



The European Organisation for Civil Aviation Equipment
L'Organisation Européenne pour l'Équipement de l'Aviation Civile

Change 2
-to-
EUROCAE ED-120

**SAFETY AND PERFORMANCE REQUIREMENTS STANDARD FOR
AIR TRAFFIC DATA LINK SERVICES IN CONTINENTAL AIRSPACE
(CONTINENTAL SPR STANDARD)**

Change 2 to ED-120
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SUMMARY OF CHANGES

Change 2 to ED-120/DO 290, Safety and Performance Requirements Standard for Air Traffic Data Link Services in Continental Airspace, is to clarify the scope of the CPDLC message set that will be used for continental data link services. It includes changes resulting from work on the ICAO Technical Provisions of the Aeronautical Telecommunication Network (ATN), the ATN Baseline 1 definition, and the interoperability solution for ATN B1 ground systems to provide continental data link services to operators with FANS 1/A aircraft.

Change 2 to ED-120/DO 290 is summarized as follows:

Description of change	Affected pages, paragraphs, and tables
Replace paragraph 5.6 with the contents of this change package. New 5.6.1 provides the CPDLC message set for continental data link services	Pages 154-165 Paragraph 5.6 (Revised), CPDLC Messages Introductory paragraph (New) Paragraph 5.6.1 (New), CPDLC message elements for continental data link service Notes (New) Table 5-54 (Revised), CPDLC uplink message elements Table 5-55 (Revised), CPDLC downlink message elements
New 5.6.2 added guidelines and criteria for use of message elements that specify a level within a vertical range.	Pages (New) Paragraph 5.6.2 (New), Message elements that specify a level within a vertical range Table 5-56 (New), Message Elements that specify level within a vertical range
New 5.6.3 added guidelines and criteria for use of free text.	Pages (New) Paragraph 5.6.3 (New), Use of free text Table 5-57 (New)
New 5.6.4 added guidelines and criteria for the use of certain message elements by some aircraft for the establishment of CPDLC.	Pages (New) Paragraph 5.6.4 (New), Establishment of CPDLC Table 5-58 (New)
New 5.6.5 added guidelines and criteria for the processing of CPLDC emergency messages.	Pages (New) Paragraph 5.6.5 (New), Processing CPDLC emergency messages Table 5-59 (New)

5.6 CPDLC messages

The CPDLC message set for continental data link services is provided in [paragraph 5.6.1](#). This message set is based on a selection of message elements from the CPDLC message set defined in ICAO Doc 4444. Additional guidance and criteria are provided for the following:

- Use of message elements that specify a level within a vertical range ([paragraph 5.6.2](#));
- Use of free text ([paragraph 5.6.3](#));
- Establishment of CPDLC ([paragraph 5.6.4](#)); and
- Processing of CPDLC emergency messages ([paragraph 5.6.5](#)).

5.6.1 CPDLC message set for continental data link services

[Table 5-54](#) presents the CPDLC uplink message elements applicable to the ATC communication services in this document.

[Table 5-55](#) presents the CPDLC downlink message elements applicable to the ATC communication services in this document.

NOTE 1: The information provided in the message element reference number (Ref #), message intent/use, message element, and response attribute (Resp Attr) columns is taken from ICAO Doc 4444, Appendix 5. Some changes have occurred since the original publication of this standard. Additions and deletions are indicated in **bold** and ~~strikethrough~~, respectively. Definitions for the notations used in the Response Attribute column are as follows:

Resp Attr	Response required	Description
		For uplink messages
W/U	Yes	WILCO, UNABLE, STANDBY, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY, LOGICAL ACKNOWLEDGMENT (only if required), ERROR
A/N	Yes	AFFIRM, NEGATIVE, STANDBY, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY, LOGICAL ACKNOWLEDGMENT (only if required), ERROR
R	Yes	ROGER, UNABLE, STANDBY, NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY, LOGICAL ACKNOWLEDGMENT (only if required), ERROR
Y	Yes	Any CPDLC downlink message, LOGICAL ACKNOWLEDGEMENT (only if required)
N	No*	* unless logical acknowledgement required. LOGICAL ACKNOWLEDGMENT (only if required), NOT CURRENT DATA AUTHORITY, NOT AUTHORIZED NEXT DATA AUTHORITY, ERROR
		For downlink messages
Y	Yes	Any CPDLC uplink message, LOGICAL ACKNOWLEDGMENT (only if required)
N	No	LOGICAL ACKNOWLEDGMENT (only if required), SERVICE UNAVAILABLE, FLIGHT PLAN NOT HELD, ERROR

NOTE 2: 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. Given the FANS 1/A message set, this only affects the following message elements that are addressed in this standard: UM6, UM99, and UM169. See also [paragraph 5.6.3](#) for use of UM169.

NOTE 3: The Continental SPR Standard (Cont SPR) column indicates the status of the message element and the applicable data link services, with respect to the document change/revision level. In subsequent document revisions/changes, some of the message elements are no longer applicable (indicated as N/A), while others were added, or the applicable data link services changed.

NOTE 4: [Paragraph 5.6.2](#) provides criteria that is generally applicable to message elements that specify the [level] variable as a vertical range. This standard only considered those message elements listed in [Table 5-56](#) provided in [paragraph 5.6.2](#).

Table 5-54 : CPDLC application – uplink message elements

Ref #	Message Intent/Use	Message Element	Resp Attr	Cont SPR
	Responses/ Acknowledgments (uplink)			
UM 0	Indicates that ATC cannot comply with the request.	UNABLE	N	Initial All
UM 1	Indicates that ATC has received the message and will respond.	STANDBY	N	Initial All
UM 3	Indicates that ATC has received and understood the message.	ROGER	N	Initial All
UM 4	Yes.	AFFIRM	N	Initial All
UM 5	No	NEGATIVE	N	Initial All
UM 211	Indicates that the ATC has received the request and has passed it to the next control authority.	REQUEST FORWARDED	N	Initial ACL DSC Chg 2 ACL
UM 237	Indicates that the request cannot be responded to by the current unit and that it should be requested from the next unit.	REQUEST AGAIN WITH NEXT UNIT	N	Chg 1 All Chg 2 ACM
	Vertical Clearances (uplink)			
UM 6	Notification that a level change instruction should be expected.	EXPECT [level]	R	Initial ACL DSC DCL Chg 2 DCL

Table 5-54 : CPDLC application – uplink message elements (Continued)

Ref #	Message Intent/Use	Message Element	Resp Attr	Cont SPR
	Vertical Clearances (uplink) (Con't)			
UM 19	Instruction to maintain the specified level. <i>See paragraph 5.6.2 for intent/use when [level] is a vertical range.</i>	MAINTAIN [level]	W/U	Initial ACL DSC Chg 2 ACL
UM 20	Instruction that a climb to a specified level is to commence and once reached the specified level is to be maintained. <i>See paragraph 5.6.2 for intent/use when [level] is a vertical range.</i>	CLIMB TO [level]	W/U	Initial ACL DSC Chg 2 ACL
UM 21	Instruction that at the specified time a climb to the specified level is to commence and once reached the specified level is to be maintained.	AT [time] CLIMB TO [level]	W/U	Initial ACL DSC Chg 2 DSC
UM 22	Instruction that at the specified position a climb to the specified level is to commence and once reached the specified level is to be maintained.	AT [position] CLIMB TO [level]	W/U	Initial ACL DSC Chg 2 DSC
UM 185	(Reserved) ~~Instruction that after passing the specified position a climb to the specified level is to commence and once reached the specified level is to be maintained.~~ <i>ICAO DOC. 4444: 22-Nov-07 Change</i> <i>Note: This message element has been removed from message set supporting continental data link services.</i>	N/A ~~AFTER PASSING [position] CLIMB TO [level]~~	N/A	Initial ACL DSC Chg 2 N/A
UM 23	Instruction that a descent to a specified level is to commence and once reached the specified level is to be maintained. <i>See paragraph 5.6.2 for intent/use when [level] is a vertical range.</i>	DESCEND TO [level]	W/U	Initial ACL DSC Chg 2 ACL
UM 24	Instruction that at a specified time a descent to a specified level is to commence and once reached the specified level is to be maintained.	AT [time] DESCEND TO [level]	W/U	Initial ACL DSC Chg 2 DSC

Table 5-54 : CPDLC application – uplink message elements (Continued)

Ref #	Message Intent/Use	Message Element	Resp Attr	Cont SPR
	Vertical Clearances (uplink) (Con't)			
UM 25	Instruction that at the specified position a descent to the specified level is to commence and once reached the specified level is to be maintained.	AT [position] DESCEND TO [level]	W/U	Initial ACL DSC Chg 2 DSC
UM 186	(Reserved) ~~Instruction that after passing the specified position a descent to the specified level is to commence and once reached the specified level is to be maintained.~~ <i>ICAO DOC. 4444: 22-Nov-07 Change</i> <i>Note: This message element has been removed from message set supporting continental data link services.</i>	N/A ~~AFTER PASSING [position] DESCEND TO [level]~~	N/A	Initial ACL DSC Chg 2 N/A
UM 26	Instruction that a climb is to commence at a rate such that the specified level is reached at or before the specified time. When this message element is not concatenated with another vertical clearance the level specified is the assigned level which is to be maintained. <i>ICAO DOC. 4444: 22-Nov-07 Change</i>	CLIMB TO REACH [level] BY [time]	W/U	Initial ACL DSC
UM 27	Instruction that a climb is to commence at a rate such that the specified level is reached at or before the specified position. When this message element is not concatenated with another vertical clearance the level specified is the assigned level which is to be maintained. <i>ICAO DOC. 4444: 22-Nov-07 Change</i>	CLIMB TO REACH [level] BY [position]	W/U	Initial ACL DSC
UM 28	Instruction that a descent is to commence at a rate such that the specified level is reached at or before the specified time. When this message element is not concatenated with another vertical clearance the level specified is the assigned level which is to be maintained. <i>ICAO DOC. 4444: 22-Nov-07 Change</i>	DESCEND TO REACH [level] BY [time]	W/U	Initial ACL DSC

Table 5-54 : CPDLC application – uplink message elements (Continued)

Ref #	Message Intent/Use	Message Element	Resp Attr	Cont SPR
	Vertical Clearances (uplink) (Con't)			
UM 29	Instruction that a descent is to commence at a rate such that the specified level is reached at or before the specified position. When this message element is not concatenated with another vertical clearance the level specified is the assigned level which is to be maintained. <i>ICAO DOC. 4444: 22-Nov-07 Change</i>	DESCEND TO REACH [level] BY [position]	W/U	Initial ACL DSC
UM 209	Instruction that a change of level is to continue, but at a rate such that the specified level is reached at or before the specified position. <i>Note: This message element has been removed from message set supporting continental data link services.</i>	REACH [level] BY [position]	W/U	Initial ACL DSC Chg 2 N/A
UM 171	Instruction to climb at not less than the specified rate.	CLIMB AT [vertical rate] MINIMUM	W/U	Initial ACL DSC Chg 2 ACL
UM 172	Instruction to climb at not above the specified rate.	CLIMB AT [vertical rate] MAXIMUM	W/U	Initial ACL DSC Chg 2 ACL
UM 173	Instruction to descend at not less than the specified rate.	DESCEND AT [vertical rate] MINIMUM	W/U	Initial ACL DSC Chg 2 ACL
UM 174	Instruction to descend at not above the specified rate.	DESCEND AT [vertical rate] MAXIMUM	W/U	Initial ACL DSC Chg 2 ACL

Table 5-54 : CPDLC application – uplink message elements (Continued)

Ref #	Message Intent/Use	Message Element	Resp Attr	Cont SPR
	Crossing Constraints (uplink)			
UM 46	Instruction that the specified position is to be crossed at the specified level. This may require the aircraft to modify its climb or descent profile.	CROSS [position] AT [level]	W/U	Initial ACL DSC