NAS Data Communications Guide

Version 3.0
February 28, 2017

Change History

Version	Date	Description of Change
1.0	April 30, 2015	Initial issue of the Data Communications Implementation Team (DCIT) Tower Data Link Services (TDLS) Departure Clearance Service (DCL) Flight Deck User Guide
2.0	March 31, 2016	TDLS System update – Push DCL, cockpit flow diagram and description of logon procedure with PUSH DCL services, General document update to include Airbus aircraft pictures for integrated CPDLC interface and DCDU (requires an update from AIRBUS to reformat pictures to align with initial deployment of DCL service)
3.0	February 28, 2017	TDLS update – Flightcrew awareness phrase add for loadable routes, change of revised DCL functionality, graphics update supporting TDLS 12.2 software update, general content update to support TDLS 12.2 software update, KUSA logon information fy17, 2nd qtr. name change of document to "NAS Data Communications Guide"

Executive Summary

As part of the FAA NextGen introduction of advanced communications services in the NAS, Controller Pilot Data Link Communication-Departure Clearance (CPDLC-DCL) has been introduced at local Tower Data Link Service (TDLS) equipped facilities to provide the delivery of departure clearances and revised departure clearances through advanced automation and Controller Pilot Data Link Communications (CPDLC). The *NAS Data Communications Guide* introduces flight crews to the concept of CPDLC-DCL and outlines the roles of the Airline Operations Center, clearance delivery controllers, and flight crews. The document describes the general procedures for logging on, loading the flight plan, receiving departure clearances, responding and logging off. Examples of different types of revised departure clearances are provided with guidance for reviewing, processing and responding to the clearances.

Purpose

The following guidance material will support operators participating in the FAA's CPDLC-DCL departure clearance services at participating TDLS airports. Operators should extract information from the NAS Data Communications Guide and DCIT CPDLC End2End documents that will support their participation in the departure clearance services. Recommended CPDLC-DCL procedures or guidance is supplemental to the procedures recommended in the *Data Link Communication Advisory Circular (AC 90-XXX)*. Where appropriate, this guidance should be included in flight crew standard operational procedures.

Participation in CPDLC-DCL is at the discretion of the flight crew and/or operator. If the flight crew chooses not to participate, they will contact Clearance Delivery via voice for their ATC clearance or, if TDLS CPDLC-DCL is inoperative, request a PDC using Standard Operating Procedures (SOP) per the ATC flight plan filing instruction and operator's guidance concerning departure clearance retrieval.

CPDLC-DCL Table of Contents

Figures

Appendices

Chapter 1. Introduction

Voice communication frequencies used by pilots and air traffic control (ATC) are becoming increasingly congested and will not be able to accommodate the projected increase in air traffic demand. Use of data communications (Data Comm) to supplement some routine voice communications will increase efficiency, capacity, and safety. The FAA Data Communications Program (DCP) initiatives will be incrementally implemented to provide advanced communication capabilities. This transition from analog voice to digital communications results in a viable mode of communication that may predominate clearance delivery and the en route phase of flight.

Chapter 2. Departure Clearance Service (CPDLC-DCL)

The Controller Pilot Data Link Communication-Departure Clearance (CPDLC-DCL) provides automated assistance for delivering initial and revised departure clearances. CPDLC-DCL provides the following: flight plan route, initial and requested altitude, beacon code assignment and departure frequency. CPDLC-DCL messages are established message sets in Future Air Navigation System (FANS) equipped aircraft. The CPDLC-DCL service is designed for use in surface operations and replaces the existing Pre-Departure Clearance (PDC) at Tower Data Link Services (TDLS) sites for participating aircraft. A summary of the roles of the Airlines Operations Center (AOC) or company dispatch, clearance delivery controller, and flight crew are described below:

- *AOC / System Dispatch*   Just as in current operations, the aircraft operator will file an ATC flight plan with the Air Route Traffic Control Center (ARTCC) associated with the departure airport via a ground-to-ground communication system. Dispatch will receive courtesy copies of Departure Clearances sent to the aircraft.
- *Clearance Delivery Controller* ATC automation creates a proposed departure clearance and presents it to the controller for review. The controller may modify the departure clearance with local data, such as a Departure Procedure, and approves or revises the departure clearance. Upon delivery of the CPDLC-DCL to the aircraft, the automation system forwards a copy of the departure clearance to the AOC (or company dispatch).
- *Flight Crew* The flight crew activates the system during preflight by logging on to facility ID or KUSA when activated by the FAA. ATC can accept valid logon data before the controller reviews the departure clearance for approval. Once the controller (ATC) reviews and approves the departure clearance, ATC accepts the logon and initiates a CPDLC connection between the aircraft and ATC. ATC transmits a controller approved CPDLC-DCL to the aircraft. If the clearance needs to be amended (e.g., runway change, due to weather) the controller will send a message to the flight crew revising the CPDLC-DCL.

Chapter 3.   Flight Deck

3.1   Controls and Indicators

On Boeing implementations, the Engine Indicating and Crew Alert System (EICAS) advisory message "● ATC" (as shown in Figure 1) **or Airbus aircraft "ATC MSG" pushbutton on the glareshield** (as shown in Figure 3) along with an audible tone (in some aircraft) in the cockpit indicates that a message from ATC is available for viewing. To view the message, on Boeing implementations, select the Multifunction Control Display Unit (MCDU) ATC or ATC COMM Function key (as shown in Figure 2). Figures 3 and 4 show Airbus implementations to view ATC messages.

Figure 1.   Indication of ATC message (Boeing)
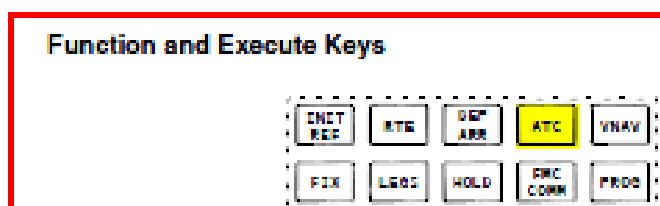
Figure 2. Function Execute Keys (Boeing)
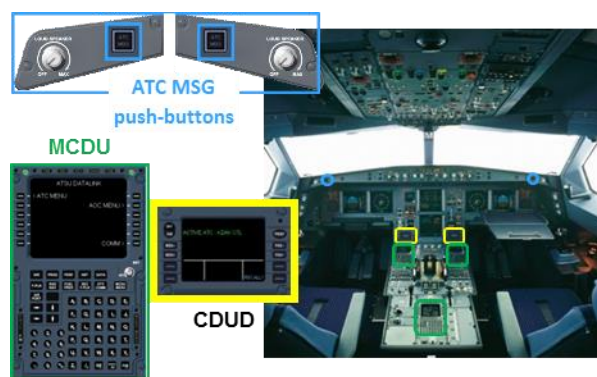
Figure 3.   A320 & A330/A340 controls and indications for FANS (Airbus)
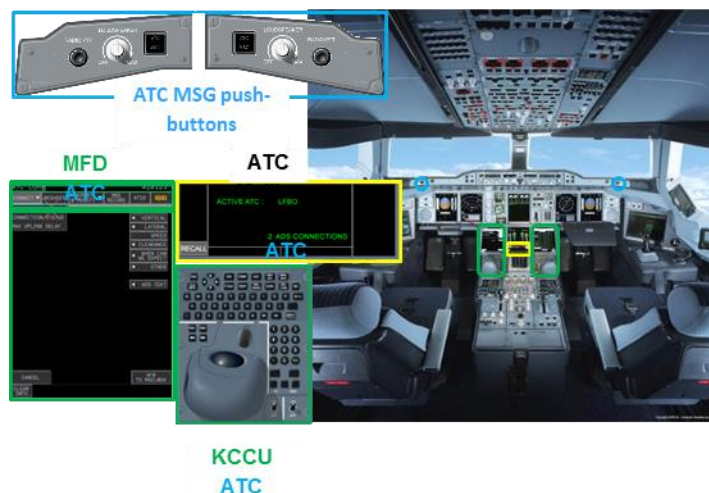
Figure 4.   A380 / A350 controls and indications for FANS (Airbus)

Available responses to a Departure Clearance are ACCEPT, REJECT, and STANDBY on Boeing implementations, or are WILCO, UNABLE and STANDBY on Airbus implementations (as shown in Figure 5).

Figure 5.   Examples of Clearance Responses and page locations

3.2   The Flight Crew should ACCEPT/WILCO the clearance when:

- The FMS indicates the clearance has been successfully loaded to include a manual entry of the Departure Procedure (DP), transition and runway if necessary. As per SOP, pilots must confirm no discontinuities exist as they review the entire updated clearance.

Note: On Boeing aircraft the flight crew should select ACCEPT whereas on Airbus, WILCO (WILL Comply) is used to accept the clearance.

3.3   The Flight Crew should REJECT/UNABLE the clearance when:

- The FMS indicates that it cannot load the clearance (e.g. the clearance was unable to be loaded or only part of the clearance loaded and the flight crew was unable to resolve the clearance); or
- The FMS indicates inconsistencies or discontinuities with the route modification that are not addressed by AIPs or local procedures and the flight crew was unable to resolve the clearance; or
- When company policies require the flight crew to obtain a new clearance.
  - The flight crew should use voice to clarify a clearance due to any loading failures, route discontinuities, or inconsistencies. If equipped, the ATC Review page (Boeing), or the FMS-ATC REJ INFO page (Airbus), or a displayed full route clearance may be used to resolve the clearance instead of voice.

3.4   The Flight Crew should select STANDBY when:

A timely response is not practical; the appropriate interim response is **STANDBY**. For example, a STANDBY response is appropriate when company procedures require an operational assessment of the reroute by dispatch or the AOC.

3.5   Transferring Route Clearance Information to the FMS

The "LOAD" option is available when ATC route information is included in the CPDLC-DCL uplink. Selecting "LOAD" will transfer route information into the FMS Active Route (RTE) page or into the Secondary Flight Plan page allowing the flight crew to review and accept the departure clearance per company procedures.

- The FMS checks the loadable portion of the clearance to ensure it is correctly formatted and compatible with the FMS navigation database. Remember, the departure procedure and departure transition is not included in the loadable route uplink and must be manually entered by the crew into the FMS when provided in the CPDLC-DCL.

3.6   CPDLC ATC Log or MSG RECORD

The "ATC LOG" or "MSG RECORD" function allows previous messages to be viewed by the flight crew when necessary.

Chapter 4.   Flight Crew Procedures and Guidance

Flight Crew Initiates a Normal Pre-Flight

Align the IRU's /ADIRU and Initialize the FMS

AOC RTE Data, PERF Data, T/O Data, and Wind Data is Sent to the aircraft and Loaded into the FMS, if applicable – otherwise manually load FMS w/FLT Plan & DP RWY info

Pre-Flt FMS, Select RTE Page and then Route Request, if applicable

LOGON to KUSA on the LOGON/Status page

FAA Ground Automation receives Logon or Notification to ATC information

Complete Normal Aircraft Pre-Flight

30 Minutes prior to Departure Time

AOC Dispatch

Aircraft Activity

ATC Function

Controller reviews the DCL, approves the clearance, then FAA Automation perform Flight Plan correlation and starts a CPDLC Session with the Aircraft

*ATC

Aircraft Comm Established w/Aural and Visual Cockpit Indications

Upon successful ATC CPDLC establishment with aircraft – TDLS automatically sends DCL to aircraft

ATC Message

Flight Crew Selects ATC Function Key "Reviews DCL Message" and Selects "LOAD" to review New Route, if applicable, then Responds as appropriate

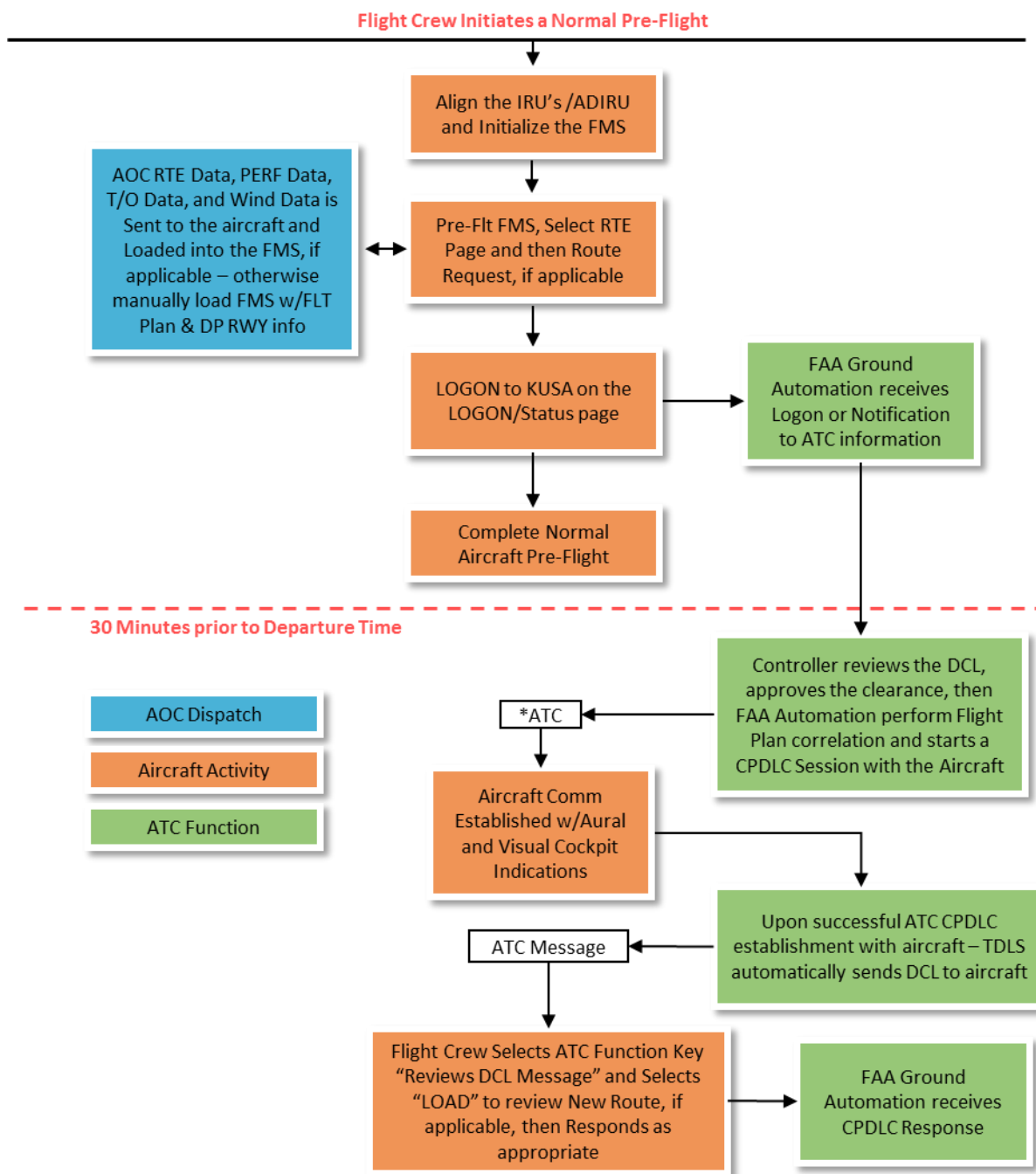FAA Ground Automation receives CPDLC Response

Figure 6. Overview of Flight Crew Departure Clearance Activities

4.1 Loading the Original Filed Flight Plan

Flight crews will have a flight plan on board to initially load the FMS with the filed route of flight. Crews should load the flight plan that was filed with ATC into the FMS via either:

- Company FMS uplink with route, wind, performance and takeoff information, or
- Manually-entered full route, wind, performance and takeoff information from the onboard flight plan per company procedures.

4.2 LOGON or Notification

Logon or Notification to ATC may be completed anytime during pre-flight operations. Within 30 minutes of the proposed departure time (P-30), an "ATC Connection Established" message will be received by the aircraft if the following conditions are met:

- The logon information was correctly formatted
- ATC filed flight plan on file
- Company dispatch has indicated to the FAA the aircraft is CPDLC-DCL capable via the flight plan or subscriber data base information
- ATC Controller has approved the CPDLC-DCL
    - o If the initial attempt to logon/notification fails, flight crews should ensure that a flight plan is on file, verify the logon information is correct, then one additional logon attempt should be made. If the second logon attempt fails, the crew should revert to voice and contact clearance delivery for the departure clearance or revert to PDC if your company has indicated preferences for data communication in the FAA subscriber data base or Field 18 of the filed flight plan.
    - o Reverting to PDC is only available if entire CPDLC-DCL service is unavailable at the TDLS facility.

4.3 CPDLC-DCL - Departure Clearance Delivery:

Once a successful ATC connection has been established and your departure clearance has been approved by the controller, the CPDLC-DCL will be automatically sent to the aircraft.

After the first received uplink departure clearance, if appropriate, the aircrew may request a subsequent departure clearance using the REQUEST CLEARANCE (DM25). This will result in either a CLEARED (route clearance) (UM80) or CLEARED TO (position) VIA (route clearance) (UM79) uplink message being delivered to the aircraft.
Note: When making a departure clearance request, DO NOT add any "free text" to the downlink page. If any free text information is added, the ground system will reject the message and send an auto reply message indicating: "ATSU CANNOT PROCESS DATA APPENDED TO CLEARANCE REQUEST".

Boeing Aircraft: To request the CPDLC-DCL on the ATC page, select "CLEARANCE", followed by request "SEND". See Figure 7 and 8 for MCDU examples.

Figure 7.   Boeing ATC Index page w/Clearance

Figure 8.   Verification/Send

Airbus Aircraft: On A320/330/A340 aircraft, request the CPDLC-DCL on the ATC OTHER REQ page, select "CLEARANCE". Then, select "ATC REQ DISPL" to generate the downlink on Datalink Control and Display Unit (DCDU) (as shown in Figure 9).

Figure 9.   ATC OTHER REQ page on A320/330/A340

Airbus Aircraft: On A350/380 aircraft, request the CPDLC-DCL on the REQUEST page, select "GENERIC" in the "CLEARANCE" sub-menu. Then, select "XFR TO MAILBOX" to generate the downlink on Mailbox (as shown in Figure 10).

Figure 10. REQUEST page on A380 / A350

4.4   Flight Crew Processing of CPDLC-DCL

Flight crews should treat any CPDLC-DCL sent to the aircraft just like they would any voice or PDC per company procedures when reviewing and accepting route clearances. One additional feature of the CPDLC-DCL is the ability to send revisions to a previously cleared flight plan. Revisions can be received at any time until the aircraft is ready for takeoff. Amendments can be a simple altitude change or a more complex full re-route clearance. When notified of a revised clearance, flight crews should use good judgment and follow company procedures, especially when the clearance is received just prior to takeoff.

At any time, flight crews should contact clearance delivery by voice:

- *To clarify the delivered clearance*
- *To request an amendment*
- *When requested by ground control*
- *Whenever safety dictates*
- *Anytime when confusion exists or clarification is needed*

4.4.1 At the Gate

When an initial/revised CPDLC-DCL is received, flight crews should, in accordance with company policy or best operational judgment, review the initial or revised clearance and respond with ACCEPT-WILCO / REJECT-UNABLE / STANDBY, as appropriate.

4.4.2 Off the Gate

Flight crews should, in accordance with company policy or best operational judgment, review the revised clearance and respond with ACCEPT-WILCO / REJECT-UNABLE/ STANDBY, as appropriate.

A revised clearance may contain simple changes (e.g., a revised transponder code) or complex changes (e.g., a full re-route). Complex revisions may require substantial 'heads-down' time for FMS route loading and verification. Whether or not these activities will be able to be conducted without requesting additional time from ATC will depend on a variety of factors and is at the discretion of the flight crew. In some cases, it may not be prudent to conduct these activities when the aircraft is in motion (such as approaching a runway). It is advisable to notify the appropriate ATC controller (ground or tower control) and pull out of the ground traffic flow when:

- Required by company procedures
- In areas of high traffic density or high-tempo operations
- In low-visibility or nighttime operations
- When safety dictates

4.5   Logoff Current Data Authority (CDA) and Logon to Next Data Authority (NDA)

1. The flight crew activates the data link system as they prepare the aircraft for the flight by logging on to the facility ID or KUSA (summer 2017 with FAA notification) or facility ID. This is the common National Single Data Authority (NSDA) logon address for all NAS CPDLC connections within the Continental United States.

   For aircraft participating in CPDLC-DCL ground operations only, flightcrews can expect an automated ATC initiated disconnect 5-10 minutes after takeoff.

2. Flightcrews are reminded to logoff the CDA (i.e. KUSA or facility ID) and logon to oceanic remote environments as required. In the NAS, automatic handoff from the CDA to the NDA will occur in FY 2019 with the implementation of en route CPDLC services.

3. Flight crews should wait at least 10 minutes after landing before initiating a CPDLC-DCL logon to ensure En Route Automation Modernization (ERAM) and TDLS have enough time to clear previous flight information.

4.5.1 Flight Crew/ATC initiated CPDLC connection Termination

If the flight crew elects to disconnect their ATC CPDLC connection or the CPDLC session is terminated by the controller while on the ground, all subsequent departure clearance services will be handled via voice. Accepted CPDLC clearances will remain in effect for that flight unless amended by clearance delivery via voice.

Chapter 5.   Departure Clearances (CPDLC-DCL)

5.1   "THEN AS FILED"

When no changes have been made to the filed flight plan, ATC will send a "THEN AS FILED" departure clearance that does not contain a loadable route clearance:

- Flight crews will obtain the FMS route information from the onboard flight plan or from company dispatch and **manually insert the DP, transition and runway (if applicable)** obtained from the CPDLC-DCL into the FMS.

5.2   Change from Filed Flight Plan – Initial Clearance

If ATC has modified the filed flight plan, a FMS loadable route clearance will be sent to the aircraft stating either a "CLEARED ROUTE CLEARANCE" or "CLEARED TO POSITION VIA ROUTE CLEARANCE" message.

> **Caution**: After loading the uplinked CPDLC-DCL clearance, it is important to use the individual FMS pages to request AOC/company wind, performance, and/or takeoff data, or manually enter the data per company procedures. Do not use the (Boeing) AOC/Company FMS RTE page "ROUTE REQUEST" and the (Airbus) FMS INIT/CPNY F-PLN request functions for these requests. **Using the (Boeing) AOC/Company FMS "ROUTE REQUEST" or (Airbus) FMS INIT/CPNY F-PLN request function will delete the cleared ATC assigned route from the FMS.**

5.3   Types of Revised CPDLC-DCLs with Loadable Route Information

If ATC has modified the filed flight plan, ATC will send a revised CPDLC-DCL to the aircraft. The route modification will have one of two types of loadable en route clearances (as shown in Figures 11-12). **Reminder: DPs, transitions and the departure runway are always manually entered by the flight crew**:

- **Partial Reroute:** This is displayed in the DCL as a "CLEARED TO (position) VIA ROUTE CLEARANCE" and is sent when the beginning of the DCL connects downstream to the previously cleared or filed ATC route. In the example shown in Figure 11 below, the clearance from TORNN to MCB is the modified route and may be loaded into the FMS via the LOAD prompt. The DP DARTZ3.TORNN must be manually entered into the FMS along with the runway (if required).

This type of clearance may be issued as a "revised initial clearance" as your first received CPDLC-DCL.
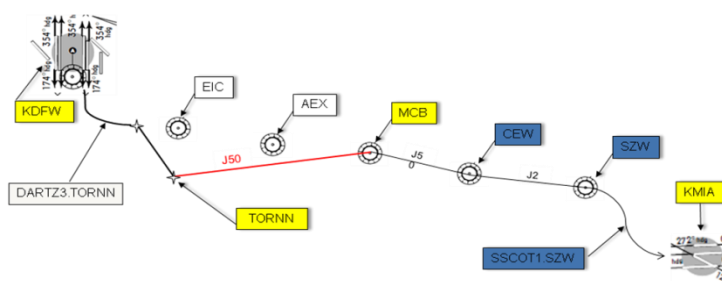

Figure 11. Depiction of a revision to the initial portion of the CPDLC-DCL.

OR

- **Full Reroute:** This is displayed as "CLEARED ROUTE CLEARANCE" and revises the routing all the way to destination. A complete route modification that does not connect to the previously cleared flight plan (as shown in Figure 12) may be loaded into the FMS via the LOAD prompt. The DP ARDIA3.CLL must be manually entered into the FMS along with the runway (if required).

    This type of clearance may be issued as a "revised initial clearance" as your first received CPDLC-DCL.
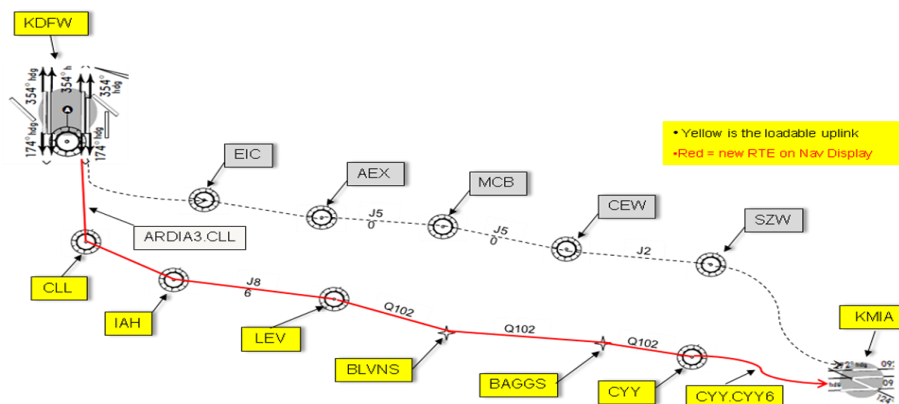

Figure 12. Depiction of a complete route modification.

Chapter 6.   CPDLC-DCL Examples

6.1   Depiction of "THEN AS FILED"

The flight crew manually inserts the flight plan into the FMS or obtains an AOC flight plan FMS uplink prior to logging on CPDLC-DCL. The Cleared As Filed (CAF) CPDLC-DCL may include a DP/transition fix that will be included as free text and, if applicable, requires a manual entry into the FMS route.

Example for Boeing Aircraft
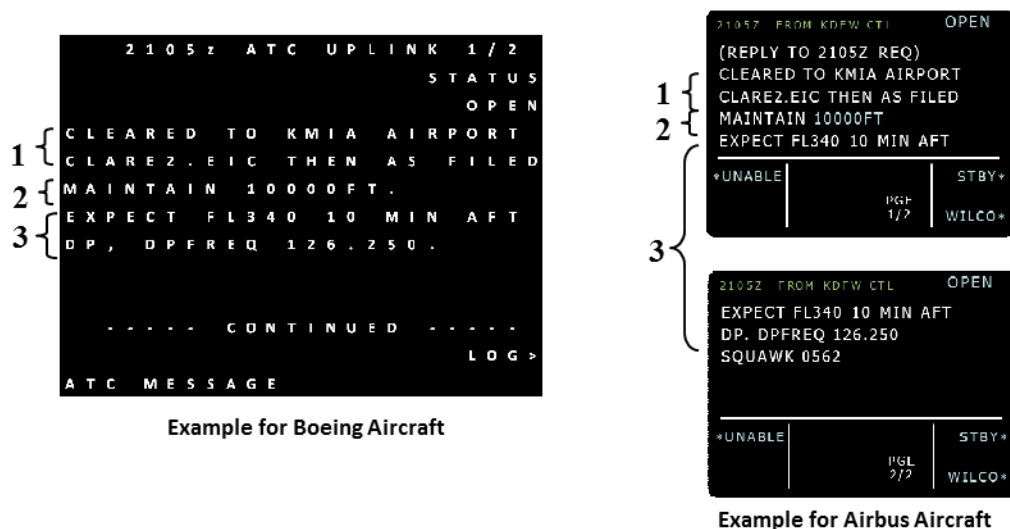
Example for Airbus Aircraft

Figure 13. Depiction of CPDLC-DCL including "THEN AS FILED"

1. In the example shown in Figure 13, no changes have been made to the AOC Dispatch "Filed" ATC flight plan:

    a. "CLEARED TO KMIA AIRPORT" indicates the clearance to the destination airport. This is followed by;

    b. "CLARE2.EIC", DP (manually entered by the flight crew) that includes a transition fix which will connect to the ATC filed route of flight, followed by:

    c. "THEN AS FILED", will be appended after the DP/transition fix. Crew should use their flight plan to ensure the filed ATC route is inserted/loaded into the FMS and then verify the cleared route per company procedures.

2. "MAINTAIN 10000FT."

    a. This will be the "Initial" cleared altitude if included, otherwise crews can expect "CLIMB VIA SID" or "CLIMB VIA SID EXCEPT MAINT 8000 FT".

    If a "CLIMB VIA SID" is included in the clearance, then there is a vertical profile associated with the DP. Altitude and/or speed restrictions remain in force unless ATC amends the departure profile.

3. "EXPECT FL340 10 MIN AFT DP DPFREQ 126.250"

    a. EXPECT altitudes are provided and should be verified against the filed flight plan. No revision notice will be provided if it is different from the filed flight plan.

        1) If different from filed, use standard company procedures to determine if acceptable.

b. Departure frequency may be provided and should be verified against the departure page, if available.

6.2   CPDLC-DCL – Full Route Clearance – FMS Loadable

When the filed flight plan does not exactly match the ATC provided clearance, the controller will provide the flight crew with a FMS loadable full route clearance.

Full Route Clearance is also used when a revised departure clearance is not able to join with the originally cleared route of flight. In this case, the uplinked message format in Figure 14 would be used for re-routes. Prior to executing the revised routing, flight crews should:

- Review the CPDLC-DCL
- Load the amended clearance into the FMS
- Review the modified route with the new DP, transition and RWY before performing a FMS execute function
- Based on company procedures, either Accept/WILCO or Reject/UNABLE the revised clearance

Example for Boeing aircraft

Example for A320/A330/A340 aircraft

Figure 14. Depiction of CPDLC-DCL including a full route clearance

1. "CLEARED ROUTE CLEARANCE" or "CLEARED", as shown in Figure 14, indicates that there has been an amendment to the filed flight plan or a "THEN AS FILED" clearance from the controller is not available and a fully loadable FMS clearance is available for review.

   Note: "+LOAD NEW RTE TO KMIA+" is a reminder to the flight crew to load the route via the load PROMPT and manually insert the DP, transition and runway if necessary before executing the amendment.

   Note: "Then As Filed" is not included in this departure clearance and the onboard flight plan does not exactly match the FMS loaded clearance. Use company procedures to verify new route when changes to the filed flight plan occur.

2. Load prompt allows the flight crew to load the ATC clearance into the FMS. Flight crews must load the ATC provided cleared route and manually insert the DP/transition into the FMS using standard operating procedures and review the clearance prior to accepting it.
3. "Squawk" should be selected in the transponder panel.

6.3 Change in Departure Procedure – Partial Reroute - Connect Downstream Clearance – FMS Loadable

A revised clearance that contains a change to only the initial portion of the flight plan and is intended to connect to a position or point on the loaded active FMS route is depicted as "CLEARED TO position VIA ROUTE CLEARANCE", with a loadable clearance, and followed by "REST OF ROUTE IS UNCHANGED *OR* THEN AS FILED". Prior to executing the revised routing, flight crews should:

- Review the CPDLC-DCL
- Load the amended clearance into the FMS
- Review the modified route with the new DP, transition and RWY before performing a FMS execute function
- Based on company procedures, either Accept/WILCO or Reject/UNABLE the revised clearance
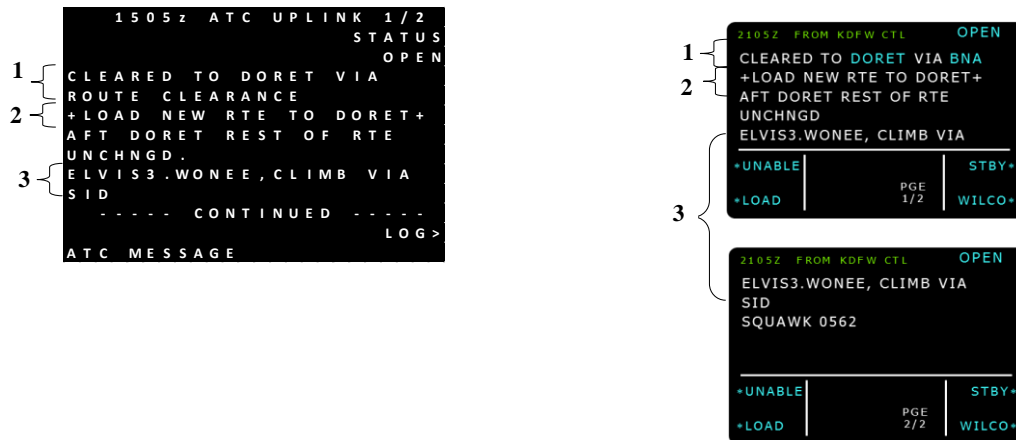
Figure 15. Depiction of Revised CPDLC-DCL including "REST OF ROUTE UNCHANGED"

1. <u>CLEARED TO DORET VIA ROUTE CLEARANCE or CLEARED TO DORET VIA BNA</u>

    In this example, the controller has received an amendment to the previously cleared ATC clearance which connects up to the downstream waypoint DORET. "VIA ROUTE CLEARANCE" or VIA BNA is the loadable portion of the clearance.

2. <u>+LOAD NEW RTE TO DORET+</u>

    In this example, a flight crew awareness phrase is included to highlight that the uplinked CPDLC-DCL contains FMS loadable information that must be inserted into the FMS via the load prompt by the flight crew. No revised header tag will be shown for uplinks that have the flight crew awareness phrase. See revised information section for information related concerning CPDLC-DCL revisions.

3. <u>ELVIS3.WONEE, AFTER DORET REST OF ROUTE UNCHANGED</u>

    <u>ELVIS3.WONEE</u> is a departure procedure manually inserted in to the FMS.

    <u>AFTER DORET</u> "REST OF ROUTE UNCHANGED" indicates to the flight crew that they are cleared via their original/previously cleared departure clearance after DORET to destination.

6.4 **Free Text Route Information for Departure Clearances with Loadable Route Information**

For uplinks with FMS loadable routes, a FAA produced route string representing the CLEARED ROUTE is added at the end of the CPDLC-DCL message. This supplemental information assists flight crews in route and leg verification procedures. The route string will be proceeded by 5 dashes and a single space and is limited to 256 characters (e.g., ----- KSLC LEETZ2.OCS KURSE Q122 ONL J94 FOD KG75M DAFLU J70 LVZ LENDY6 KJFK). In the event the FAA produced route string exceeds 256 characters, then the free text

route will be truncated with a "./." with the destination airport as the last piece of information e.g., J70 LVZ ./. KJFK.

> Note: When a DP and/or arrival transition has a period between the procedure name and the fix it is considered a named transition e.g., KSLC LEETZ2.OCS.

The following information should be considered when reviewing the free text route information:

- The loaded CPDLC-DCL clearance in the FMS is your ATC clearance and the free text at the end of your CPDLC-DCL is a means to cross-check the FMS loaded clearance. The Free Text route information is not loadable and may result in lengthy displayed messages (multiple pages to scroll through to reach the end of the uplink message).
- If the free text route information is different from the FMS loaded CPDLC-DCL message, then the flight crew should contact ATC clearance delivery to discuss any discrepancies.
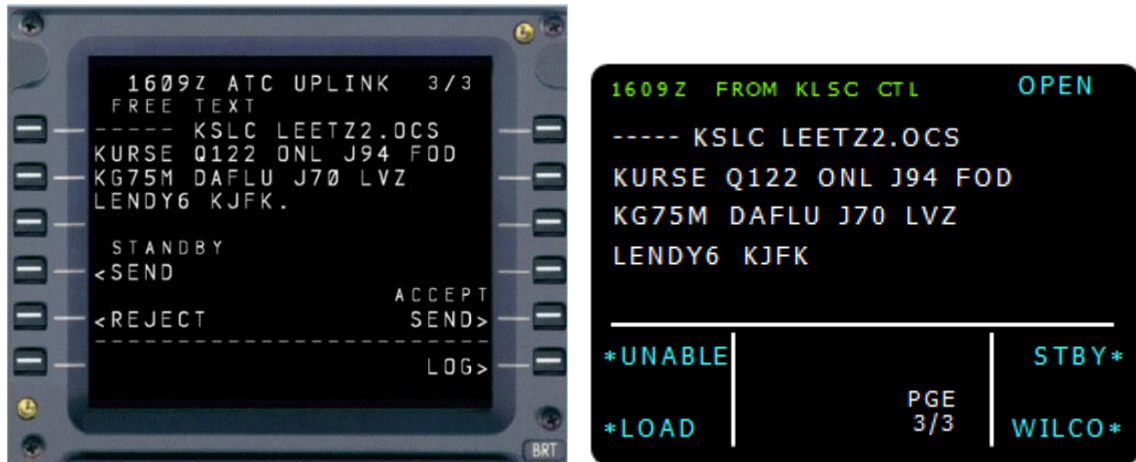

Figure 16. Supplementary Route Information for Loadable Departure Clearances

6.5   REVISED Departure Clearance – Non-Loadable Route Information

When an uplinked revised clearance is received with non-route information, it is shown to the flight crew as "Free Text". As needed by ATC, a revised header tag is populated with updated information for the flight crew. Only revised information is included in this header.

Possible revised header tags that may be attached to a revised departure clearance include: DP, ALT, EXP ALT, DEP FREQ, EDCT, or SQUAWK.

Example on Boeing aircraft

Example on A320/A330/A340

Figure 17. Depiction of a Revised Departure Clearance – Non-Loadable Route Information

Appendix A: B777 CPDLC-DCL Procedure Examples

Flight Crew Procedures for CPDLC-DCL – B777

Audible Chime with EICAS • **ATC**	Responding to an Uplinked Clearance
ATC Function Key………………………………………Select View the message and act appropriately on the message. <u>Verify the Altitude and Squawk as part of the uplinked Clearance.</u>	☐ ATC MCDU Key………………………………………Select Return to the ATC Communication message and after the flight crew agrees with the ATC Departure Clearance and have verified route upload to the FMC ☐ ACCEPT …………………………………………………Select Standby, Reject are also available response as needed by the flight crew
Request a Departure Clearance (DCL*), If required*	**Manual Entry of DP and Runway**
☐ ATC MCDU Key…………………………………Select ☐ Clearance 4R……………………………………Select ☐ REQUEST CLEARANCE…………………………Select ☐ SEND……………………………………………Select	☐ Dept/ARR………………………………………………Select ☐ RWY………………………………………………………Select ☐ Procedure………………………………………………Select ☐ Transition………………………………………………Select ☐ RTE…………………………………………………..Select Verify the appropriate Departure Procedure, Runway and Transition are correct against the departure clearance with no Route Discontinuities ☐ Execute………………………………………………Select
Loading and Verifying an FMS uplinked CPDLC-DCL	**LEGS Page / Distance check for Uplinked DCL**

☐ Load……………………………………………Select
LOAD prompt automatically updates FMC RTE page with route clearance information.
☐ FMC RTE ……………………………………………Select
☐ Verify ………………………………………DEPT Airport
☐ Verify …………………………………………DEST Airport
☐ Verify …………………………………………..Runway If part of the Uplinked Clearance, otherwise this is a manual entry
☐ Verify ……………………………………………FLT NO: For Example:CAL123
☐ Verify……………………………………Cleared Route The Departure Procedure and Runway will require manual entry if provided
☐ Activate………………………………………….Select
☐ EXEC …………………………………………………Select to complete the RTE page upload
	☐ LEGS …………………………………………………Select
	☐ Map Mode…………………………………………Select
	Step through the legs page using "Step" at 6R and observe on the Navigation Display:
	    ○ Waypoints and Altitude constraints agree with those on the filed flight plan and navigation charts, and
	    ○ No discontinuities exist between waypoints
	☐ Verify that an active waypoint is depicted in 1L on LEGS page 1
	☐ Verify the total route distance is proper for route of flight versus the filed flight plan

Appendix B: Airbus CPDLC-DCL Procedure Examples

Flight Crew Procedures for CPDLC-DCL – A320/A330/A340

Ring tone with ATC MSG lights flashing (Uplink message displayed on DCDU)	Responding to an Uplinked Clearance
☐ ATC MSG p/b .... Press This will turn of the lights and stop aural alert View the message and act appropriately on the message. Verify the Altitude and Squawk as part of the uplinked Clearance.	On DCDU Review the ATC message. After the flight crew agrees with the ATC Departure Clearance and have verified route upload in the FMS: ☐ WILCO .... Select STBY or UNABLE are also available answer as needed by the flight crew ☐ SEND .... Select
Request a Departure Clearance , _if required_	**Manual Entry of DP and Runway**
On MCDU ☐ ATC COM key ....Select ☐ OTHER REQ (2R)................................Select ☐ CLEARANCE (3L)................................Select ☐ ATC REQ DISPLAY (6R) ....Select On DCDU ☐ SEND ....Select Depending on A/C version, it may be necessary to manually close the request selecting CLOSE (2R) after sending.	On MCDU ☐ Departure airport on F-PLN page ....Select ☐ DEPARTURE (1L) ....Select ☐ RWY ....Select ☐ SID ....Select ☐ TRANS ....Select ☐ On the resulting temporary flight plan, verify the appropriate Departure Procedure, Runway and Transition are correct against the departure clearance and there is no Route Discontinuities. ☐ INSERT (6R) or TMPY INSERT (6R)................... Select
Loading and Verifying an FMS uplinked departure clearance	**F-PLN Page / Distance check for Uplinked DCL**

On DCDU
☐ LOAD..Select
Depending on FANS version, it may be necessary to select OTHER before, to display the LOAD prompt.
 	
LOAD automatically updates the FMS SECONDARY F-PLN with route clearance information.
 	
On MCDU
☐ SEC F-PLN key ....Select
☐ SEC F-PLN (2L)...................................Select
☐ Verify .... ORIGIN Airport
☐ Verify ....DEST Airport
☐ Verify ....Runway
If part of the Uplinked Clearance, otherwise this is a manual entry
☐ Verify ....Cleared Route
The Departure Procedure will require manual entry and Runway selection based on field conditions
☐ SEC F-PLN key on MCDU...................................Select
☐ ACTIVATE SEC (4L) .... Select
to activate the secondary flight plan as the active flight plan.
	☐ F-PLN key on MCDU .... Select
	☐ PLAN Mode on EFIS Control Panel .... Select
	Scroll along the F-PLN and observe on the Navigation Display and F-PLN page:
	  ○ Waypoints and Altitude constraints agree with those on the filed flight plan and navigation charts if your departure clearance is a "CLEARED AS FILED" clearance, and
	  ○ No discontinuities exist between waypoints
	☐ Verify the total route distance is proper for route of flight versus the filed flight plan
	
	Note: in Airbus SOP, it is recommended to select STBY, then LOAD and finally WILCO or UNABLE depending on the flight crew decision to accept or reject the clearance.

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