will be responded to shortly.**	**STANDBY**
UM3 ROGER	N	RSPU-4	**Indication that the message is received.**	**ROGER**

TBL A-16

Standard response downlink message elements (RSPD)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
DM0 WILCO	N	RSPD-1	Indication that the instruction is understood and will be complied with.	WILCO
DM1 UNABLE	N	RSPD-2	Indication that the instruction cannot be complied with.	UNABLE
DM2 STANDBY	N	RSPD-3	Indication that the message will be responded to shortly.	STANDBY
DM3 ROGER *NOTE — ROGER is the only correct response to an uplink free text message.*	N	RSPD-4	Indication that the message is received.	ROGER

TBL A-17
Supplemental Message Elements

Supplemental uplink message elements (SUPU)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
UM166 DUE TO TRAFFIC UM167 DUE TO AIRSPACE RESTRICTION	N	SUPU-2	Indication that the associated message is issued due to the specified reason.	DUE TO *(specified reason uplink)*

TBL A-18

Supplemental downlink message elements (SUPD)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
DM65 DUE TO WEATHER	N	SUPD-1	Indication that the associated message is issued due to specified reason.	DUE TO (*specified reason downlink*)
DM66 DUE TO AIRCRAFT PERFORMANCE				

TBL A-19
Free Text Message Elements

Free text uplink message elements (TXTU)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
UM169 *(free text)*	R	TXTU-1		*(free text)* *NOTE— M alert attribute.*
UM169 *(free text)* CPDLC NOT IN USE UNTIL FURTHER NOTIFICATION	R	See Note		*(free text)*
UM169 *(free text)* "[facility designation]" ALTIMETER (for Altimeter reporting Station)	R	See Note		*(free text)*
UM169 *(free text)* "[facility designation] ALTIMETER MORE THAN ONE HOUR" OLD	R	See Note		*(free text)*
UM169 *(free text)* DUE TO WEATHER	R	See Note		*(free text)*

UM169 *(free text)* **REST OF ROUTE UNCHANGED**	**R**	**See Note**		*(free text)*
UM169 *(free text)* **TRAFFIC FLOW MANAGEMENT REROUTE**	**R**	**See Note**		*(free text)*
UM169 *(free text)* **DUE TO SPACING**	**R**	**See Note**		*(free text)*
UM169 *(free text)* **ATC HAS YOUR REQUEST**	**R**	**See Note**		*(free text)*
UM169 *(free text)* **ATC ADVISORY**	**R**	**See Note**		*(free text)*

NOTE –
These are FAA scripted free text messages with no GOLD equivalent.

TBL A-20

Free text downlink message elements (TXTD)				
CPDLC message sets		**Operational definition in PANS-ATM (Doc 4444)**		
FANS 1/A	**Response**	**Message element identifier**	**Message element intended use**	**Format for message element display**
DM68 *(free text)* *NOTE 1. — Urgency or Distress Alr (M)* *NOTE 2. — Selecting any of the emergency message elements will result in this message element being enabled for the flight crew to include in the emergency message at their discretion.*	**Y**	**TXTD-1**		*(free text)* *NOTE — M alert attribute.*

TBL A-21
System Management Message Elements

System management uplink message elements (SYSU)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
UM159 ERROR *(error information)*	N	SYSU-1	**System-generated notification of an error.**	**ERROR** *(error information)*
UM160 NEXT DATA AUTHORITY *(ICAO facility designation)* *NOTE — The facility designation is required.*	N	SYSU-2	**System-generated notification of the next data authority or the cancellation thereof.**	**NEXT DATA AUTHORITY** *(facility designation[O])*

TBL A-22

System management downlink message elements (SYSD)				
CPDLC message sets		Operational definition in PANS-ATM (Doc 4444)		
FANS 1/A	Response	Message element identifier	Message element intended use	Format for message element display
DM62 ERROR *(error information)*	N	SYSD-1	**System-generated notification of an error.**	**SYSD-1**
DM63 NOT CURRENT DATA AUTHORITY	N	SYSD-3	**System-generated rejection of any CPDLC message sent from a ground facility that is not the current data authority.**	**SYSD-3**
DM64 *(ICAO facility designation)* *NOTE — Use by FANS 1/A aircraft in B1 environments.*	N	SYSD-5	**System-generated notification that the ground system is not designated as the next data authority (NDA), indicating the identity of the current data authority (CDA). Identity of the NDA, if any, is also reported.**	**SYSD-5**