

Annex D

CPDLC Air/Ground PICS/OICS



ATNP/WGA/WP A2/3/XX

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AERONAUTICAL TELECOMMUNICATION NETWORK PANEL

WORKING GROUP A SUBGROUP A2 (AIR/GROUND APPLICATIONS)

Airborne Controller Pilot Data Link Communication Edition 2 PICS/OICS **Proforma**

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SUMMARY

This working paper contains the OPLINKP Profile PICS/OICS proforma tables for CPDLC Airborne Version 1 (Doc 9705 Second Edition).

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Table I-1: PICS/OICS Identification

Ref No	PICS/OICS Identification	Implementation PICS/OICS
I-1.1	Date of Statement (DD/MM/YY)	
I-1.2	PICS/OICS Serial Number	
	Profile Identification	Profile Details
I-1.3	Profile Name	
I-1.4	Version	
I-1.5	Profile Authority Name	
I-1.6	Profile Applicability (Areas, Countries, Organisations etc where the profile can be applied)	
I-1.7	Date of effect	
I-1.8	Other Information	

Table I-2: Supplier and Implementation Identification

Ref No	Supplier Information	Supplier Details
I-2.1	Organization Name	
I-2.2	Contact Name(s)	
I-2.3	Address	
I-2.4	Telephone Number	
I-2.5	Telex Number	
I-2.6	Fax Number	
I-2.7	E-mail Address	
I-2.8	Other Information	
Implementation Information		
I-2.9	Implementation Name	
I-2.10	Implementation Version	
I-2.11	Hardware Name	
I-2.12	Hardware Version	
I-2.13	Operating System Name	
I-2.14	Operating System Version	
I-2.15	Special Configuration	
I-2.16	Other Information	

Table I-3: CPDLC Protocol Identification

Ref No		OPLINKP	Profile	Implementation
I-3.1	Protocol Standard (Title, reference, date)	ICAO Doc 9705 Second Edition - 1999		
I-3.2	CPDLC Protocol Version	Version 1		
I-3.3	Addenda, amendments and corrigenda implemented			
I-3.4	Defect Reports implemented			

Table S-1: CPDLC Protocol Options

Source: Chapter 8 - Subsetting Rules		OPLINKP	Profile	IMP	Associated	Notes
Ref No	Protocol Option	Status	Status	Support	Predicate	
S-1.1	CPDLC-air-ASE	M			CPDLC/air	
S-1.1.1	Air Initiated CPDLC Start	O			A-Start-Init	
S-1.2	CPDLC-ground-ASE	Not used by Airborne Systems			CPDLC/ground	
S-1.2.1	Ground Initiated CPDLC Start	Not used by Airborne Systems			G-Start-Init	
S-1.3	DSC function supported	O			DSC-FU	
S-1.4	DSC function supported by CPDLC-ground-user	Not used by Airborne Systems			DSC-USER	
S-1.5	Forward function supported by initiating user				FWD-INIT	
S-1.6	Forward function supported by receiving user				FWD-USER	

Table S-2: CPDLC-ASE Conformant Configurations

Source: Chapter 8 - Subsetting Rules		OPLINKP Profile Status	Profile Status	IMP Support	Notes
Ref No	List of Configurations: Ground ASE				
S-2.1	I. CPDLC/ground + DSC-FU	Not used by Airborne Systems			
S-2.2	II. CPDLC/ground + DSC-USER + DSC-FU				
S-2.3	III. CPDLC/ground + DSC-FU + FWD-INIT				
S-2.4	IV. CPDLC/ground + DSC-USER + FWD-INIT+ DSC-FU				
S-2.5	V. CPDLC/ground + DSC-FU + FWD-USER				
S-2.6	VI. CPDLC/ground + DSC-USER + FWD-USER+ DSC-FU				
S-2.7	VII. CPDLC/ground + DSC-FU + FWD-INIT + FWD-USER				
S-2.8	VIII. CPDLC/ground + DSC-USER + FWD-INIT + FWD-USER+ DSC-FU				
List of Configurations: Air ASE					
S-2.9	I CPDLC/air	C.1			
S-2.10	II CPDLC/air + DSC-FU	C.1			

Notes:

- C.1 One and only one configuration must be supported.

Table S-3: Supported CPDLC Service Primitives

Source: Chapter 3 - Abstract Service		Sender (req, [cnf])			Receiver (ind, [rsp])			Notes
Ref No	Service Primitives	OPLINKP Profile	Profile Status	IMP Support	OPLINKP Status	Profile Status	IMP Support	
S-3.1	CPDLC-start service	C.1			M			a, See S-4 and S-5
S-3.2	CPDLC-message service	M			M			See S-6
S-3.3	CPDLC-end service	—	—	—	M			See S-7
S-3.4	DSC-start service	C.2			—	—	—	See S-8
S-3.5	DSC-end service	C.2			—	—	—	See S-9
S-3.6	CPDLC-forward service	Not used by Airborne Systems						
S-3.7	CPDLC-user-abort	M			M			See S-12
S-3.8	CPDLC-provider-abort	—	—	—	M			See S-13

OPLINKP Profile:

- C.1 If Air Initiated CPDLC Start (A-Start-Init) supported then **M** else —
- C.2 If Down Stream Clearance (DSC-FU) supported then **M** else —

Notes:

- a Airborne initiation of CPDLC is dependent on regional requirements

Table S-4: Air Initiated CPDLC Start Service Parameters - Airborne User (Request, Confirmation)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons		
S-4.1	Capability of the airborne system to specify the contacted ground system with an ICAO Facility Designation							
S-4.1.1	Called Peer Identifier = IA5 String SIZE(4..8)	C.1						
S-4.2	Capability of the airborne system to specify its own Aircraft Address							
S-4.2.1	Calling Peer Identifier = Bit String SIZE(24)	C.1		—		—		
S-4.3	Capability of the airborne system to send a CPDLC message	C.2					See ATCDownlinkMessage (Table M-2)	
S-4.4	Capability of the airborne system to understand the reason for a CPDLC Start rejection	C.1					See ATCUplinkMessage (Table M-1)	
S-4.5	Capability of the airborne system to understand the result of the CPDLC Start request							
S-4.5.1	Accepted	C.1						
S-4.5.2	Rejected	C.1						
S-4.6	Capability of the airborne system to request a Class of Communication Service for a CPDLC dialogue							
S-4.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.2						

OPLINKP Profile:

- C.1 If Air Initiated CPDLC Start (A-Start-Init) supported then **M** else —
C.2 If Air Initiated CPDLC Start (A-Start-Init) supported then **O** else —

Table S-5: Ground Initiated CPDLC Start Service Parameters - Airborne User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile		Implementation			
			Status	Cons	Status	Cons		
S-5.1	Called Peer Identifier	Not visible to Airborne User						
S-5.1.1	Aircraft Address = Bit String SIZE(24)							
S-5.2	Capability of the airborne system to understand the calling ground system's ICAO Facility Designation							
S-5.2.1	Calling Peer Identifier = IA5 String SIZE(4..8)	M						
S-5.3	Capability of the airborne system to receive a CPDLC message	M					See ATCUplinkMessage (Table M-1)	
S-5.4	Capability of the airborne system to specify the reason for the CPDLC Start rejection	M					See ATCDownlinkMessage (Table M-2)	
S-5.5	Capability of the airborne system to specify the result of the CPDLC Start request							
S-5.5.1	Accepted	M						
S-5.5.2	Rejected	M						
S-5.6	Capability of the airborne system to understand a Class of Communication Service for a CPDLC dialogue							
S-5.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	M						

Table S-6: CPDLC Message Service Parameters - Airborne User (Request, Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
S-6.1	Capability of the airborne system to send or receive a CPDLC message							
S-6.1.1	Request	M					See ATCDownlinkMessage (Table M-2)	
S-6.1.2	Indication	M					See ATCUplinkMessage (Table M-1)	

Table S-7: CPDLC End Service Parameters - Airborne User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Status	Cons	Implementation Status	Cons		
S-7.1	Capability of the airborne system to receive or send a CPDLC message in an End Service							
S-7.1.1	Indication	M					See ATCUplinkMessage (Table M-1)	
S-7.1.2	Response	O					See ATCDownlinkMessage (Table M-2)	
S-7.2	Capability of the airborne system to specify the result of the CPDLC End indication							
S-7.2.1	Accepted	M						
S-7.2.2	Rejected	O						

Table S-8 : DSC Start Service Parameters - Airborne User (Request, Confirmation)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Status	Profile Cons	Implementation Status	Cons		
S-8.1	Capability of the airborne system to specify the contacted ground system with an ICAO Facility Designation							
S-8.1.1	Called Peer Identifier = IA5 String SIZE(4..8)	C.1						
S-8.2	Capability of the airborne system to specify its own Aircraft Address							
S-8.2.1	Calling Peer Identifier = Bit String SIZE(24)	C.1		—		—		
S-8.3	Capability of the airborne system to send a CPDLC message	C.2					See ATCDownlinkMessage (Table M-2)	
S-8.4	Capability of the airborne system to understand the reason for a DSC Start rejection	C.1					See ATCUplinkMessage (Table M-1)	
S-8.5	Capability of the airborne system to understand the result of the DSC Start request							
S-8.5.1	Accepted	C.1						
S-8.5.2	Rejected	C.1						
S-8.6	Capability of the airborne system to request a Class of Communication Service for a DSC dialogue							
S-8.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.2						

OPLINKP Profile:

- C.1 If Downstream Clearance (DSC-FU) supported then **M** else —
C.2 If Downstream Clearance (DSC-FU) supported then **O** else —

Table S-9: DSC End Service Parameters - Airborne User (Request, Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Status	Cons	Implementation Status	Cons		
S-9.1	Capability of the airborne system to send a CPDLC message in a DSC End Service request							
S-9.1.1	Downlink message	C.2					See ATCDownlinkMessage (Table M-2)	
S-9.2	Capability of the airborne system to receive a CPDLC uplink message in an DSC End Service Confirmation							
S-9.2.1	Uplink message	C.1					See ATCUplinkMessage (Table M-1)	
S-9.3	Capability of the airborne system to understand the result of the DSC End request							
S-9.3.1	Accepted	C.1						
S-9.3.2	Rejected	C.2						

OPLINKP Profile:

- C.1 If Downstream Clearance (DSC-FU) supported then **M** else —
 C.2 If Downstream Clearance (DSC-FU) supported then **O** else —

Table S-12: CPDLC User Abort Service Parameters - Airborne User (Request, Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Profile		Implementation			
			Status	Cons	Status	Cons		
S-12.1	Capability of the airborne system to specify the reason for a user abort	M					See CPDLCUserAbortReason (Table M-2)	
S-12.2	Capability of the airborne system to understand the reason for a user abort	M					See CPDLCUserAbortReason (Table M-1)	

Table S-13: CPDLC Provider Abort Service Parameters - Airborne User (Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
Ref No	Operational Elements							
S-13.1	Capability of the airborne system to understand the reason for a provider abort	M					See CPDLCProviderAbortReason (Table M-1)	

Table S-14: CPDLC Technical Timers - Airborne ASE

Source: Chapter 5 - Protocol Definition			OICS						Notes
			Operational Use						
Ref No	CPDLC Service	Timer	Status	OPLINKP Recommended Value	Status	Profile Recommended Value	Status	Implementation Value Used	
S-14.1	CPDLC-Start	t-start	C.1	6 minutes					
S-14.2	DSC-Start	t-start	C.2	6 minutes					
S-14.3	CPDLC-Forward	t-start	Not used by Airborne Systems						

OPLINKP Profile:

- C.1 If Air Initiated CPDLC Start (A-Start-Init) supported then **M** else —
- C.2 If DSC-FU supported then **M** else —

Table M-1: Ground Generated Messages

Source: Chapter 4 - ASN.1		Receive					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-1.1	Ground PDUs						Ground PDUs ::= CHOICE	
M-1.1.1	User Abort	M					[0] CPDLCUserAbortReason	
M-1.1.2	Provider Abort	M					[1] CPDLCProviderAbortReason	
M-1.1.3	Start Up Message	O					[2] UplinkMessage	
M-1.1.4	ATC Uplink Message	M					[3] ATCUplinkMessage	
M-1.1.5	Forward Message	Not sent to Airborne Systems					[4] ATCForwardMessage	See M-9
M-1.1.6	Forward Response						[5] ATCForwardResponse	See M-10
M-1.1.7	Use of Extensibility	M					Use of Extensibility	
M-1.1.1	CPDLC User Abort Reason						CPDLCUserAbortReason ::= ENUMERATED	
M-1.1.1.1	Undefined	M					(0) Undefined	
M-1.1.1.2	No message identification numbers available	M					(1) no-message-identification-numbers-available	
M-1.1.1.3	Duplicate message identification numbers	M					(2) duplicate-message-identification-numbers	
M-1.1.1.4	No longer next data authority	—	—	—	—	—	(3) no-longer-next-data-authority	
M-1.1.1.5	Current data authority abort	M					(4) current-data-authority-abort	
M-1.1.1.6	Commanded termination	M					(5) commanded-termination	
M-1.1.1.7	Invalid response	M					(6) invalid-response	
M-1.1.1.8	Use of Extensibility	M					Use of Extensibility	
M-1.1.2	CPDLC Provider Abort Reason						CPDLCProviderAbortReason ::= ENUMERATED	
M-1.1.2.1	Timer expired	M					(0) timer-expired	
M-1.1.2.2	Undefined error	M					(1) undefined-error	
M-1.1.2.3	Invalid PDU	M					(2) invalid-PDU	
M-1.1.2.4	Protocol Error	M					(3) protocol-error	
M-1.1.2.5	Communication service error	M					(4) communication-service-error	
M-1.1.2.6	Communication service failure	M					(5) communication-service-failure	
M-1.1.2.7	Invalid QOS parameter	M					(6) invalid-QOS-parameter	
M-1.1.2.8	Expected PDU missing	M					(7) expected-PDU-missing	
M-1.1.2.9	Use of Extensibility	M					Use of Extensibility	
M-1.1.3	Uplink Message						UplinkMessage ::= CHOICE	
M-1.1.3.1	No Message	M					[0] NULL	
M-1.1.3.2	ATC Uplink Message	O					[1] ATCUplinkMessage	
M-1.1.4	ATC Uplink Message						ATCUplinkMessage ::= SEQUENCE	
M-1.1.4.1	ATC Message Header	M					ATCMessageHeader	See M-3
M-1.1.4.2	ATC Uplink Message Data	M					ATCUplinkMessageData	
M-1.1.4.2	ATC Uplink Message Data						ATCUplinkMessageData ::= SEQUENCE	
M-1.1.4.2.1	Uplink Message Elements (1 - 5 elements)	M					SEQUENCE SIZE (1..5) OF ATCUplinkMsgElementId	See M-4 and M-7
M-1.1.4.2.2	Constrained Data	M					SEQUENCE (OPTIONAL)	
M-1.1.4.2.2.1	Route Clearance Data (1 - 2 items)	M					SEQUENCE SIZE (1..2) OF RouteClearance (OPTIONAL)	See P-19
M-1.1.4.2.2.2	Use of Extensibility	M					Use of Extensibility	

Table M-2: Aircraft Generated Messages

Source: Chapter 4 - ASN.1		Send					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status			
M-2.1	Aircraft PDUs						Aircraft PDUs ::= CHOICE	
M-2.1.1	User Abort	M					[0] CPDLCUserAbortReason	
M-2.1.2	Provider Abort	M					[1] CPDLCProviderAbortReason	
M-2.1.3	Start Down Message	C.1					[2] StartDownMessage	
M-2.1.4	ATC Downlink Message	M					[3] ATCDownlinkMessage	
M-2.1.5	Use of Extensibility	X					Use of Extensibility	
M-2.1.1	CPDLC User Abort Reason						CPDLCUserAbortReason ::= ENUMERATED	
M-2.1.1.1	Undefined	M					(0) Undefined	
M-2.1.1.2	No message identification numbers available	M					(1) no-message-identification-numbers-available	
M-2.1.1.3	Duplicate message identification numbers	M					(2) duplicate-message-identification-numbers	
M-2.1.1.4	No longer next data authority	M					(3) no-longer-next-data-authority	
M-2.1.1.5	Current data authority abort	M					(4) current-data-authority-abort	
M-2.1.1.6	Commanded termination	O					(5) commanded-termination	
M-2.1.1.7	Invalid response	M					(6) invalid-response	
M-2.1.1.8	Use of Extensibility	X					Use of Extensibility	
M-2.1.2	CPDLC Provider Abort Reason						CPDLCProviderAbortReason ::= ENUMERATED	
M-2.1.2.1	Timer expired	C.1					(0) timer-expired	
M-2.1.2.2	Undefined error	M					(1) undefined-error	
M-2.1.2.3	Invalid PDU	M					(2) invalid-PDU	
M-2.1.2.4	Protocol Error	M					(3) protocol-error	
M-2.1.2.5	Communication service error	M					(4) communication-service-error	
M-2.1.2.6	Communication service failure	M					(5) communication-service-failure	
M-2.1.2.7	Invalid QOS parameter	M					(6) invalid-QOS-parameter	
M-2.1.2.8	Expected PDU missing	M					(7) expected-PDU-missing	
M-2.1.2.9	Use of Extensibility	X					Use of Extensibility	
M-2.1.3	Start Down Message						StartDownMessage ::= SEQUENCE	
M-2.1.3.1	Mode	O					Mode DEFAULT cpdlc	
M-2.1.3.2	Downlink Message	O					DownlinkMessage	
M-2.1.3.1	Mode						Mode ::= ENUMERATED	
M-2.1.3.1.1	CPDLC	O					(0) cpdlc	
M-2.1.3.1.2	DSC	C.2					(1) dsc	
M-2.1.3.2	Downlink Message						DownlinkMessage ::= CHOICE	
M-2.1.3.2.1	No Message	C					[0] NULL	
M-2.1.3.2.2	ATC Downlink Message	C					[1] ATCDownlinkMessage	
M-2.1.4	ATCDownlinkMessage						ATCDownlinkMessage ::= SEQUENCE	
M-2.1.4.1	ATC Message Header	M					ATCMessageHeader	See M-3
M-2.1.4.2	ATC Downlink Message Data	M					ATCDownlinkMessageData	
M-2.1.4.2	ATC Downlink Message Data						ATCDownlinkMessageData ::= SEQUENCE	
M-2.1.4.2.1	Downlink Message Elements (1 - 5 messages)	M					SEQUENCE SIZE (1..5) OF ATCDownlinkMsgElementId	See M-5 and M-6
M-2.1.4.2.2	Constrained Data	O					SEQUENCE (OPTIONAL)	
M-2.1.4.2.2.1	Route Clearance Data	O					SEQUENCE SIZE (1..2) OF RouteClearance (OPTIONAL)	See P-19

Source: Chapter 4 - ASN.1		Send					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status			
M-2.1.4.2.2.2	Use of Extensibility	X					Use of Extensibility	

OPLINKP Profile:

- C.1 If Air Initiated CPDLC Start (A-Start-Init) supported then **M** else —
 C.2 If Down Stream Clearance (DSC-User) supported then **M** else —

Table M-3: Uplink and Downlink Messages Common Elements

Source: Chapter 4 - ASN.1		Send					Receive					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-3.1	ATC Message Header											ATCMessageHeader ::= SEQUENCE	
M-3.1.1	Message Identification Number	M					M					[0] MessageIdentificationNumber	
M-3.1.2	Message Reference Number	M					M					[1] MsgReferenceNumber	a
M-3.1.3	Date and Time	M					M					[2] DateTimeGroup	
M-3.1.4	Logical Acknowledgment Request	O					M					[3] LogicalAck DEFAULT notRequired	
M-3.1.1	MsgIdentificationNumber											INTEGER Value (0..63)	
M-3.1.2	MsgReferenceNumber											INTEGER Value (0..63)	
M-3.1.3	Date and Time Group											DateTimeGroup ::= SEQUENCE	
M-3.1.3.1	date	M					M					Date	
M-3.1.3.2	timehhmmss	M					M					Timehhmmss	
M-3.1.3.1	Date											Date ::= SEQUENCE	
M-3.1.3.1.1	year	M					M					Year	
M-3.1.3.1.2	month	M					M					Month	
M-3.1.3.1.3	day	M					M					Day	
M-3.1.3.1.1	Year (1996 to 2095)											INTEGER Value (1996..2095)	
M-3.1.3.1.3	Day of the month (1 to 31)											INTEGER Value (1..31)	
M-3.1.3.1.2	Month of the year (1 to 12)											INTEGER Value (1..12)	
M-3.1.3.2	Timehhmmss											Timehhmmss ::= SEQUENCE	
M-3.1.3.2.1	hours and minutes	M					M					Time	See P-24
M-3.1.3.2.2	seconds	M					M					TimeSeconds	
M-3.1.3.2.2	TimeSeconds											INTEGER Value (0..59)	
M-3.1.4	LogicalAck											LogicalAck ::= ENUMERATED	
M-3.1.4.1	Required	O					M					(0) required	
M-3.1.4.2	Not Required	M					M					(1) notRequired	

Notes:

- a Element must be supported, only optional in ASN.1 as it is only present in PDUs containing responses

Table M-4: Uplink Message Elements

Source: Chapter 4 - ASN.1		Receive					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-4	Uplink Message Elements						ATCUplinkMsgElementId ::= CHOICE	
M-4.0	UM0 UNABLE	O					[0] NULL	
M-4.1	UM1 STANDBY	O					[1] NULL	
M-4.2	UM2 REQUEST DEFERRED	O					[2] NULL	
M-4.3	UM3 ROGER	O					[3] NULL	
M-4.4	UM4 AFFIRM	O					[4] NULL	
M-4.5	UM5 NEGATIVE	O					[5] NULL	
M-4.6	UM6 EXPECT [level]	O					[6] Level	See P-14
M-4.7	UM7 EXPECT CLIMB AT [time]	O					[7] Time	See P-24
M-4.8	UM8 EXPECT CLIMB AT [position]	O					[8] Position	See P-15
M-4.9	UM9 EXPECT DESCENT AT [time]	O					[9] Time	See P-24
M-4.10	UM10 EXPECT DESCENT AT [position]	O					[10] Position	See P-15
M-4.11	UM11 EXPECT CRUISE CLIMB AT [time]	O					[11] Time	See P-24
M-4.12	UM12 EXPECT CRUISE CLIMB AT [position]	O					[12] Position	See P-15
M-4.13	UM13 AT [time] EXPECT CLIMB TO [level]	O					[13] TimeLevel	See M-8
M-4.14	UM14 AT [position] EXPECT CLIMB TO [level]	O					[14] PositionLevel	See M-8
M-4.15	UM15 AT [time] EXPECT DESCENT TO [level]	O					[15] TimeLevel	See M-8
M-4.16	UM16 AT [position] EXPECT DESCENT TO [level]	O					[16] PositionLevel	See M-8
M-4.17	UM17 AT [time] EXPECT CRUISE CLIMB TO [level]	O					[17] TimeLevel	See M-8
M-4.18	UM18 AT [position] EXPECT CRUISE CLIMB TO [level]	O					[18] PositionLevel	See M-8
M-4.19	UM19 MAINTAIN [level]	O					[19] Level	See P-14
M-4.20	UM20 CLIMB TO [level]	O					[20] Level	See P-14
M-4.21	UM21 AT [time] CLIMB TO [level]	O					[21] TimeLevel	See M-8
M-4.22	UM22 AT [position] CLIMB TO [level]	O					[22] PositionLevel	See M-8
M-4.23	UM23 DESCEND TO [level]	O					[23] Level	See P-14
M-4.24	UM24 AT [time] DESCEND TO [level]	O					[24] TimeLevel	See M-8
M-4.25	UM25 AT [position] DESCEND TO [level]	O					[25] PositionLevel	See M-8
M-4.26	UM26 CLIMB TO REACH [level] BY [time]	O					[26] LevelTime	See M-8
M-4.27	UM27 CLIMB TO REACH [level] BY [position]	O					[27] LevelPosition	See M-8
M-4.28	UM28 DESCEND TO REACH [level] BY [time]	O					[28] LevelTime	See M-8
M-4.29	UM29 DESCEND TO REACH [level] BY [position]	O					[29] LevelPosition	See M-8
M-4.30	UM30 MAINTAIN BLOCK [level] TO [level]	O					[30] LevelLevel	See M-8
M-4.31	UM31 CLIMB TO AND MAINTAIN BLOCK [level] TO [level]	O					[31] LevelLevel	See M-8
M-4.32	UM32 DESCEND TO AND MAINTAIN BLOCK [level] TO [level]	O					[32] LevelLevel	See M-8
M-4.33	UM33 Reserved	X					[33] NULL	See M-5
M-4.34	UM34 CRUISE CLIMB TO [level]	O					[34] Level	See P-14
M-4.35	UM35 CRUISE CLIMB ABOVE [level]	O					[35] Level	See P-14
M-4.36	UM36 EXPEDITE CLIMB TO [level]	O					[36] Level	See P-14
M-4.37	UM37 EXPEDITE DESCENT TO [level]	O					[37] Level	See P-14
M-4.38	UM38 IMMEDIATELY CLIMB TO [level]	O					[38] Level	See P-14
M-4.39	UM39 IMMEDIATELY DESCEND TO [level]	O					[39] Level	See P-14
M-4.40	UM40 Reserved	X					[40] NULL	See M-5
M-4.41	UM41 Reserved	X					[41] NULL	See M-5
M-4.42	UM42 EXPECT TO CROSS [position] AT [level]	O					[42] PositionLevel	See M-8
M-4.43	UM43 EXPECT TO CROSS [position] AT OR ABOVE [level]	O					[43] PositionLevel	See M-8
M-4.44	UM44 EXPECT TO CROSS [position] AT OR BELOW [level]	O					[44] PositionLevel	See M-8
M-4.45	UM45 EXPECT TO CROSS [position] AT AND MAINTAIN [level]	O					[45] PositionLevel	See M-8

Source: Chapter 4 - ASN.1		Receive					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Status	Profile Cons	Implementation Status	Cons		
M-4.46	UM46 CROSS [position] AT [level]	O					[46] PositionLevel	See M-8
M-4.47	UM47 CROSS [position] AT OR ABOVE [level]	O					[47] PositionLevel	See M-8
M-4.48	UM48 CROSS [position] AT OR BELOW [level]	O					[48] PositionLevel	See M-8
M-4.49	UM49 CROSS [position] AT AND MAINTAIN [level]	O					[49] PositionLevel	See M-8
M-4.50	UM50 CROSS [position] BETWEEN [level] AND [level]	O					[50] PositionLevelLevel	See M-8
M-4.51	UM51 CROSS [position] AT [time]	O					[51] PositionTime	See M-8
M-4.52	UM52 CROSS [position] AT OR BEFORE [time]	O					[52] PositionTime	See M-8
M-4.53	UM53 CROSS [position] AT OR AFTER [time]	O					[53] PositionTime	See M-8
M-4.54	UM54 CROSS [position] BETWEEN [time] AND [time]	O					[54] PositionTimeTime	See M-8
M-4.55	UM55 CROSS [position] AT [speed]	O					[55] PositionSpeed	See M-8
M-4.56	UM56 CROSS [position] AT OR LESS THAN [speed]	O					[56] PositionSpeed	See M-8
M-4.57	UM57 CROSS [position] AT OR GREATER THAN [speed]	O					[57] PositionSpeed	See M-8
M-4.58	UM58 CROSS [position] AT [time] AT [level]	O					[58] PositionTimeLevel	See M-8
M-4.59	UM59 CROSS [position] AT OR BEFORE [time] AT [level]	O					[59] PositionTimeLevel	See M-8
M-4.60	UM60 CROSS [position] AT OR AFTER [time] AT [level]	O					[60] PositionTimeLevel	See M-8
M-4.61	UM61 CROSS [position] AT AND MAINTAIN [level] AT [speed]	O					[61] PositionLevelSpeed	See M-8
M-4.62	UM62 AT [time] CROSS [position] AT AND MAINTAIN [level]	O					[62] TimePositionLevel	See M-8
M-4.63	UM63 AT [time] CROSS [position] AT AND MAINTAIN [level] AT [speed]	O					[63] TimePositionLevelSpeed	See M-8
M-4.64	UM64 OFFSET [specifiedDistance] [direction] OF ROUTE	O					[64] DistanceSpecifiedDirection	See P-8
M-4.65	UM65 AT [position] OFFSET [specifiedDistance] [direction] OF ROUTE	O					[65] PositionDistanceSpecifiedDirection	See M-8
M-4.66	UM66 AT [time] OFFSET [specifiedDistance] [direction] OF ROUTE	O					[66] TimeDistanceSpecifiedDirection	See M-8
M-4.67	UM67 PROCEED BACK ON ROUTE	O					[67] NULL	
M-4.68	UM68 REJOIN ROUTE BY [position]	O					[68] Position	See P-15
M-4.69	UM69 REJOIN ROUTE BY [time]	O					[69] Time	See P-24
M-4.70	UM70 EXPECT BACK ON ROUTE BY [position]	O					[70] Position	See P-15
M-4.71	UM71 EXPECT BACK ON ROUTE BY [time]	O					[71] Time	See P-24
M-4.72	UM72 RESUME OWN NAVIGATION	O					[72] NULL	
M-4.73	UM73 [DepartureClearance]	O					[73] DepartureClearance	See P-5
M-4.74	UM74 PROCEED DIRECT TO [position]	O					[74] Position	See P-15
M-4.75	UM75 WHEN ABLE PROCEED DIRECT TO [position]	O					[75] Position	See P-15
M-4.76	UM76 AT [time] PROCEED DIRECT TO [position]	O					[76] TimePosition	See M-8
M-4.77	UM77 AT [position] PROCEED DIRECT TO [position]	O					[77] PositionPosition	See M-8
M-4.78	UM78 AT [level] PROCEED DIRECT TO [position]	O					[78] LevelPosition	See M-8
M-4.79	UM79 CLEARED TO [position] VIA [routeClearance]	O					[79] PositionRouteClearanceIndex	See M-8
M-4.80	UM80 CLEARED [route clearance]	O					[80] RouteClearanceIndex	See P-19
M-4.81	UM81 CLEARED [procedure name]	O					[81] ProcedureName	See P-17
M-4.82	UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE	O					[82] DistanceSpecifiedDirection	See P-8
M-4.83	UM83 AT [position] CLEARED [routeClearance]	O					[83] PositionRouteClearanceIndex	See M-8
M-4.84	UM84 AT [position] CLEARED [procedureName]	O					[84] PositionProcedureName	See M-8
M-4.85	UM85 EXPECT [routeClearance]	O					[85] RouteClearanceIndex	See P-19
M-4.86	UM86 AT [position] EXPECT [routeClearance]	O					[86] PositionRouteClearanceIndex	See M-8
M-4.87	UM87 EXPECT DIRECT TO [position]	O					[87] Position	See P-15
M-4.88	UM88 AT [position] EXPECT DIRECT TO [position]	O					[88] PositionPosition	See M-8
M-4.89	UM89 AT [time] EXPECT DIRECT TO [position]	O					[89] TimePosition	See M-8
M-4.90	UM90 AT [level] EXPECT DIRECT TO [position]	O					[90] LevelPosition	See M-8
M-4.91	UM91 HOLD AT [position] MAINTAIN [level] INBOUND TRACK [degrees] [direction] TURNS [legtype]	O					[91] HoldClearance	See P-11
M-4.92	UM92 HOLD AT [position] AS PUBLISHED MAINTAIN [level]	O					[92] PositionLevel	See M-8
M-4.93	UM93 EXPECT FURTHER CLEARANCE AT [time]	O					[93] Time	See P-24
M-4.94	UM94 TURN [direction] HEADING [degrees]	O					[94] DirectionDegrees	See M-8

Source: Chapter 4 - ASN.1		Receive					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons		
M-4.95	UM95 TURN [direction] GROUND TRACK [degrees]	O					[95] DirectionDegrees	See M-8
M-4.96	UM96 CONTINUE PRESENT HEADING	O					[96] NULL	
M-4.97	UM97 AT [position] FLY HEADING [degrees]	O					[97] PositionDegrees	See M-8
M-4.98	UM98 IMMEDIATELY TURN [direction] HEADING [degrees]	O					[98] DirectionDegrees	See M-8
M-4.99	UM99 EXPECT [procedureName]	O					[99] ProcedureName	See P-17
M-4.100	UM100 AT [time] EXPECT [speed]	O					[100] TimeSpeed	See M-8
M-4.101	UM101 AT [position] EXPECT [speed]	O					[101] PositionSpeed	See M-8
M-4.102	UM102 AT [level] EXPECT [speed]	O					[102] LevelSpeed	See M-8
M-4.103	UM103 AT [time] EXPECT [speed] TO [speed]	O					[103] TimeSpeedSpeed	See M-8
M-4.104	UM104 AT [position] EXPECT [speed] TO [speed]	O					[104] PositionSpeedSpeed	See M-8
M-4.105	UM105 AT [level] EXPECT [speed] TO [speed]	O					[105] LevelSpeedSpeed	See M-8
M-4.106	UM106 MAINTAIN [speed]	O					[106] Speed	See P-22
M-4.107	UM107 MAINTAIN PRESENT SPEED	O					[107] NULL	
M-4.108	UM108 MAINTAIN [speed] OR GREATER	O					[108] Speed	See P-22
M-4.109	UM109 MAINTAIN [speed] OR LESS	O					[109] Speed	See P-22
M-4.110	UM110 MAINTAIN [speed] TO [speed]	O					[110] SpeedSpeed	See M-8
M-4.111	UM111 INCREASE SPEED TO [speed]	O					[111] Speed	See P-22
M-4.112	UM112 INCREASE SPEED TO [speed] OR GREATER	O					[112] Speed	See P-22
M-4.113	UM113 REDUCE SPEED TO [speed]	O					[113] Speed	See P-22
M-4.114	UM114 REDUCE SPEED TO [speed] OR LESS	O					[114] Speed	See P-22
M-4.115	UM115 DO NOT EXCEED [speed]	O					[115] Speed	See P-22
M-4.116	UM116 RESUME NORMAL SPEED	O					[116] NULL	
M-4.117	UM117 CONTACT [unitname] [frequency]	O					[117] UnitNameFrequency	See M-8
M-4.118	UM118 AT [position] CONTACT [unitname] [frequency]	O					[118] PositionUnitNameFrequency	See M-8
M-4.119	UM119 AT [time] CONTACT [unitname] [frequency]	O					[119] TimeUnitNameFrequency	See M-8
M-4.120	UM120 MONITOR [unitname] [frequency]	O					[120] UnitNameFrequency	See M-8
M-4.121	UM121 AT [position] MONITOR [unitname] [frequency]	O					[121] PositionUnitNameFrequency	See M-8
M-4.122	UM122 AT [time] MONITOR [unitname] [frequency]	O					[122] TimeUnitNameFrequency	See M-8
M-4.123	UM123 SQUAWK [code]	O					[123] Code	See M-8
M-4.124	UM124 STOP SQUAWK	O					[124] NULL	
M-4.125	UM125 SQUAWK MODE CHARLIE	O					[125] NULL	
M-4.126	UM126 STOP SQUAWK MODE CHARLIE	O					[126] NULL	
M-4.127	UM127 REPORT BACK ON ROUTE	O					[127] NULL	
M-4.128	UM128 REPORT LEAVING [level]	O					[128] Level	See P-14
M-4.129	UM129 REPORT MAINTAINING [level]	O					[129] Level	See P-14
M-4.130	UM130 REPORT PASSING [position]	O					[130] Position	See P-15
M-4.131	UM131 REPORT REMAINING FUEL AND PERSONS ON BOARD	O					[131] NULL	
M-4.132	UM132 REPORT POSITION	O					[132] NULL	
M-4.133	UM133 REPORT PRESENT LEVEL	O					[133] NULL	
M-4.134	UM134 REPORT [speedtype] [speedtype] [speedtype] SPEED	O					[134] SpeedTypeSpeedTypeSpeedType	See M-8
M-4.135	UM135 CONFIRM ASSIGNED LEVEL	O					[135] NULL	
M-4.136	UM136 CONFIRM ASSIGNED SPEED	O					[136] NULL	
M-4.137	UM137 CONFIRM ASSIGNED ROUTE	O					[137] NULL	
M-4.138	UM138 CONFIRM TIME OVER REPORTED WAY POINT	O					[138] NULL	
M-4.139	UM139 CONFIRM REPORTED WAYPOINT	O					[139] NULL	
M-4.140	UM140 CONFIRM NEXT WAYPOINT	O					[140] NULL	
M-4.141	UM141 CONFIRM NEXT WAYPOINT ETA	O					[141] NULL	
M-4.142	UM142 CONFIRM ENSUING WAYPOINT	O					[142] NULL	
M-4.143	UM143 CONFIRM REQUEST	O					[143] NULL	
M-4.144	UM144 CONFIRM SQUAWK	O					[144] NULL	
M-4.145	UM145 REPORT HEADING	O					[145] NULL	

Source: Chapter 4 - ASN.1		Receive					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons		
M-4.146	UM146 REPORT GROUND TRACK	O					[146] NULL	
M-4.147	UM147 REQUEST POSITION REPORT	O					[147] NULL	
M-4.148	UM148 WHEN CAN YOU ACCEPT [level]	O					[148] Level	See P-14
M-4.149	UM149 CAN YOU ACCEPT [level] AT [position]	O					[149] LevelPosition	See M-8
M-4.150	UM150 CAN YOU ACCEPT [level] AT [time]	O					[150] LevelTime	See M-8
M-4.151	UM151 WHEN CAN YOU ACCEPT [speed]	O					[151] Speed	See P-22
M-4.152	UM152 WHEN CAN YOU ACCEPT [specifiedDistance] [direction] OFFSET	O					[152] DistanceSpecifiedDirection	See P-8
M-4.153	UM153 ALTIMETER [altimeter]	O					[153] Altimeter	See P-2
M-4.154	UM154 RADAR SERVICE TERMINATED	O					[154] NULL	
M-4.155	UM155 RADAR CONTACT [position]	O					[155] Position	See P-15
M-4.156	UM156 RADAR CONTACT LOST	O					[156] NULL	
M-4.157	UM157 CHECK STUCK MICROPHONE [frequency]	O					[157] Frequency	See P-10
M-4.158	UM158 ATIS [atiscode]	O					[158] ATISCode	See M-8
M-4.159	UM159 ERROR [errorInformation]	M					[159] ErrorInformation	See P-9
M-4.160	UM160 NEXT DATA AUTHORITY [facility]	O					[160] Facility	See M-8
M-4.161	UM161 END SERVICE	O					[161] NULL	
M-4.162	UM162 SERVICE UNAVAILABLE	M					[162] NULL	
M-4.163	UM163 [facilitydesignation]	O					[163] FacilityDesignation	See M-8
M-4.164	UM164 WHEN READY	O					[164] NULL	
M-4.165	UM165 THEN	O					[165] NULL	
M-4.166	UM166 DUE TO [traffictype] TRAFFIC	O					[166] TrafficType	See M-8
M-4.167	UM167 DUE TO AIRSPACE RESTRICTION	O					[167] NULL	
M-4.168	UM168 DISREGARD	O					[168] NULL	
M-4.169	UM169 [freetext]	O					[169] FreeText	See M-8
M-4.170	UM170 [freetext]	O					[170] FreeText	See M-8
M-4.171	UM171 CLIMB AT [verticalRate] MINIMUM	O					[171] VerticalRate	See P-26
M-4.172	UM172 CLIMB AT [verticalRate] MAXIMUM	O					[172] VerticalRate	See P-26
M-4.173	UM173 DESCEND AT [verticalRate] MINIMUM	O					[173] VerticalRate	See P-26
M-4.174	UM174 DESCEND AT [verticalRate] MAXIMUM	O					[174] VerticalRate	See P-26
M-4.175	UM175 REPORT REACHING [level]	O					[175] Level	See P-14
M-4.176	UM176 MAINTAIN OWN SEPARATION AND VMC	O					[176] NULL	
M-4.177	UM177 AT PILOTS DISCRETION	O					[177] NULL	
M-4.178	UM178 Reserved	X					[178] NULL	
M-4.179	UM179 SQUAWK IDENT	O					[179] NULL	
M-4.180	UM180 REPORT REACHING BLOCK [level] TO [level]	O					[180] LevelLevel	See M-8
M-4.181	UM181 REPORT DISTANCE [tofrom] [position]	O					[181] ToFromPosition	See M-8
M-4.182	UM182 CONFIRM ATIS CODE	O					[182] NULL	
M-4.183	UM183 [freetext]	M					[183] FreeText	See M-8
M-4.184	UM184 AT [time] REPORT DISTANCE [tofrom] [position]	O					[184] TimeToFromPosition	See M-8
M-4.185	UM185 AFTER PASSING [position] CLIMB TO [level]	O					[185] PositionLevel	See M-8
M-4.186	UM186 AFTER PASSING [position] DESCEND TO [level]	O					[186] PositionLevel	See M-8
M-4.187	UM187 [freetext]	O					[187] FreeText	See M-8
M-4.188	UM188 AFTER PASSING [position] MAINTAIN [speed]	O					[188] PositionSpeed	See M-8
M-4.189	UM189 ADJUST SPEED TO [speed]	O					[189] Speed	See P-22
M-4.190	UM190 FLY HEADING [degrees]	O					[190] Degrees	See P-4
M-4.191	UM191 ALL ATS TERMINATED	O					[191] NULL	
M-4.192	UM192 REACH [level] BY [time]	O					[192] LevelTime	See M-8
M-4.193	UM193 IDENTIFICATION LOST	O					[193] NULL	
M-4.194	UM194 [freetext]	O					[194] FreeText	See M-8
M-4.195	UM195 [freetext]	O					[195] FreeText	See M-8
M-4.196	UM196 [freetext]	O					[196] FreeText	See M-8

Source: Chapter 4 - ASN.1		Receive					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons		
M-4.197	UM197 [freetext]	O					[197] FreeText	See M-8
M-4.198	UM198 [freetext]	O					[198] FreeText	See M-8
M-4.199	UM199 [freetext]	O					[199] FreeText	See M-8
M-4.200	UM200 REPORT REACHING	O					[200] NULL	
M-4.201	UM201 Not Used	X					[201] NULL	
M-4.202	UM202 Not Used	X					[202] NULL	
M-4.203	UM203 [freetext]	O					[203] FreeText	See M-8
M-4.204	UM204 [freetext]	O					[204] FreeText	See M-8
M-4.205	UM205 [freetext]	O					[205] FreeText	See M-8
M-4.206	UM206 [freetext]	O					[206] FreeText	See M-8
M-4.207	UM207 [freetext]	O					[207] FreeText	See M-8
M-4.208	UM208 [freetext]	O					[208] FreeText	See M-8
M-4.209	UM209 REACH [level] BY [position]	O					[209] LevelPosition	See M-8
M-4.210	UM210 IDENTIFIED [position]	O					[210] Position	See P-15
M-4.211	UM211 REQUEST FORWARDED	O					[211] NULL	
M-4.212	UM212 [facilitydesignation] ATIS [atiscode] CURRENT	O					[212] FacilityDesignationATISCode	See M-8
M-4.213	UM213 [facilitydesignation] ALTIMETER [altimeter]	O					[213] FacilityDesignationAltimeter	See M-8
M-4.214	UM214 RVR RUNWAY [runway] [rvr]	O					[214] RunwayRVR	See M-8
M-4.215	UM215 TURN [direction] [degrees]	O					[215] DirectionDegrees	See M-8
M-4.216	UM216 REQUEST FLIGHT PLAN	O					[216] NULL	
M-4.217	UM217 REPORT ARRIVAL	O					[217] NULL	
M-4.218	UM218 REQUEST ALREADY RECEIVED	O					[218] NULL	
M-4.219	UM219 STOP CLIMB AT [level]	O					[219] Level	See P-14
M-4.220	UM220 STOP DESCENT AT [level]	O					[220] Level	See P-14
M-4.221	UM221 STOP TURN HEADING [degrees]	O					[221] Degrees	See P-4
M-4.222	UM222 NO SPEED RESTRICTION	O					[222] NULL	
M-4.223	UM223 REDUCE TO MINIMUM APPROACH SPEED	O					[223] NULL	
M-4.224	UM224 NO DELAY EXPECTED	O					[224] NULL	
M-4.225	UM225 DELAY NOT DETERMINED	O					[225] NULL	
M-4.226	UM226 EXPECTED APPROACH TIME [time]	O					[226] Time	See P-24
M-4.227	UM227 LOGICAL ACKNOWLEDGMENT	M					[227] NULL	
M-4.228	UM228 REPORT ETA [position]	O					[228] Position	See P-15
M-4.229	UM229 REPORT ALTERNATE AERODROME	O					[229] NULL	
M-4.230	UM230 IMMEDIATELY	O					[230] NULL	
M-4.231	UM231 STATE PREFERRED LEVEL	O					[231] NULL	
M-4.232	UM232 STATE-TOP-OF-DESCENT	O					[232] NULL	
M-4.233	UM233 USE OF LOGICAL ACKNOWLEDGMENT PROHIBITED	O					[233] NULL	
M-4.234	UM234 FLIGHT PLAN NOT HELD	O					[234] NULL	
M-4.235	UM235 ROGER 7500	O					[235] NULL	
M-4.236	UM236 LEAVE CONTROLLED AIRSPACE	O					[236] NULL	
M-4.237	Use of Extensibility	M					Use of Extensibility	

Table M-5: Uplink Messages Permitted Operational Responses

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response Attribute	Downlink Message	Profile Status	IMP Support	
M-5.0	UM0 UNABLE	N	—	—	—	
M-5.1	UM1 STANDBY	N	—	—	—	
M-5.2	UM2 REQUEST DEFERRED	N	—	—	—	
M-5.3	UM3 ROGER	N	—	—	—	
M-5.4	UM4 AFFIRM	N	—	—	—	
M-5.5	UM5 NEGATIVE	N	—	—	—	
M-5.6	UM6 EXPECT [level]	R	—	—	—	
M-5.7	UM7 EXPECT CLIMB AT [time]	R	—	—	—	
M-5.8	UM8 EXPECT CLIMB AT [position]	R	—	—	—	
M-5.9	UM9 EXPECT DESCENT AT [time]	R	—	—	—	
M-5.10	UM10 EXPECT DESCENT AT [position]	R	—	—	—	
M-5.11	UM11 EXPECT CRUISE CLIMB AT [time]	R	—	—	—	
M-5.12	UM12 EXPECT CRUISE CLIMB AT [position]	R	—	—	—	
M-5.13	UM13 AT [time] EXPECT CLIMB TO [level]	R	—	—	—	
M-5.14	UM14 AT [position] EXPECT CLIMB TO [level]	R	—	—	—	
M-5.15	UM15 AT [time] EXPECT DESCENT TO [level]	R	—	—	—	
M-5.16	UM16 AT [position] EXPECT DESCENT TO [level]	R	—	—	—	
M-5.17	UM17 AT [time] EXPECT CRUISE CLIMB TO [level]	R	—	—	—	
M-5.18	UM18 AT [position] EXPECT CRUISE CLIMB TO [level]	R	—	—	—	
M-5.19	UM19 MAINTAIN [level]	W/U	—	—	—	
M-5.20	UM20 CLIMB TO [level]	W/U	—	—	—	
M-5.21	UM21 AT [time] CLIMB TO [level]	W/U	—	—	—	
M-5.22	UM22 AT [position] CLIMB TO [level]	W/U	—	—	—	
M-5.23	UM23 DESCEND TO [level]	W/U	—	—	—	
M-5.24	UM24 AT [time] DESCEND TO [level]	W/U	—	—	—	
M-5.25	UM25 AT [position] DESCEND TO [level]	W/U	—	—	—	
M-5.26	UM26 CLIMB TO REACH [level] BY [time]	W/U	—	—	—	
M-5.27	UM27 CLIMB TO REACH [level] BY [position]	W/U	—	—	—	
M-5.28	UM28 DESCEND TO REACH [level] BY [time]	W/U	—	—	—	
M-5.29	UM29 DESCEND TO REACH [level] BY [position]	W/U	—	—	—	
M-5.30	UM30 MAINTAIN BLOCK [level] TO [level]	W/U	—	—	—	
M-5.31	UM31 CLIMB TO AND MAINTAIN BLOCK [level] TO [level]	W/U	—	—	—	
M-5.32	UM32 DESCEND TO AND MAINTAIN BLOCK [level] TO [level]	W/U	—	—	—	
M-5.33	UM33 Reserved	Y				
M-5.33.1			DM62 ERROR [invalid message element]			
M-5.34	UM34 CRUISE CLIMB TO [level]	W/U	—	—	—	
M-5.35	UM35 CRUISE CLIMB ABOVE [level]	W/U	—	—	—	
M-5.36	UM36 EXPEDITE CLIMB TO [level]	W/U	—	—	—	
M-5.37	UM37 EXPEDITE DESCENT TO [level]	W/U	—	—	—	
M-5.38	UM38 IMMEDIATELY CLIMB TO [level]	W/U	—	—	—	
M-5.39	UM39 IMMEDIATELY DESCEND TO [level]	W/U	—	—	—	
M-5.40	UM40 Reserved	Y				
M-5.40.1			DM62 ERROR [invalid message element]			
M-5.41	UM41 Reserved	Y				
M-5.41.1			DM62 ERROR [invalid message element]			
M-5.42	UM42 EXPECT TO CROSS [position] AT [level]	R	—	—	—	
M-5.43	UM43 EXPECT TO CROSS [position] AT OR ABOVE [level]	R	—	—	—	
M-5.44	UM44 EXPECT TO CROSS [position] AT OR BELOW [level]	R	—	—	—	

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response	Downlink Message	Profile	IMP	
		Attribute		Status	Support	
M-5.45	UM45 EXPECT TO CROSS [position] AT AND MAINTAIN [level]	R	—	—	—	
M-5.46	UM46 CROSS [position] AT [level]	W/U	—	—	—	
M-5.47	UM47 CROSS [position] AT OR ABOVE [level]	W/U	—	—	—	
M-5.48	UM48 CROSS [position] AT OR BELOW [level]	W/U	—	—	—	
M-5.49	UM49 CROSS [position] AT AND MAINTAIN [level]	W/U	—	—	—	
M-5.50	UM50 CROSS [position] BETWEEN [level] AND [level]	W/U	—	—	—	
M-5.51	UM51 CROSS [position] AT [time]	W/U	—	—	—	
M-5.52	UM52 CROSS [position] AT OR BEFORE [time]	W/U	—	—	—	
M-5.53	UM53 CROSS [position] AT OR AFTER [time]	W/U	—	—	—	
M-5.54	UM54 CROSS [position] BETWEEN [time] AND [time]	W/U	—	—	—	
M-5.55	UM55 CROSS [position] AT [speed]	W/U	—	—	—	
M-5.56	UM56 CROSS [position] AT OR LESS THAN [speed]	W/U	—	—	—	
M-5.57	UM57 CROSS [position] AT OR GREATER THAN [speed]	W/U	—	—	—	
M-5.58	UM58 CROSS [position] AT [time] AT [level]	W/U	—	—	—	
M-5.59	UM59 CROSS [position] AT OR BEFORE [time] AT [level]	W/U	—	—	—	
M-5.60	UM60 CROSS [position] AT OR AFTER [time] AT [level]	W/U	—	—	—	
M-5.61	UM61 CROSS [position] AT AND MAINTAIN [level] AT [speed]	W/U	—	—	—	
M-5.62	UM62 AT [time] CROSS [position] AT AND MAINTAIN [level]	W/U	—	—	—	
M-5.63	UM63 AT [time] CROSS [position] AT AND MAINTAIN [level] AT [speed]	W/U	—	—	—	
M-5.64	UM64 OFFSET [specifiedDistance] [direction] OF ROUTE	W/U	—	—	—	
M-5.65	UM65 AT [position] OFFSET [specifiedDistance] [direction] OF ROUTE	W/U	—	—	—	
M-5.66	UM66 AT [time] OFFSET [specifiedDistance] [direction] OF ROUTE	W/U	—	—	—	
M-5.67	UM67 PROCEED BACK ON ROUTE	W/U	—	—	—	
M-5.68	UM68 REJOIN ROUTE BY [position]	W/U	—	—	—	
M-5.69	UM69 REJOIN ROUTE BY [time]	W/U	—	—	—	
M-5.70	UM70 EXPECT BACK ON ROUTE BY [position]	R	—	—	—	
M-5.71	UM71 EXPECT BACK ON ROUTE BY [time]	R	—	—	—	
M-5.72	UM72 RESUME OWN NAVIGATION	W/U	—	—	—	
M-5.73	UM73 [DepartureClearance]	W/U	—	—	—	
M-5.74	UM74 PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.75	UM75 WHEN ABLE PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.76	UM76 AT [time] PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.77	UM77 AT [position] PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.78	UM78 AT [level] PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.79	UM79 CLEARED TO [position] VIA [routeClearance]	W/U	—	—	—	
M-5.80	UM80 CLEARED [route clearance]	W/U	—	—	—	
M-5.81	UM81 CLEARED [procedure name]	W/U	—	—	—	
M-5.82	UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE	W/U	—	—	—	
M-5.83	UM83 AT [position] CLEARED [routeClearance]	W/U	—	—	—	
M-5.84	UM84 AT [position] CLEARED [procedureName]	W/U	—	—	—	
M-5.85	UM85 EXPECT [routeClearance]	R	—	—	—	
M-5.86	UM86 AT [position] EXPECT [routeClearance]	R	—	—	—	
M-5.87	UM87 EXPECT DIRECT TO [position]	R	—	—	—	
M-5.88	UM88 AT [position] EXPECT DIRECT TO [position]	R	—	—	—	
M-5.89	UM89 AT [time] EXPECT DIRECT TO [position]	R	—	—	—	
M-5.90	UM90 AT [level] EXPECT DIRECT TO [position]	R	—	—	—	

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response Attribute	Downlink Message	Profile Status	IMP Support	
	UM91 HOLD AT [position] MAINTAIN [level] INBOUND TRACK [degrees] [direction] TURNS [legtype]	W/U	—	—	—	
M-5.91	UM91 HOLD AT [position] MAINTAIN [level] INBOUND TRACK [degrees] [direction] TURNS [legtype]	W/U	—	—	—	
M-5.92	UM92 HOLD AT [position] AS PUBLISHED MAINTAIN [level]	W/U	—	—	—	
M-5.93	UM93 EXPECT FURTHER CLEARANCE AT [time]	R	—	—	—	
M-5.94	UM94 TURN [direction] HEADING [degrees]	W/U	—	—	—	
M-5.95	UM95 TURN [direction] GROUND TRACK [degrees]	W/U	—	—	—	
M-5.96	UM96 CONTINUE PRESENT HEADING	W/U	—	—	—	
M-5.97	UM97 AT [position] FLY HEADING [degrees]	W/U	—	—	—	
M-5.98	UM98 IMMEDIATELY TURN [direction] HEADING [degrees]	W/U	—	—	—	
M-5.99	UM99 EXPECT [procedureName]	R	—	—	—	
M-5.100	UM100 AT [time] EXPECT [speed]	R	—	—	—	
M-5.101	UM101 AT [position] EXPECT [speed]	R	—	—	—	
M-5.102	UM102 AT [level] EXPECT [speed]	R	—	—	—	
M-5.103	UM103 AT [time] EXPECT [speed] TO [speed]	R	—	—	—	
M-5.104	UM104 AT [position] EXPECT [speed] TO [speed]	R	—	—	—	
M-5.105	UM105 AT [level] EXPECT [speed] TO [speed]	R	—	—	—	
M-5.106	UM106 MAINTAIN [speed]	W/U	—	—	—	
M-5.107	UM107 MAINTAIN PRESENT SPEED	W/U	—	—	—	
M-5.108	UM108 MAINTAIN [speed] OR GREATER	W/U	—	—	—	
M-5.109	UM109 MAINTAIN [speed] OR LESS	W/U	—	—	—	
M-5.110	UM110 MAINTAIN [speed] TO [speed]	W/U	—	—	—	
M-5.111	UM111 INCREASE SPEED TO [speed]	W/U	—	—	—	
M-5.112	UM112 INCREASE SPEED TO [speed] OR GREATER	W/U	—	—	—	
M-5.113	UM113 REDUCE SPEED TO [speed]	W/U	—	—	—	
M-5.114	UM114 REDUCE SPEED TO [speed] OR LESS	W/U	—	—	—	
M-5.115	UM115 DO NOT EXCEED [speed]	W/U	—	—	—	
M-5.116	UM116 RESUME NORMAL SPEED	W/U	—	—	—	
M-5.117	UM117 CONTACT [unitname] [frequency]	W/U	—	—	—	
M-5.118	UM118 AT [position] CONTACT [unitname] [frequency]	W/U	—	—	—	
M-5.119	UM119 AT [time] CONTACT [unitname] [frequency]	W/U	—	—	—	
M-5.120	UM120 MONITOR [unitname] [frequency]	W/U	—	—	—	
M-5.121	UM121 AT [position] MONITOR [unitname] [frequency]	W/U	—	—	—	
M-5.122	UM122 AT [time] MONITOR [unitname] [frequency]	W/U	—	—	—	
M-5.123	UM123 SQUAWK [code]	W/U	—	—	—	
M-5.124	UM124 STOP SQUAWK	W/U	—	—	—	
M-5.125	UM125 SQUAWK MODE CHARLIE	W/U	—	—	—	
M-5.126	UM126 STOP SQUAWK MODE CHARLIE	W/U	—	—	—	
M-5.127	UM127 REPORT BACK ON ROUTE	W/U				
M-5.127.1			DM41 BACK ON ROUTE			a
M-5.128	UM128 REPORT LEAVING [level]	W/U				
M-5.128.1			DM28 LEAVING [level]			a
M-5.129	UM129 REPORT MAINTAINING [level]	W/U				
M-5.129.1			DM37 MAINTAINING [level]			a
M-5.130	UM130 REPORT PASSING [position]	W/U				
M-5.130.1			DM31 PASSING [position]			a
M-5.131	UM131 REPORT REMAINING FUEL AND PERSONS ON BOARD	Y				
M-5.131.1			DM57 [remainingFuel] OF FUEL REMAINING AND [personsonboard] PERSONS ON BOARD			
M-5.132	UM132 REPORT POSITION	Y				
M-5.132.1			DM33 PRESENT POSITION [position]			
M-5.133	UM133 REPORT PRESENT LEVEL	Y				

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response Attribute	Downlink Message	Profile Status	IMP Support	
M-5.133.1			DM32 PRESENT LEVEL [level]			
M-5.133.2			DM37 MAINTAINING [level]			
M-5.134	UM134 REPORT [speedtype] [speedtype] [speedtype] SPEED	Y				
M-5.134.1			DM113 [speedType] [speedType] [speedType] SPEED [speed]			
M-5.134.2			DM34 PRESENT SPEED [speed]			
M-5.135	UM135 CONFIRM ASSIGNED LEVEL	Y				
M-5.135.1			DM38 ASSIGNED LEVEL [level]			
M-5.135.2			DM77 ASSIGNED BLOCK [level] TO [level]			
M-5.136	UM136 CONFIRM ASSIGNED SPEED	Y				
M-5.136.1			DM39 ASSIGNED SPEED [speed]			
M-5.137	UM137 CONFIRM ASSIGNED ROUTE	Y				
M-5.137.1			DM40 ASSIGNED ROUTE [routeClearance]			
M-5.138	UM138 CONFIRM TIME OVER REPORTED WAY POINT	Y				
M-5.138.1			DM46 REPORTED WAYPOINT [time]			
M-5.139	UM139 CONFIRM REPORTED WAYPOINT	Y				
M-5.139.1			DM45 REPORTED WAYPOINT [position]			
M-5.140	UM140 CONFIRM NEXT WAYPOINT	Y				
M-5.140.1			DM42 NEXT WAYPOINT [position]			
M-5.141	UM141 CONFIRM NEXT WAYPOINT ETA	Y				
M-5.141.1			DM43 NEXT WAYPOINT ETA [time]			
M-5.142	UM142 CONFIRM ENSUING WAYPOINT	Y				
M-5.142.1			DM44 ENSUING WAYPOINT [position]			
M-5.143	UM143 CONFIRM REQUEST	Y				
M-5.143.1			Last downlink request sent			
M-5.144	UM144 CONFIRM SQUAWK	Y				
M-5.144.1			DM47 SQUAWKING [code]			
M-5.145	UM145 REPORT HEADING	Y				
M-5.145.1			DM35 PRESENT HEADING [degrees]			
M-5.146	UM146 REPORT GROUND TRACK	Y				
M-5.146.1			DM36 PRESENT GROUND TRACK [degrees]			
M-5.147	UM147 REQUEST POSITION REPORT	Y				
M-5.147.1			DM48 POSITION REPORT [positionreport]			
M-5.148	UM148 WHEN CAN YOU ACCEPT [level]	Y				
M-5.148.1			DM81 WE CAN ACCEPT [level] AT [time]			
M-5.148.2			DM82 WE CANNOT ACCEPT [level]			
M-5.149	UM149 CAN YOU ACCEPT [level] AT [position]	A/N	—	—	—	
M-5.150	UM150 CAN YOU ACCEPT [level] AT [time]	A/N	—	—	—	
M-5.151	UM151 WHEN CAN YOU ACCEPT [speed]	Y				
M-5.151.1			DM83 WE CAN ACCEPT [speed] AT [time]			
M-5.151.2			DM84 WE CANNOT ACCEPT [speed]			
M-5.152	UM152 WHEN CAN YOU ACCEPT [specifiedDistance] [direction] OFFSET	Y				
M-5.152.1			DM85 WE CAN ACCEPT [specifiedDistance] [direction] AT [time]			
M-5.152.2			DM86 WE CANNOT ACCEPT [specifiedDistance] [direction]			
M-5.153	UM153 ALTIMETER [altimeter]	R	—	—	—	
M-5.154	UM154 RADAR SERVICE TERMINATED	R	—	—	—	
M-5.155	UM155 RADAR CONTACT [position]	R	—	—	—	
M-5.156	UM156 RADAR CONTACT LOST	R	—	—	—	
M-5.157	UM157 CHECK STUCK MICROPHONE [frequency]	N	—	—	—	
M-5.158	UM158 ATIS [atiscodes]	R	—	—	—	

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response	Downlink Message	Profile	IMP	
		Attribute		Status	Support	
M-5.159	UM159 ERROR [errorInformation]	N	—	—	—	
M-5.160	UM160 NEXT DATA AUTHORITY [facility]	N	—	—	—	
M-5.161	UM161 END SERVICE	N	—	—	—	
M-5.162	UM162 SERVICE UNAVAILABLE	N	—	—	—	
M-5.163	UM163 [facilitydesignation]	N	—	—	—	
M-5.164	UM164 WHEN READY	N	—	—	—	
M-5.165	UM165 THEN	N	—	—	—	
M-5.166	UM166 DUE TO [traffictype] TRAFFIC	N	—	—	—	
M-5.167	UM167 DUE TO AIRSPACE RESTRICTION	N	—	—	—	
M-5.168	UM168 DISREGARD	R	—	—	—	
M-5.169	UM169 [freetext]	R	—	—	—	
M-5.170	UM170 [freetext]	R	—	—	—	
M-5.171	UM171 CLIMB AT [verticalRate] MINIMUM	W/U	—	—	—	
M-5.172	UM172 CLIMB AT [verticalRate] MAXIMUM	W/U	—	—	—	
M-5.173	UM173 DESCEND AT [verticalRate] MINIMUM	W/U	—	—	—	
M-5.174	UM174 DESCEND AT [verticalRate] MAXIMUM	W/U	—	—	—	
M-5.175	UM175 REPORT REACHING [level]	W/U				
M-5.175.1			DM72 REACHING [level]			a
M-5.176	UM176 MAINTAIN OWN SEPARATION AND VMC	W/U	—	—	—	
M-5.177	UM177 AT PILOTS DISCRETION	N	—	—	—	
M-5.178	UM178 Reserved	Y	DM62 ERROR [invalid message element]			
M-5.179	UM179 SQUAWK IDENT	W/U	—	—	—	
M-5.180	UM180 REPORT REACHING BLOCK [level] TO [level]	W/U				
M-5.180.1			DM76 REACHING BLOCK [level] TO [level]			a
M-5.181	UM181 REPORT DISTANCE [tofrom] [position]	Y				
M-5.181.1			DM78 AT [time] [distance] [tofrom] [position]			
M-5.182	UM182 CONFIRM ATIS CODE	Y				
M-5.182.1			DM79 ATIS [atiscode]			
M-5.183	UM183 [freetext]	N	—	—	—	
M-5.184	UM184 AT [time] REPORT DISTANCE [tofrom] [position]	Y				
M-5.184.1			DM78 AT [time] [distance] [tofrom] [position]			
M-5.185	UM185 AFTER PASSING [position] CLIMB TO [level]	W/U	—	—	—	
M-5.186	UM186 AFTER PASSING [position] DESCEND TO [level]	W/U	—	—	—	
M-5.187	UM187 [freetext]	N	—	—	—	
M-5.188	UM188 AFTER PASSING [position] MAINTAIN [speed]	W/U	—	—	—	
M-5.189	UM189 ADJUST SPEED TO [speed]	W/U	—	—	—	
M-5.190	UM190 FLY HEADING [degrees]	W/U	—	—	—	
M-5.191	UM191 ALL ATS TERMINATED	R	—	—	—	
M-5.192	UM192 REACH [level] BY [time]	W/U	—	—	—	
M-5.193	UM193 IDENTIFICATION LOST	R	—	—	—	
M-5.194	UM194 [freetext]	Y	No defined response			
M-5.195	UM195 [freetext]	R	—	—	—	
M-5.196	UM196 [freetext]	W/U	—	—	—	
M-5.197	UM197 [freetext]	W/U	—	—	—	
M-5.198	UM198 [freetext]	W/U	—	—	—	
M-5.199	UM199 [freetext]	N	—	—	—	
M-5.200	UM200 REPORT REACHING	W/U	—	—	—	
M-5.201	UM201 Not Used	N	—	—	—	
M-5.202	UM202 Not Used	N	—	—	—	
M-5.203	UM203 [freetext]	R	—	—	—	
M-5.204	UM204 [freetext]	Y	No defined response			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response Attribute	Downlink Message	Profile Status	IMP Support	
M-5.205	UM205 [freetext]	A/N	—	—	—	
M-5.206	UM206 [freetext]	Y	No defined response			
M-5.207	UM207 [freetext]	Y	No defined response			
M-5.208	UM208 [freetext]	N	—	—	—	
M-5.209	UM209 REACH [level] BY [position]	W/U	—	—	—	
M-5.210	UM210 IDENTIFIED [position]	R	—	—	—	
M-5.211	UM211 REQUEST FORWARDED	N	—	—	—	
M-5.212	UM212 [facilitydesignation] ATIS [atiscodes] CURRENT	R	—	—	—	
M-5.213	UM213 [facilitydesignation] ALTIMETER [altimeter]	R	—	—	—	
M-5.214	UM214 RVR RUNWAY [runway] [rvr]	R	—	—	—	
M-5.215	UM215 TURN [direction] [degrees]	W/U	—	—	—	
M-5.216	UM216 REQUEST FLIGHT PLAN	Y				
M-5.216.1						
M-5.217	UM217 REPORT ARRIVAL	Y				
M-5.217.1			DM102 LANDING REPORT			a
M-5.218	UM218 REQUEST ALREADY RECEIVED	N	—	—	—	
M-5.219	UM219 STOP CLIMB AT [level]	W/U	—	—	—	
M-5.220	UM220 STOP DESCENT AT [level]	W/U	—	—	—	
M-5.221	UM221 STOP TURN HEADING [degrees]	W/U	—	—	—	
M-5.222	UM222 NO SPEED RESTRICTION	R	—	—	—	
M-5.223	UM223 REDUCE TO MINIMUM APPROACH SPEED	W/U	—	—	—	
M-5.224	UM224 NO DELAY EXPECTED	R	—	—	—	
M-5.225	UM225 DELAY NOT DETERMINED	R	—	—	—	
M-5.226	UM226 EXPECTED APPROACH TIME [time]	R	—	—	—	
M-5.227	UM227 LOGICAL ACKNOWLEDGMENT	N	—	—	—	
M-5.228	UM228 REPORT ETA [position]	Y				
M-5.228.1			DM104 ETA [position] [time]			
M-5.229	UM229 REPORT ALTERNATE AERODROME	Y				
M-5.229.1			DM105 ALTERNATIVE AERODROME [airport]			
M-5.230	UM230 IMMEDIATELY	N	—	—	—	
M-5.231	UM231 STATE PREFERRED LEVEL	Y				
M-5.231.1			DM106 PREFERRED LEVEL [level]			
M-5.232	UM232 STATE TOP OF DESCENT	Y				
M-5.232.1			DM109 TOP OF DESCENT [time]			
M-5.232.2			DM110 TOP OF DESCENT [position]			
M-5.232.3			DM111 TOP OF DESCENT [time] [position]			
M-5.233	UM233 USE OF LOGICAL ACKNOWLEDGMENT PROHIBITED	N	—	—	—	
M-5.234	UM234 FLIGHT PLAN NOT HELD	N	—	—	—	
M-5.235	UM235 ROGER 7500	N	—	—	—	
M-5.236	UM236 LEAVE CONTROLLED AIRSPACE	W/U	—	—	—	

Notes:

- a The uplink message is responded to with a W/U, the response to the request is sent at a later time when the condition is true. Does not have a message reference number

Note for Implementers:

If a airborne system implements additional response messages additional rows should be added to this table under the paired uplink message number

- * The messages associated with the response attributes are:

W/U DM0 WILCO

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response	Downlink Message	Profile	IMP	
		Attribute		Status	Support	
	DM1 UNABLE					
	DM2 STANDBY					
	DM100 LOGICAL ACKNOWLEDGMENT (if required)					
	DM62 ERROR (if necessary)					
A/N	DM4 AFFIRM					
	DM5 NEGATIVE					
	DM2 STANDBY					
	DM100 LOGICAL ACKNOWLEDGMENT (if required)					
	DM62 ERROR (if necessary)					
R	DM1 UNABLE					
	DM2 STANDBY					
	DM3 ROGER					
	DM100 LOGICAL ACKNOWLEDGMENT (if required)					
	DM62 ERROR (if necessary)					
Y	any downlink message					
N	none, except DM100 if required					

Table M-6: Downlink Message Elements

Source: Chapter 4 - ASN.1		Send					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Status	Profile Cons	Implementation Status	Cons		
M-6	ATCDownlinkMsgElementId						ATCDownlinkMsgElementId ::= CHOICE	
M-6.0	DM0 WILCO	O					[0] NULL	
M-6.1	DM1 UNABLE	O					[1] NULL	
M-6.2	DM2 STANDBY	O					[2] NULL	
M-6.3	DM3 ROGER	O					[3] NULL	
M-6.4	DM4 AFFIRM	O					[4] NULL	
M-6.5	DM5 NEGATIVE	O					[5] NULL	
M-6.6	DM6 REQUEST [level]	O					[6] Level	See P-14
M-6.7	DM7 REQUEST BLOCK [level] TO [level]	O					[7] LevelLevel	See M-8
M-6.8	DM8 REQUEST CRUISE CLIMB TO [level]	O					[8] Level	See P-14
M-6.9	DM9 REQUEST CLIMB TO [level]	O					[9] Level	See P-14
M-6.10	DM10 REQUEST DESCENT TO [level]	O					[10] Level	See P-14
M-6.11	DM11 AT [position] REQUEST CLIMB TO [level]	O					[11] PositionLevel	See M-8
M-6.12	DM12 AT [position] REQUEST DESCENT TO [level]	O					[12] PositionLevel	See M-8
M-6.13	DM13 AT [time] REQUEST CLIMB TO [level]	O					[13] TimeLevel	See M-8
M-6.14	DM14 AT [time] REQUEST DESCENT TO [level]	O					[14] TimeLevel	See M-8
M-6.15	DM15 REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	O					[15] DistanceSpecifiedDirection	See P-8
M-6.16	DM16 AT position] REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	O					[16] PositionDistanceSpecifiedDirection	See M-8
M-6.17	DM17 AT [time] REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	O					[17] TimeDistanceSpecifiedDirection	See M-8
M-6.18	DM18 REQUEST [speed]	O					[18] Speed	See P-22
M-6.19	DM19 REQUEST [speed] TO [speed]	O					[19] SpeedSpeed	See M-8
M-6.20	DM20 REQUEST VOICE CONTACT	O					[20] NULL	
M-6.21	DM21 REQUEST VOICE CONTACT [frequency]	O					[21] Frequency	See P-10
M-6.22	DM22 REQUEST DIRECT TO [position]	O					[22] Position	See P-15
M-6.23	DM23 REQUEST [procedureName]	O					[23] ProcedureName	See P-17
M-6.24	DM24 REQUEST [routeClearance]	O					[24] RouteClearanceIndex	See P-19
M-6.25	DM25 REQUEST [ClearanceType] CLEARANCE	O					[25] ClearanceType	See P-3
M-6.26	DM26 REQUEST WEATHER DEVIATION TO [position] VIA [routeClearance]	O					[26] PositionRouteClearanceIndex	See M-8
M-6.27	DM27 REQUEST WEATHER DEVIATION UP TO [specifiedDistance]	O					[27] DistanceSpecifiedDirection	See P-8
M-6.28	DM28 LEAVING [level]	O					[28] Level	See P-14
M-6.29	DM29 CLIMBING TO [level]	O					[29] Level	See P-14
M-6.30	DM30 DESCENDING TO [level]	O					[30] Level	See P-14
M-6.31	DM31 PASSING [position]	O					[31] Position	See P-15
M-6.32	DM32 PRESENT LEVEL [level]	O					[32] Level	See P-14
M-6.33	DM33 PRESENT POSITION [position]	O					[33] Position	See P-15
M-6.34	DM34 PRESENT SPEED [speed]	O					[34] Speed	See P-22
M-6.35	DM35 PRESENT HEADING [degrees]	O					[35] Degrees	See P-4
M-6.36	DM36 PRESENT GROUND TRACK [degrees]	O					[36] Degrees	See P-4
M-6.37	DM37 MAINTAINING [level]	O					[37] Level	See P-14
M-6.38	DM38 ASSIGNED LEVEL [level]	O					[38] Level	See P-14
M-6.39	DM39 ASSIGNED SPEED [speed]	O					[39] Speed	See P-22
M-6.40	DM40 ASSIGNED ROUTE [routeClearance]	O					[40] RouteClearanceIndex	See P-19
M-6.41	DM41 BACK ON ROUTE	O					[41] NULL	
M-6.42	DM42 NEXT WAYPOINT [position]	O					[42] Position	See P-15
M-6.43	DM43 NEXT WAYPOINT ETA [time]	O					[43] Time	See P-24

Source: Chapter 4 - ASN.1		Send					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-6.44	DM44 ENSUING WAYPOINT [position]	O					[44] Position	See P-15
M-6.45	DM45 REPORTED WAYPOINT [position]	O					[45] Position	See P-15
M-6.46	DM46 REPORTED WAYPOINT [time]	O					[46] Time	See P-24
M-6.47	DM47 SQUAWKING [code]	O					[47] Code	See M-8
M-6.48	DM48 POSITION REPORT [positionreport]	O					[48] PositionReport	See P-16
M-6.49	DM49 WHEN CAN WE EXPECT [speed]	O					[49] Speed	See P-22
M-6.50	DM50 WHEN CAN WE EXPECT [speed] TO [speed]	O					[50] SpeedSpeed	See M-8
M-6.51	DM51 WHEN CAN WE EXPECT BACK ON ROUTE	O					[51] NULL	
M-6.52	DM52 WHEN CAN WE EXPECT LOWER LEVEL	O					[52] NULL	
M-6.53	DM53 WHEN CAN WE EXPECT HIGHER LEVEL	O					[53] NULL	
M-6.54	DM54 WHEN CAN WE EXPECT CRUISE CLIMB TO [level]	O					[54] Level	See P-14
M-6.55	DM55 PAN PAN PAN	O					[55] NULL	
M-6.56	DM56 MAYDAY MAYDAY MAYDAY	O					[56] NULL	
M-6.57	DM57 [remainingFuel] OF FUEL REMAINING AND [personsonboard] PERSONS ON BOARD	O					[57] RemainingFuelPersonsOnBoard	See M-8
M-6.58	DM58 CANCEL EMERGENCY	O					[58] NULL	
M-6.59	DM59 DIVERTING TO [position] VIA [routeClearance]	O					[59] PositionRouteClearanceIndex	See M-8
M-6.60	DM60 OFFSETTING [specifiedDistance] [direction] OF ROUTE	O					[60] DistanceSpecifiedDirection	See P-8
M-6.61	DM61 DESCENDING TO [level]	O					[61] Level	See P-14
M-6.62	DM62 ERROR [errorInformation]	M					[62] ErrorInformation	See P-9
M-6.63	DM63 NOT CURRENT DATA AUTHORITY	M					[63] NULL	
M-6.64	DM64 [facilitydesignation]	O					[64] FacilityDesignation	See M-8
M-6.65	DM65 DUE TO WEATHER	O					[65] NULL	
M-6.66	DM66 DUE TO AIRCRAFT PERFORMANCE	O					[66] NULL	
M-6.67	DM67 [freetext]	O					[67] FreeText	See M-8
M-6.68	DM68 [freetext]	O					[68] FreeText	See M-8
M-6.69	DM69 REQUEST VMC DESCENT	O					[69] NULL	
M-6.70	DM70 REQUEST HEADING [degrees]	O					[70] Degrees	See P-4
M-6.71	DM71 REQUEST GROUND TRACK [degrees]	O					[71] Degrees	See P-4
M-6.72	DM72 REACHING [level]	O					[72] Level	See P-14
M-6.73	DM73 [versionnumber]	O					[73] VersionNumber	See M-8
M-6.74	DM74 REQUEST TO MAINTAIN OWN SEPARATION AND VMC	O					[74] NULL	
M-6.75	DM75 AT PILOTS DISCRETION	O					[75] NULL	
M-6.76	DM76 REACHING BLOCK [level] TO [level]	O					[76] LevelLevel	See M-8
M-6.77	DM77 ASSIGNED BLOCK [level] TO [level]	O					[77] LevelLevel	See M-8
M-6.78	DM78 AT [time] [distance] [tofrom] [position]	O					[78] TimeDistanceToFromPosition	See M-8
M-6.79	DM79 ATIS [atiscode]	O					[79] ATISCode	See M-8
M-6.80	DM80 DEVIATING UP TO [specifiedDistance] [direction] OF ROUTE	O					[80] DistanceSpecifiedDirection	See P-8
M-6.81	DM81 WE CAN ACCEPT [level] AT [time]	O					[81] LevelTime	See M-8
M-6.82	DM82 WE CANNOT ACCEPT [level]	O					[82] Level	See P-14
M-6.83	DM83 WE CAN ACCEPT [speed] AT [time]	O					[83] SpeedTime	See M-8
M-6.84	DM84 WE CANNOT ACCEPT [speed]	O					[84] Speed	See P-22
M-6.85	DM85 WE CAN ACCEPT [specifiedDistance] [direction] AT [time]	O					[85] DistanceSpecifiedDirectionTime	See M-8
M-6.86	DM86 WE CANNOT ACCEPT [specifiedDistance] [direction]	O					[86] DistanceSpecifiedDirection	See P-8
M-6.87	DM87 WHEN CAN WE EXPECT CLIMB TO [level]	O					[87] Level	See P-14
M-6.88	DM88 WHEN CAN WE EXPECT DESCENT TO [level]	O					[88] Level	See P-14
M-6.89	DM89 MONITORING [unitname] [frequency]	O					[89] UnitNameFrequency	See M-8
M-6.90	DM90 [freetext]	O					[90] FreeText	See M-8
M-6.91	DM91 [freetext]	O					[91] FreeText	See M-8
M-6.92	DM92 [freetext]	O					[92] FreeText	See M-8
M-6.93	DM93 [freetext]	O					[93] FreeText	See M-8

Source: Chapter 4 - ASN.1		Send					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons		
M-6.94	DM94 [freetext]	O					[94] FreeText	See M-8
M-6.95	DM95 [freetext]	O					[95] FreeText	See M-8
M-6.96	DM96 [freetext]	O					[96] FreeText	See M-8
M-6.97	DM97 [freetext]	O					[97] FreeText	See M-8
M-6.98	DM98 [freetext]	O					[98] FreeText	See M-8
M-6.99	DM99 CURRENT DATA AUTHORITY	O					[99] NULL	
M-6.100	DM100 LOGICAL ACKNOWLEDGMENT	O					[100] NULL	
M-6.101	DM101 REQUEST END OF SERVICE	O					[101] NULL	
M-6.102	DM102 LANDING REPORT	O					[102] NULL	
M-6.103	DM103 CANCELLING IFR	O					[103] NULL	
M-6.104	DM104 ETA [position] [time]	O					[104] PositionTime	See M-8
M-6.105	DM105 ALTERNATIVE AERODROME [airport]	O					[105] Airport	See P-1
M-6.106	DM106 PREFERRED LEVEL [level]	O					[106] Level	
M-6.107	DM107 NOT AUTHORIZED NEXT DATA AUTHORITY	O					[107] NULL	
M-6.108	DM108 DE-ICING COMPLETE	O					[108] NULL	
M-6.109	DM109 TOP OF DESCENT [time]	O					[109] Time	See P-24
M-6.110	DM110 TOP OF DESCENT [position]	O					[110] Position	See P-15
M-6.111	DM111 TOP OF DESCENT [time] [position]	O					[111] TimePosition	See M-8
M-6.112	DM112 SQUAWKING 7500	O					[112] NULL	
M-6.113	DM113 [speedType] [speedType] [speedType] SPEED [speed]	O					[113]	See M-8
M-6.114	Use of Extensibility	X					Use of Extensibility	

Table M-7: Downlink Messages Permitted Operational Responses

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	IMP Support	
M-7.0	DM0 WILCO	N	—	—	—	
M-7.1	DM1 UNABLE	N	—	—	—	
M-7.2	DM2 STANDBY	N	—	—	—	
M-7.3	DM3 ROGER	N	—	—	—	
M-7.4	DM4 AFFIRM	N	—	—	—	
M-7.5	DM5 NEGATIVE	N	—	—	—	
M-7.6	DM6 REQUEST [level]	Y				
M-7.6.1			UM0 UNABLE			a
M-7.6.2			UM1 STANDBY			
M-7.6.3			UM2 REQUEST DEFERRED			
M-7.6.4			UM162 SERVICE UNAVAILABLE			
M-7.6.5			UM211 REQUEST FORWARDED			
M-7.6.6			UM218 REQUEST ALREADY RECEIVED			
M-7.6.7			UM234 FLIGHT PLAN NOT HELD			
M-7.6.8			UM19 MAINTAIN [level]			
M-7.6.9			UM20 CLIMB TO [level]			
M-7.6.10			UM21 AT [time] CLIMB TO [level]			
M-7.6.11			UM22 AT [position] CLIMB TO [level]			
M-7.6.12			UM23 DESCEND TO [level]			
M-7.6.13			UM24 AT [time] DESCEND TO [level]			
M-7.6.14			UM25 AT [position] DESCEND TO [level]			
M-7.6.15			UM26 CLIMB TO REACH [level] BY [time]			
M-7.6.16			UM27 CLIMB TO REACH [level] BY [position]			
M-7.6.17			UM28 DESCEND TO REACH [level] BY [time]			
M-7.6.18			UM29 DESCEND TO REACH [level] BY [position]			
M-7.6.19			UM46 CROSS [position] AT [level]			
M-7.6.20			UM47 CROSS [position] AT OR ABOVE [level]			
M-7.6.21			UM48 CROSS [position] AT OR BELOW [level]			
M-7.6.22			UM185 AFTER PASSING [position] CLIMB TO [level]			
M-7.6.23			UM186 AFTER PASSING [position] DESCEND TO [level]			
M-7.6.24			UM192 REACH [level] BY [time]			
M-7.6.25			UM209 REACH [level] BY [position]			
M-7.6.26			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.7	DM7 REQUEST BLOCK [level] TO [level]	Y				
M-7.7.1			UM0 UNABLE			a
M-7.7.2			UM1 STANDBY			
M-7.7.3			UM2 REQUEST DEFERRED			
M-7.7.4			UM162 SERVICE UNAVAILABLE			
M-7.7.5			UM211 REQUEST FORWARDED			
M-7.7.6			UM218 REQUEST ALREADY RECEIVED			
M-7.7.7			UM234 FLIGHT PLAN NOT HELD			
M-7.7.8			UM30 MAINTAIN BLOCK [level] TO [level]			
M-7.7.9			UM31 CLIMB TO AND MAINTAIN BLOCK [level] TO [level]			
M-7.7.10			UM32 DESCEND TO AND MAINTAIN BLOCK [level] TO [level]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	IMP	
		Attribute		Status	Support	
M-7.8	DM8 REQUEST CRUISE CLIMB TO [level]	Y				
M-7.8.1			UM0 UNABLE			a
M-7.8.2			UM1 STANDBY			
M-7.8.3			UM2 REQUEST DEFERRED			
M-7.8.4			UM162 SERVICE UNAVAILABLE			
M-7.8.5			UM211 REQUEST FORWARDED			
M-7.8.6			UM218 REQUEST ALREADY RECEIVED			
M-7.8.7			UM234 FLIGHT PLAN NOT HELD			
M-7.8.8			UM34 CRUISE CLIMB TO [level]			
M-7.9	DM9 REQUEST CLIMB TO [level]	Y				
M-7.9.1			UM0 UNABLE			a
M-7.9.2			UM1 STANDBY			
M-7.9.3			UM2 REQUEST DEFERRED			
M-7.9.4			UM162 SERVICE UNAVAILABLE			
M-7.9.5			UM211 REQUEST FORWARDED			
M-7.9.6			UM218 REQUEST ALREADY RECEIVED			
M-7.9.7			UM234 FLIGHT PLAN NOT HELD			
M-7.9.8			UM19 MAINTAIN [level]			
M-7.9.9			UM20 CLIMB TO [level]			
M-7.9.10			UM21 AT [time] CLIMB TO [level]			
M-7.9.11			UM22 AT [position] CLIMB TO [level]			
M-7.9.12			UM23 DESCEND TO [level]			
M-7.9.13			UM26 CLIMB TO REACH [level] BY [time]			
M-7.9.14			UM27 CLIMB TO REACH [level] BY [position]			
M-7.9.15			UM28 DESCEND TO REACH [level] BY [time]			
M-7.9.16			UM29 DESCEND TO REACH [level] BY [position]			
M-7.9.17			UM36 EXPEDITE CLIMB TO [level]			
M-7.9.18			UM38 IMMEDIATELY CLIMB TO [level]			
M-7.9.19			UM46 CROSS [position] AT [level]			
M-7.9.20			UM47 CROSS [position] AT OR ABOVE [level]			
M-7.9.21			UM48 CROSS [position] AT OR BELOW [level]			
M-7.9.22			UM185 AFTER PASSING [position] CLIMB TO [level]			
M-7.9.23			UM192 REACH [level] BY [time]			
M-7.9.24			UM209 REACH [level] BY [position]			
M-7.9.25			UM159 ERROR [errorInformation] + UM 183 [freetext]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	IMP Support	
M-7.10	DM10 REQUEST DECENT TO [level]	Y				
M-7.10.1			UM0 UNABLE			
M-7.10.2			UM1 STANDBY			
M-7.10.3			UM2 REQUEST DEFERRED			
M-7.10.4			UM162 SERVICE UNAVAILABLE			
M-7.10.5			UM211 REQUEST FORWARDED			
M-7.10.6			UM218 REQUEST ALREADY RECEIVED			
M-7.10.7			UM234 FLIGHT PLAN NOT HELD			
M-7.10.8			UM19 MAINTAIN [level]			
M-7.10.9			UM20 CLIMB TO [level]			
M-7.10.10			UM23 DESCEND TO [level]			
M-7.10.11			UM24 AT [time] DESCEND TO [level]			
M-7.10.12			UM25 AT [position] DESCEND TO [level]			
M-7.10.13			UM26 CLIMB TO REACH [level] BY [time]			
M-7.10.14			UM27 CLIMB TO REACH [level] BY [position]			
M-7.10.15			UM28 DESCEND TO REACH [level] BY [time]			
M-7.10.16			UM29 DESCEND TO REACH [level] BY [position]			
M-7.10.17			UM46 CROSS [position] AT [level]			
M-7.10.18			UM47 CROSS [position] AT OR ABOVE [level]			
M-7.10.19			UM48 CROSS [position] AT OR BELOW [level]			
M-7.10.20			UM186 AFTER PASSING [position] DESCEND TO [level]			
M-7.10.21			UM192 REACH [level] BY [time]			
M-7.10.22			UM209 REACH [level] BY [position]			
M-7.10.23			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.11	DM11 AT [position] REQUEST CLIMB TO [level]	Y				
M-7.11.1			UM0 UNABLE			
M-7.11.2			UM1 STANDBY			
M-7.11.3			UM2 REQUEST DEFERRED			
M-7.11.4			UM162 SERVICE UNAVAILABLE			
M-7.11.5			UM211 REQUEST FORWARDED			
M-7.11.6			UM218 REQUEST ALREADY RECEIVED			
M-7.11.7			UM234 FLIGHT PLAN NOT HELD			
M-7.11.8			UM19 MAINTAIN [level]			
M-7.11.9			UM20 CLIMB TO [level]			
M-7.11.10			UM22 AT [position] CLIMB TO [level]			
M-7.11.11			UM23 DESCEND TO [level]			
M-7.11.12			UM26 CLIMB TO REACH [level] BY [time]			
M-7.11.13			UM27 CLIMB TO REACH [level] BY [position]			
M-7.11.14			UM28 DESCEND TO REACH [level] BY [time]			
M-7.11.15			UM29 DESCEND TO REACH [level] BY [position]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	IMP	
		Attribute		Status	Support	
M-7.12	DM12 AT [position] REQUEST DESCENT TO [level]	Y				
M-7.12.1			UM0 UNABLE			
M-7.12.2			UM1 STANDBY			
M-7.12.3			UM2 REQUEST DEFERRED			
M-7.12.4			UM162 SERVICE UNAVAILABLE			
M-7.12.5			UM211 REQUEST FORWARDED			
M-7.12.6			UM218 REQUEST ALREADY RECEIVED			
M-7.12.7			UM234 FLIGHT PLAN NOT HELD			
M-7.12.8			UM19 MAINTAIN [level]			
M-7.12.9			UM20 CLIMB TO [level]			
M-7.12.10			UM23 DESCEND TO [level]			
M-7.12.11			UM25 AT [position] DESCEND TO [level]			
M-7.12.12			UM26 CLIMB TO REACH [level] BY [time]			
M-7.12.13			UM27 CLIMB TO REACH [level] BY [position]			
M-7.12.14			UM28 DESCEND TO REACH [level] BY [time]			
M-7.12.15			UM29 DESCEND TO REACH [level] BY [position]			
M-7.13	DM13 AT [time] REQUEST CLIMB TO [level]	Y				
M-7.13.1			UM0 UNABLE			
M-7.13.2			UM1 STANDBY			
M-7.13.3			UM2 REQUEST DEFERRED			
M-7.13.4			UM162 SERVICE UNAVAILABLE			
M-7.13.5			UM211 REQUEST FORWARDED			
M-7.13.6			UM218 REQUEST ALREADY RECEIVED			
M-7.13.7			UM234 FLIGHT PLAN NOT HELD			
M-7.13.8			UM21 AT [time] CLIMB TO [level]			
M-7.14	DM14 AT [time] REQUEST DESCENT TO [level]	Y				
M-7.14.1			UM0 UNABLE			
M-7.14.2			UM1 STANDBY			
M-7.14.3			UM2 REQUEST DEFERRED			
M-7.14.4			UM162 SERVICE UNAVAILABLE			
M-7.14.5			UM211 REQUEST FORWARDED			
M-7.14.6			UM218 REQUEST ALREADY RECEIVED			
M-7.14.7			UM234 FLIGHT PLAN NOT HELD			
M-7.14.8			UM24 AT [time] DESCEND TO [level]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	IMP Support	
M-7.15	DM15 REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	Y				
M-7.15.1			UM0 UNABLE			
M-7.15.2			UM1 STANDBY			
M-7.15.3			UM2 REQUEST DEFERRED			
M-7.15.4			UM162 SERVICE UNAVAILABLE			
M-7.15.5			UM211 REQUEST FORWARDED			
M-7.15.6			UM218 REQUEST ALREADY RECEIVED			
M-7.15.7			UM234 FLIGHT PLAN NOT HELD			
M-7.15.8			UM64 OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.15.9			UM65 AT [position] OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.15.10			UM66 AT [time] OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.15.11			UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE			
M-7.16	DM16 AT [position] REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	Y				
M-7.16.1			UM0 UNABLE			
M-7.16.2			UM1 STANDBY			
M-7.16.3			UM2 REQUEST DEFERRED			
M-7.16.4			UM162 SERVICE UNAVAILABLE			
M-7.16.5			UM211 REQUEST FORWARDED			
M-7.16.6			UM218 REQUEST ALREADY RECEIVED			
M-7.16.7			UM234 FLIGHT PLAN NOT HELD			
M-7.16.8			UM65 AT [position] OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.16.9			UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE			
M-7.17	DM17 AT [time] REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	Y				
M-7.17.1			UM0 UNABLE			
M-7.17.2			UM1 STANDBY			
M-7.17.3			UM2 REQUEST DEFERRED			
M-7.17.4			UM162 SERVICE UNAVAILABLE			
M-7.17.5			UM211 REQUEST FORWARDED			
M-7.17.6			UM218 REQUEST ALREADY RECEIVED			
M-7.17.7			UM234 FLIGHT PLAN NOT HELD			
M-7.17.8			UM66 AT [time] OFFSET [specifiedDistance] [direction] OF ROUTE			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	IMP Support	
M-7.18	DM18 REQUEST [speed]	Y				
M-7.18.1			UM0 UNABLE			
M-7.18.2			UM1 STANDBY			
M-7.18.3			UM2 REQUEST DEFERRED			
M-7.18.4			UM162 SERVICE UNAVAILABLE			
M-7.18.5			UM211 REQUEST FORWARDED			
M-7.18.6			UM218 REQUEST ALREADY RECEIVED			
M-7.18.7			UM234 FLIGHT PLAN NOT HELD			
M-7.18.8			UM55 CROSS [position] AT [speed]			
M-7.18.9			UM61 CROSS [position] AT AND MAINTAIN [level] AT [speed]			
M-7.18.10			UM106 MAINTAIN [speed]			
M-7.18.11			UM107 MAINTAIN PRESENT SPEED			
M-7.18.12			UM108 MAINTAIN [speed] OR GREATER			
M-7.18.13			UM109 MAINTAIN [speed] OR LESS			
M-7.18.14			UM111 INCREASE SPEED TO [speed]			
M-7.18.15			UM112 INCREASE SPEED TO [speed] OR GREATER			
M-7.18.16			UM113 REDUCE SPEED TO [speed]			
M-7.18.17			UM114 REDUCE SPEED TO [speed] OR LESS			
M-7.18.18			UM115 DO NOT EXCEED [speed]			
M-7.18.19			UM116 RESUME NORMAL SPEED			
M-7.18.20			UM189 ADJUST SPEED TO [speed]			
M-7.18.21			UM222 NO SPEED RESTRICTION			
M-7.18.22			UM159 ERROR [errorInformation] + UM 183 [freertext]			
M-7.19	DM19 REQUEST [speed] TO [speed]	Y				
M-7.19.1			UM0 UNABLE			
M-7.19.2			UM1 STANDBY			
M-7.19.3			UM2 REQUEST DEFERRED			
M-7.19.4			UM162 SERVICE UNAVAILABLE			
M-7.19.5			UM211 REQUEST FORWARDED			
M-7.19.6			UM218 REQUEST ALREADY RECEIVED			
M-7.19.7			UM234 FLIGHT PLAN NOT HELD			
M-7.19.8			UM110 MAINTAIN [speed] TO [speed]			
M-7.20	DM20 REQUEST VOICE CONTACT	Y				
M-7.20.1			UM0 UNABLE			
M-7.20.2			UM1 STANDBY			
M-7.20.3			UM2 REQUEST DEFERRED			
M-7.20.4			UM162 SERVICE UNAVAILABLE			
M-7.20.5			UM211 REQUEST FORWARDED			
M-7.20.6			UM218 REQUEST ALREADY RECEIVED			
M-7.20.7			UM234 FLIGHT PLAN NOT HELD			
M-7.20.8			UM117 CONTACT [unitname] [frequency]			
M-7.20.9			UM118 AT [position] CONTACT [unitname] [frequency]			
M-7.20.10			UM119 AT [time] CONTACT [unitname] [frequency]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	IMP	
		Attribute		Status	Support	
M-7.21	DM21 REQUEST VOICE CONTACT [frequency]	Y				
M-7.21.1			UM0 UNABLE			
M-7.21.2			UM1 STANDBY			
M-7.21.3			UM2 REQUEST DEFERRED			
M-7.21.4			UM162 SERVICE UNAVAILABLE			
M-7.21.5			UM211 REQUEST FORWARDED			
M-7.21.6			UM218 REQUEST ALREADY RECEIVED			
M-7.21.7			UM234 FLIGHT PLAN NOT HELD			
M-7.21.8			UM117 CONTACT [unitname] [frequency]			
M-7.21.9			UM118 AT [position] CONTACT [unitname] [frequency]			
M-7.21.10			UM119 AT [time] CONTACT [unitname] [frequency]			
M-7.22	DM22 REQUEST DIRECT TO [position]	Y				
M-7.22.1			UM0 UNABLE			
M-7.22.2			UM1 STANDBY			
M-7.22.3			UM2 REQUEST DEFERRED			
M-7.22.4			UM162 SERVICE UNAVAILABLE			
M-7.22.5			UM211 REQUEST FORWARDED			
M-7.22.6			UM218 REQUEST ALREADY RECEIVED			
M-7.22.7			UM234 FLIGHT PLAN NOT HELD			
M-7.22.8			UM74 PROCEED DIRECT TO [position]			
M-7.22.9			UM75 WHEN ABLE PROCEED DIRECT TO [position]			
M-7.22.10			UM76 AT [time] PROCEED DIRECT TO [position]			
M-7.22.11			UM77 AT [position] PROCEED DIRECT TO [position]			
M-7.22.12			UM78 AT [level] PROCEED DIRECT TO [position]			
M-7.22.13			UM96 CONTINUE PRESENT HEADING			
M-7.22.14			UM190 FLY HEADING [degrees]			
M-7.22.15			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.23	DM23 REQUEST [procedureName]	Y				
M-7.23.1			UM0 UNABLE			
M-7.23.2			UM1 STANDBY			
M-7.23.3			UM2 REQUEST DEFERRED			
M-7.23.4			UM162 SERVICE UNAVAILABLE			
M-7.23.5			UM211 REQUEST FORWARDED			
M-7.23.6			UM218 REQUEST ALREADY RECEIVED			
M-7.23.7			UM234 FLIGHT PLAN NOT HELD			
M-7.23.8			UM81 CLEARED [procedure name]			
M-7.23.9			UM84 AT [position] CLEARED [procedureName]			
M-7.23.10			UM99 EXPECT [procedureName]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	IMP Support	
M-7.24	DM24 REQUEST [routeClearance]	Y				
M-7.24.1			UM0 UNABLE			
M-7.24.2			UM1 STANDBY			
M-7.24.3			UM2 REQUEST DEFERRED			
M-7.24.4			UM162 SERVICE UNAVAILABLE			
M-7.24.5			UM211 REQUEST FORWARDED			
M-7.24.6			UM218 REQUEST ALREADY RECEIVED			
M-7.24.7			UM234 FLIGHT PLAN NOT HELD			
M-7.24.8			UM79 CLEARED TO [position] VIA [routeClearance]			
M-7.24.9			UM80 CLEARED [route clearance]			
M-7.24.10			UM83 AT [position] CLEARED [routeClearance]			
M-7.24.11			UM85 EXPECT [routeClearance]			
M-7.24.12			UM86 AT [position] EXPECT [routeClearance]			
M-7.25	DM25 REQUEST [ClearanceType] CLEARANCE	Y				
M-7.25.1			UM0 UNABLE			
M-7.25.2			UM1 STANDBY			
M-7.25.3			UM2 REQUEST DEFERRED			
M-7.25.4			UM162 SERVICE UNAVAILABLE			
M-7.25.5			UM211 REQUEST FORWARDED			
M-7.25.6			UM218 REQUEST ALREADY RECEIVED			
M-7.25.7			UM234 FLIGHT PLAN NOT HELD			
M-7.25.8			UM73 [DepartureClearance]			
M-7.25.9			UM79 CLEARED TO [position] VIA [routeClearance]			
M-7.25.10			UM80 CLEARED [route clearance]			
M-7.25.11			UM81 CLEARED [procedure name]			
M-7.25.12			UM83 AT [position] CLEARED [routeClearance]			
M-7.25.13			UM84 AT [position] CLEARED [procedureName]			
M-7.25.14			UM85 EXPECT [routeClearance]			
M-7.25.15			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.26	DM26 REQUEST WEATHER DEVIATION TO [position] VIA [routeClearance]	Y				
M-7.26.1			UM0 UNABLE			
M-7.26.2			UM1 STANDBY			
M-7.26.3			UM2 REQUEST DEFERRED			
M-7.26.4			UM162 SERVICE UNAVAILABLE			
M-7.26.5			UM211 REQUEST FORWARDED			
M-7.26.6			UM218 REQUEST ALREADY RECEIVED			
M-7.26.7			UM234 FLIGHT PLAN NOT HELD			
M-7.26.8			UM79 CLEARED TO [position] VIA [routeClearance]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	IMP Support	
M-7.27	DM27 REQUEST WEATHER DEVIATION UP TO [specifiedDistance] [direction] OF ROUTE	Y				
M-7.27.1			UM0 UNABLE			
M-7.27.2			UM1 STANDBY			
M-7.27.3			UM2 REQUEST DEFERRED			
M-7.27.4			UM162 SERVICE UNAVAILABLE			
M-7.27.5			UM211 REQUEST FORWARDED			
M-7.27.6			UM218 REQUEST ALREADY RECEIVED			
M-7.27.7			UM234 FLIGHT PLAN NOT HELD			
M-7.27.8			UM64 OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.27.9			UM74 PROCEED DIRECT TO [position]			
M-7.27.10			UM75 WHEN ABLE PROCEED DIRECT TO [position]			
M-7.27.11			UM77 AT [position] PROCEED DIRECT TO [position]			
M-7.27.12			UM78 AT [level] PROCEED DIRECT TO [position]			
M-7.27.13			UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE			
M-7.27.14			UM96 CONTINUE PRESENT HEADING			
M-7.27.15			UM190 FLY HEADING [degrees]			
M-7.27.16			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.28	DM28 LEAVING [level]	N	—	—	—	
M-7.29	DM29 CLIMBING TO [level]	N	—	—	—	
M-7.30	DM30 DESCENDING TO [level]	N	—	—	—	
M-7.31	DM31 PASSING [position]	N	—	—	—	
M-7.32	DM32 PRESENT LEVEL [level]	N	—	—	—	
M-7.33	DM33 PRESENT POSITION [position]	N	—	—	—	
M-7.34	DM34 PRESENT SPEED [speed]	N	—	—	—	
M-7.35	DM35 PRESENT HEADING [degrees]	N	—	—	—	
M-7.36	DM36 PRESENT GROUND TRACK [degrees]	N	—	—	—	
M-7.37	DM37 MAINTAINING [level]	N	—	—	—	
M-7.38	DM38 ASSIGNED LEVEL [level]	N	—	—	—	
M-7.39	DM39 ASSIGNED SPEED [speed]	N	—	—	—	
M-7.40	DM40 ASSIGNED ROUTE [routeClearance]	N	—	—	—	
M-7.41	DM41 BACK ON ROUTE	N	—	—	—	
M-7.42	DM42 NEXT WAYPOINT [position]	N	—	—	—	
M-7.43	DM43 NEXT WAYPOINT ETA [time]	N	—	—	—	
M-7.44	DM44 ENSUING WAYPOINT [position]	N	—	—	—	
M-7.45	DM45 REPORTED WAYPOINT [position]	N	—	—	—	
M-7.46	DM46 REPORTED WAYPOINT [time]	N	—	—	—	
M-7.47	DM47 SQUAWKING [code]	N	—	—	—	
M-7.48	DM48 POSITION REPORT [positionreport]	N	—	—	—	
M-7.49	DM49 WHEN CAN WE EXPECT [speed]	Y				
M-7.49.1			UM0 UNABLE			
M-7.49.2			UM1 STANDBY			
M-7.49.3			UM2 REQUEST DEFERRED			
M-7.49.4			UM162 SERVICE UNAVAILABLE			
M-7.49.5			UM211 REQUEST FORWARDED			
M-7.49.6			UM218 REQUEST ALREADY RECEIVED			
M-7.49.7			UM234 FLIGHT PLAN NOT HELD			
M-7.49.8			UM100 AT [time] EXPECT [speed]			
M-7.49.9			UM101 AT [position] EXPECT [speed]			
M-7.49.10			UM102 AT [level] EXPECT [speed]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	IMP	
		Attribute		Status	Support	
M-7.50	DM50 WHEN CAN WE EXPECT [speed] TO [speed]	Y				
M-7.50.1			UM0 UNABLE			
M-7.50.2			UM1 STANDBY			
M-7.50.3			UM2 REQUEST DEFERRED			
M-7.50.4			UM162 SERVICE UNAVAILABLE			
M-7.50.5			UM211 REQUEST FORWARDED			
M-7.50.6			UM218 REQUEST ALREADY RECEIVED			
M-7.50.7			UM234 FLIGHT PLAN NOT HELD			
M-7.50.8			UM100 AT [time] EXPECT [speed]			
M-7.50.9			UM101 AT [position] EXPECT [speed]			
M-7.50.10			UM102 AT [level] EXPECT [speed]			
M-7.50.11			UM103 AT [time] EXPECT [speed] TO [speed]			
M-7.50.12			UM104 AT [position] EXPECT [speed] TO [speed]			
M-7.50.13			UM105 AT [level] EXPECT [speed] TO [speed]			
M-7.51	DM51 WHEN CAN WE EXPECT BACK ON ROUTE	Y				
M-7.51.1			UM0 UNABLE			
M-7.51.2			UM1 STANDBY			
M-7.51.3			UM2 REQUEST DEFERRED			
M-7.51.4			UM162 SERVICE UNAVAILABLE			
M-7.51.5			UM211 REQUEST FORWARDED			
M-7.51.6			UM218 REQUEST ALREADY RECEIVED			
M-7.51.7			UM234 FLIGHT PLAN NOT HELD			
M-7.51.8			UM67 PROCEED BACK ON ROUTE			
M-7.51.9			UM68 REJOIN ROUTE BY [position]			
M-7.51.10			UM69 REJOIN ROUTE BY [time]			
M-7.51.11			UM70 EXPECT BACK ON ROUTE BY [position]			
M-7.51.12			UM71 EXPECT BACK ON ROUTE BY [time]			
M-7.52	DM52 WHEN CAN WE EXPECT LOWER LEVEL	Y				
M-7.52.1			UM0 UNABLE			
M-7.52.2			UM1 STANDBY			
M-7.52.3			UM2 REQUEST DEFERRED			
M-7.52.4			UM162 SERVICE UNAVAILABLE			
M-7.52.5			UM211 REQUEST FORWARDED			
M-7.52.6			UM218 REQUEST ALREADY RECEIVED			
M-7.52.7			UM234 FLIGHT PLAN NOT HELD			
M-7.52.8			UM9 EXPECT DESCENT AT [time]			
M-7.52.9			UM10 EXPECT DESCENT AT [position]			
M-7.52.10			UM15 AT [time] EXPECT DESCENT TO [level]			
M-7.52.11			UM16 AT [position] EXPECT DESCENT TO [level]			
M-7.53	DM53 WHEN CANWE EXPECT HIGHER LEVEL	Y				

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	IMP Support	
M-7.53.1			UM0 UNABLE			
M-7.53.2			UM1 STANDBY			
M-7.53.3			UM2 REQUEST DEFERRED			
M-7.53.4			UM162 SERVICE UNAVAILABLE			
M-7.53.5			UM211 REQUEST FORWARDED			
M-7.53.6			UM218 REQUEST ALREADY RECEIVED			
M-7.53.7			UM234 FLIGHT PLAN NOT HELD			
M-7.53.8			UM7 EXPECT CLIMB AT [time]			
M-7.53.9			UM8 EXPECT CLIMB AT [position]			
M-7.53.10			UM13 AT [time] EXPECT CLIMB TO [level]			
M-7.53.11			UM14 AT [position] EXPECT CLIMB TO [level]			
M-7.54	DM54 WHEN CAN WE EXPECT CRUISE CLIMB TO [level]	Y				
M-7.54.1			UM0 UNABLE			
M-7.54.2			UM1 STANDBY			
M-7.54.3			UM2 REQUEST DEFERRED			
M-7.54.4			UM162 SERVICE UNAVAILABLE			
M-7.54.5			UM211 REQUEST FORWARDED			
M-7.54.6			UM218 REQUEST ALREADY RECEIVED			
M-7.54.7			UM234 FLIGHT PLAN NOT HELD			
M-7.54.8			UM11 EXPECT CRUISE CLIMB AT [time]			
M-7.54.9			UM12 EXPECT CRUISE CLIMB AT [position]			
M-7.54.10			UM17 AT [time] EXPECT CRUISE CLIMB TO [level]			
M-7.54.11			UM18 AT [position] EXPECT CRUISE CLIMB TO [level]			
M-7.55	DM55 PAN PAN PAN	Y				
M-7.55.1			UM3 ROGER			
M-7.55.2			UM162 SERVICE UNAVAILABLE			
M-7.56	DM56 MAYDAY MAYDAY MAYDAY	Y				
M-7.56.1			UM0 UNABLE			
M-7.56.2			UM1 STANDBY			
M-7.56.3			UM3 ROGER			
M-7.57	DM57 [remainingFuel] OF FUEL REMAINING AND [personsonboard] PERSONS ON BOARD	Y				
M-7.57.1			UM3 ROGER			
M-7.58	DM58 CANCEL EMERGENCY	Y				
M-7.58.1			UM3 ROGER			
M-7.59	DM59 DIVERTING TO [position] VIA [routeClearance]	Y				
M-7.59.1			UM3 ROGER			
M-7.60	DM60 OFFSETTING [specifiedDistance] [direction] OF ROUTE	Y				
M-7.60.1			UM3 ROGER			
M-7.61	DM61 DESCENDING TO [level]	Y				
M-7.61.1			UM3 ROGER			
M-7.62	DM62 ERROR [errorInformation]	N	—	—	—	
M-7.63	DM63 NOT CURRENT DATA AUTHORITY	N	—	—	—	
M-7.64	DM64 [facilitydesignation]	N	—	—	—	
M-7.65	DM65 DUE TO WEATHER	N	—	—	—	
M-7.66	DM66 DUE TO AIRCRAFT PERFORMANCE	N	—	—	—	
M-7.67	DM67 [freetext]	N	—	—	—	
M-7.68	DM68 [freetext]	Y				
M-7.69	DM69 REQUEST VMC DESCENT	Y				

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	IMP	
		Attribute		Status	Support	
M-7.69.1			UM0 UNABLE			
M-7.69.2			UM1 STANDBY			
M-7.69.3			UM2 REQUEST DEFERRED			
M-7.69.4			UM162 SERVICE UNAVAILABLE			
M-7.69.5			UM211 REQUEST FORWARDED			
M-7.69.6			UM218 REQUEST ALREADY RECEIVED			
M-7.69.7			UM234 FLIGHT PLAN NOT HELD			
M-7.69.8			UM3 ROGER			
M-7.69.9			UM176 MAINTAIN OWN SEPARATION AND VMC			
M-7.70	DM70 REQUEST HEADING [degrees]	Y				
M-7.70.1			UM0 UNABLE			
M-7.70.2			UM1 STANDBY			
M-7.70.3			UM2 REQUEST DEFERRED			
M-7.70.4			UM162 SERVICE UNAVAILABLE			
M-7.70.5			UM211 REQUEST FORWARDED			
M-7.70.6			UM218 REQUEST ALREADY RECEIVED			
M-7.70.7			UM234 FLIGHT PLAN NOT HELD			
M-7.70.8			UM94 TURN [direction] HEADING [degrees]			
M-7.70.9			UM97 AT [position] FLY HEADING [degrees]			
M-7.70.10			UM190 FLY HEADING [degrees]			
M-7.71	DM71 REQUEST GROUND TRACK [degrees]	Y				
M-7.71.1			UM0 UNABLE			
M-7.71.2			UM1 STANDBY			
M-7.71.3			UM2 REQUEST DEFERRED			
M-7.71.4			UM162 SERVICE UNAVAILABLE			
M-7.71.5			UM211 REQUEST FORWARDED			
M-7.71.6			UM218 REQUEST ALREADY RECEIVED			
M-7.71.7			UM234 FLIGHT PLAN NOT HELD			
M-7.71.8			UM95 TURN [direction] GROUND TRACK [degrees]			
M-7.72	DM72 REACHING [level]	N	—	—	—	
M-7.73	DM73 [versionnumber]	N	—	—	—	
M-7.74	DM74 REQUEST TO MAINTAIN OWN SEPARATION AND VMC	Y				
M-7.74.1			UM0 UNABLE			
M-7.74.2			UM1 STANDBY			
M-7.74.3			UM2 REQUEST DEFERRED			
M-7.74.4			UM162 SERVICE UNAVAILABLE			
M-7.74.5			UM211 REQUEST FORWARDED			
M-7.74.6			UM218 REQUEST ALREADY RECEIVED			
M-7.74.7			UM234 FLIGHT PLAN NOT HELD			
M-7.74.8			UM176 MAINTAIN OWN SEPARATION AND VMC			
M-7.75	DM75 AT PILOTS DISCRETION	N	—	—	—	
M-7.76	DM76 REACHING BLOCK [level] TO [level]	N	—	—	—	
M-7.77	DM77 ASSIGNED BLOCK [level] TO [level]	N	—	—	—	
M-7.78	DM78 AT [time] [distance] [tofrom] [position]	N	—	—	—	
M-7.79	DM79 ATIS [atiscode]	N	—	—	—	
M-7.80	DM80 DEVIATING UP TO [specifiedDistance] [direction] OF ROUTE	Y				
M-7.80.1			UM0 UNABLE			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	IMP	
		Attribute		Status	Support	
M-7.80.2			UM1 STANDBY			
M-7.80.3			UM3 ROGER			
M-7.80.4			UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE			
M-7.81	DM81 WE CAN ACCEPT [level] AT [time]	N	—	—	—	
M-7.82	DM82 WE CANNOT ACCEPT [level]	N	—	—	—	
M-7.83	DM83 WE CAN ACCEPT [speed] AT [time]	N	—	—	—	
M-7.84	DM84 WE CANNOT ACCEPT [speed]	N	—	—	—	
M-7.85	DM85 WE CAN ACCEPT [specifiedDistance] [direction] AT [time]	N	—	—	—	
M-7.86	DM86 WE CANNOT ACCEPT [specifiedDistance] [direction]	N	—	—	—	
M-7.87	DM87 WHEN CAN WE EXPECT CLIMB TO [level]	Y				
M-7.87.1			UM0 UNABLE			
M-7.87.2			UM1 STANDBY			
M-7.87.3			UM2 REQUEST DEFERRED			
M-7.87.4			UM162 SERVICE UNAVAILABLE			
M-7.87.5			UM211 REQUEST FORWARDED			
M-7.87.6			UM218 REQUEST ALREADY RECEIVED			
M-7.87.7			UM234 FLIGHT PLAN NOT HELD			
M-7.87.8			UM7 EXPECT CLIMB AT [time]			
M-7.87.9			UM8 EXPECT CLIMB AT [position]			
M-7.87.10			UM13 AT [time] EXPECT CLIMB TO [level]			
M-7.87.11			UM14 AT [position] EXPECT CLIMB TO [level]			
M-7.88	DM88 WHEN CAN WE EXPECT DESCENT TO [level]	Y				
M-7.88.1			UM0 UNABLE			
M-7.88.2			UM1 STANDBY			
M-7.88.3			UM2 REQUEST DEFERRED			
M-7.88.4			UM162 SERVICE UNAVAILABLE			
M-7.88.5			UM211 REQUEST FORWARDED			
M-7.88.6			UM218 REQUEST ALREADY RECEIVED			
M-7.88.7			UM234 FLIGHT PLAN NOT HELD			
M-7.88.8			UM9 EXPECT DESCENT AT [time]			
M-7.88.9			UM10 EXPECT DESCENT AT [position]			
M-7.88.10			UM15 AT [time] EXPECT DESCENT TO [level]			
M-7.88.11			UM16 AT [position] EXPECT DESCENT TO [level]			
M-7.89	DM89 MONITORING [unitname] [frequency]	N	—	—	—	
M-7.90	DM90 [freetext]	N	—	—	—	
M-7.91	DM91 [freetext]	Y				
M-7.92	DM92 [freetext]	N	—	—	—	
M-7.93	DM93 [freetext]	N	—	—	—	
M-7.94	DM94 [freetext]	N	—	—	—	
M-7.95	DM95 [freetext]	N	—	—	—	
M-7.96	DM96 [freetext]	N	—	—	—	
M-7.97	DM97 [freetext]	N	—	—	—	
M-7.98	DM98 [freetext]	N	—	—	—	
M-7.99	DM99 CURRENT DATA AUTHORITY	N	—	—	—	
M-7.100	DM100 LOGICAL ACKNOWLEDGMENT	N	—	—	—	
M-7.101	DM101 REQUEST END OF SERVICE	Y				

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	IMP	
		Attribute		Status	Support	
M-7.101.1			UM0 UNABLE			
M-7.101.2			UM1 STANDBY			
M-7.101.3			UM2 REQUEST DEFERRED			
M-7.101.4			UM162 SERVICE UNAVAILABLE			
M-7.101.5			UM211 REQUEST FORWARDED			
M-7.101.6			UM218 REQUEST ALREADY RECEIVED			
M-7.101.7			UM234 FLIGHT PLAN NOT HELD			
M-7.101.8			UM161 END SERVICE			
M-7.102	DM102 LANDING REPORT	N	—	—	—	
M-7.103	DM103 CANCELLING IFR	Y				
M-7.103.1			UM3 ROGER			
M-7.104	DM104 ETA [position] [time]	N	—	—	—	
M-7.105	DM105 ALTERNATIVE AERODROME [airport]	N	—	—	—	
M-7.106	DM106 PREFERRED LEVEL [level]	N	—	—	—	
M-7.107	DM107 NOT AUTHORIZED NEXT DATA AUTHORITY	N	—	—	—	
M-7.108	DM108 DE-ICING COMPLETE	N	—	—	—	
M-7.109	DM109 TOP OF DESCENT [time]	N	—	—	—	
M-7.110	DM110 TOP OF DESCENT [position]	N	—	—	—	
M-7.111	DM111 TOP OF DESCENT [time] [position]	N	—	—	—	
M-7.112	DM112 SQUAWKING 7500	N	—	—	—	
M-7.113	DM113 [speedType] [speedType] [speedType] SPEED [speed]	N	—	—	—	

Notes:

- a UM0 UNABLE, may be qualified by UM166 DUE TO [traffic type] or UM167 DUE TO AIRSPACE RESTRICTION

Table M-8: Compound Message Parameter Elements

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.1	ATISCode	M					M					IA5String SIZE(1)	1
M-8.2	Code	M					M					SEQUENCE SIZE(4) OF CodeOctalDigit	2
M-8.2.1	CodeOctalDigit											INTEGER (0..7)	
M-8.3	Direction Degrees											DirectionDegrees ::= SEQUENCE	3
M-8.3.1	Direction	—	—	—	—	—	M					Direction	See P-6
M-8.3.2	Degrees	—	—	—	—	—	M					Degrees	See P-4
M-8.4	Distance Specified Direction Time											DistanceSpecifiedDirectionTime ::= SEQUENCE	4
M-8.4.1	Distance Specified Direction	M					—	—	—	—	—	DistanceSpecifiedDirection	See P-8
M-8.4.2	Time	M					—	—	—	—	—	Time	See P-24
M-8.5	Facility											Facility ::= CHOICE	5
M-8.5.1	No Facility	—	—	—	—	—	C					[0] NULL	
M-8.5.2	Facility Designation	—	—	—	—	—	C					[1] FacilityDesignation	
M-8.5.2	Facility Designation											IA5String SIZE(4..8)	
M-8.6	Facility Designation											IA5String SIZE(4..8)	6, a
M-8.7	Facility Designation Altimeter											FacilityDesignationAltimeter ::= SEQUENCE	7
M-8.7.1	Facility Designation	—	—	—	—	—	M					FacilityDesignation	
M-8.7.2	Altimeter	—	—	—	—	—	M					Altimeter	See P-2
M-8.7.1	Facility Designation											IA5String SIZE(4..8)	
M-8.8	Facility Designation ATIS Code											FacilityDesignationATISCode ::= SEQUENCE	8
M-8.8.1	Facility Designation	—	—	—	—	—	M					FacilityDesignation	
M-8.8.2	ATIS Code	—	—	—	—	—	M					ATISCode	
M-8.8.1	Facility Designation											IA5String SIZE(4..8)	
M-8.8.2	ATISCode											IA5String SIZE(1)	
M-8.9	Free Text	M					M					IA5String SIZE(1..256)	9
M-8.10	LevelLevel	M					M					SEQUENCE SIZE(2) OF Level	10, See P-14
M-8.11	Level Position											LevelPosition ::= SEQUENCE	11
M-8.11.1	Level	—	—	—	—	—	M					Level	See P-14
M-8.11.2	Position	—	—	—	—	—	M					Position	See P-15
M-8.12	Level Speed											LevelSpeed ::= SEQUENCE	12

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.12.1	Level	—	—	—	—	—	M					Level	See P-14
M-8.12.2	Speed	—	—	—	—	—	M					Speed	See P-22
M-8.13	Level Speed Speed											LevelSpeedSpeed ::= SEQUENCE	13
M-8.13.1	Level	—	—	—	—	—	M					Level	See P-14
M-8.13.2	Speeds	—	—	—	—	—	M					SpeedSpeed	
M-8.13.2	SpeedSpeed	—	—	—	—	—	M					SEQUENCE SIZE(2) OF Speed	See P-22
M-8.14	Level Time											LevelTime ::= SEQUENCE	14
M-8.14.1	Level	M					M					Level	See P-14
M-8.14.2	Time	M					M					Time	See P-24
M-8.15	PositionDegrees											PositionDegrees ::= SEQUENCE	15
M-8.15.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.15.2	Degrees	—	—	—	—	—	M					Degrees	See P-6
M-8.16	Position Distance Specified Direction											PositionDistanceSpecifiedDirection ::= SEQUENCE	16
M-8.16.1	Position	M					M					Position	See P-15
M-8.16.2	Distance Specified Direction	M					M					DistanceSpecifiedDirection	See P-8
M-8.17	PositionLevel											PositionLevel ::= SEQUENCE	17
M-8.17.1	Position	M					M					Position	See P-15
M-8.17.2	Level	M					M					Level	See P-14
M-8.18	Position Level Level											PositionLevelLevel ::= SEQUENCE	18
M-8.18.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.18.2	Levels	—	—	—	—	—	M					LevelLevel	
M-8.18.2	LevelLevel	—	—	—	—	—	M					SEQUENCE SIZE(2) OF Level	See P-14
M-8.19	Position Level Speed											PositionLevelSpeed ::= SEQUENCE	19
M-8.19.1	Position Level	—	—	—	—	—	M					PositionLevel	
M-8.19.2	Speed	—	—	—	—	—	M					Speed	See P-22
M-8.19.1	PositionLevel											PositionLevel ::= SEQUENCE	
M-8.19.1.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.19.1.2	Level	—	—	—	—	—	M					Level	See P-14
M-8.20	PositionPosition	—	—	—	—	—	M					SEQUENCE SIZE(2) OF Position	20, See P-15
M-8.21	Position Procedure Name											PositionProcedureName ::= SEQUENCE	21
M-8.21.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.21.2	Procedure Name	—	—	—	—	—	M					ProcedureName	See P-17
M-8.22	Position Route Clearance Index											PositionRouteClearanceIndex ::= SEQUENCE	22
M-8.22.1	Position	M					M					Position	See P-15
M-8.22.2	RouteClearanceIndex	M					M					RouteClearanceIndex	See P-19

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.23	Position Speed											PositionSpeed ::= SEQUENCE	23
M-8.23.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.23.2	Speed	—	—	—	—	—	M					Speed	See P-22
M-8.24	Position Speed Speed											PositionSpeedSpeed ::= SEQUENCE	24
M-8.24.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.24.2	Speeds	—	—	—	—	—	M					SpeedSpeed	
M-8.24.2	SpeedSpeed	—	—	—	—	—	M					SEQUENCE SIZE(2) OF Speed	See P-22
M-8.25	Position Time											PositionTime ::= SEQUENCE	25
M-8.25.1	Position	M					M					Position	See P-15
M-8.25.2	Time	M					M					Time	See P-24
M-8.26	Position Time Level											PositionTimeLevel ::= SEQUENCE	26
M-8.26.1	Position Time	—	—	—	—	—	M					PositionTime	
M-8.26.2	Level	—	—	—	—	—	M					Level	See P-14
M-8.26.1	Position Time											PositionTime ::= SEQUENCE	
M-8.26.1.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.26.1.2	Time	—	—	—	—	—	M					Time	See P-24
M-8.27	Position Time Time											PositionTimeTime ::= SEQUENCE	27
M-8.27.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.27.2	Times	—	—	—	—	—	M					TimeTime	
M-8.27.2	TimeTime	—	—	—	—	—	M					SEQUENCE SIZE (2) OF Time	See P-24
M-8.28	Position Unit Name Frequency											PositionUnitNameFrequency ::= SEQUENCE	28
M-8.28.1	Position	—	—	—	—	—	M					Position	See P-15
M-8.28.2	Unit Name	—	—	—	—	—	M					UnitName	See P-25
M-8.28.3	Frequency	—	—	—	—	—	M					Frequency	See P-10
M-8.29	Remaining Fuel Persons On Board											RemainingFuelPersonsOnBoard ::= SEQUENCE	29
M-8.29.1	Remaining Fuel	M					—	—	—	—	—	Time	See P-24
M-8.29.2	Persons On Board	M					—	—	—	—	—	PersonsOnBoard	
M-8.29.2	Persons On Board											INTEGER (1..1024)	
M-8.30	Runway RVR											RunwayRVR ::= SEQUENCE	30
M-8.30.1	Runway	—	—	—	—	—	M					Runway	See P-21
M-8.30.2	RVR	—	—	—	—	—	M					RVR	
M-8.30.2	RVR											RVR ::= CHOICE	
M-8.30.2.1	RVR Feet	—	—	—	—	—	C					[0] RVRFeet	
M-8.30.2.2	RVR Meters	—	—	—	—	—	C					[1] RVRMeters	
M-8.30.2.1	RVRFeet (0 to 6100 feet)											INTEGER (0..6100)	

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.30.2.2	RVRMeters (0 to 1500 meters)											INTEGER (0..1500)	
M-8.31	SpeedSpeed	M					M					SEQUENCE SIZE (2) OF Speed	31, See P-22
M-8.32	Speed Time											SpeedTime ::= SEQUENCE	32
M-8.32.1	Speed	M					—	—	—	—	—	Speed	See P-22
M-8.32.1	Time	M					—	—	—	—	—	Time	See P-24
M-8.33	SpeedTypeSpeedTypeSpeedType	—	—	—	—	—	M					SEQUENCE SIZE (3) OF SpeedType	33, See P-23
M-8.34	SpeedTypeSpeedTypeSpeedTypeSpeed											SpeedTypeSpeedTypeSpeedTypeSpeed ::= SEQUENCE	34
M-8.34.1	Speed Types	M					—	—	—	—	—	SpeedTypeSpeedTypeSpeedType	
M-8.34.2	Speed	M					—	—	—	—	—	Speed	See P-22
M-8.34.1	SpeedTypeSpeedTypeSpeedType	M					—	—	—	—	—	SEQUENCE SIZE(3) OF SpeedType	See P-23
M-8.35	Time Distance Specified Direction											TimeDistanceSpecifiedDirection ::= SEQUENCE	35
M-8.35.1	Time	M					M					Time	See P-24
M-8.35.2	DistanceSpecifiedDirection	M					M					DistanceSpecifiedDirection	See P-8
M-8.36	Time Distance To From Position											TimeDistanceToFromPosition ::= SEQUENCE	36
M-8.36.1	Time	M					—	—	—	—	—	Time	See P-24
M-8.36.2	Distance	M					—	—	—	—	—	Distance	See P-7
M-8.36.3	To From	M					—	—	—	—	—	ToFrom	
M-8.36.4	Position	M					—	—	—	—	—	Position	See P-15
M-8.36.3	To From											ToFrom ::= ENUMERATED	
M-8.36.3.1	To	M					—	—	—	—	—	(0) to	
M-8.36.3.2	From	M					—	—	—	—	—	(1) from	
M-8.37	Time Level											TimeLevel ::= SEQUENCE	37
M-8.37.1	Time	M					M					Time	See P-24
M-8.37.2	Level	M					M					Level	See P-14
M-8.38	Time Position											TimePosition ::= SEQUENCE	38
M-8.38.1	Time	M					M					Time	See P-24
M-8.38.2	Position	M					M					Position	See P-15
M-8.39	Time Position Level											TimePositionLevel ::= SEQUENCE	39
M-8.39.1	Time Position	—	—	—	—	—	M					TimePosition	
M-8.39.2	Level	—	—	—	—	—	M					Level	See P-14
M-8.39.1	Time Position											TimePosition ::= SEQUENCE	
M-8.39.1.1	Time	—	—	—	—	—	M					Time	See P-24
M-8.39.1.2	Position	—	—	—	—	—	M					Position	See P-15

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
M-8.40	Time Position Level Speed											TimePositionLevelSpeed ::= SEQUENCE 40
M-8.40.1	Time	—	—	—	—	—	M					See P-24
M-8.40.2	Position	—	—	—	—	—	M					See P-15
M-8.40.3	Level	—	—	—	—	—	M					See P-14
M-8.40.4	Speed	—	—	—	—	—	M					See P-22
M-8.41	Time Speed											TimeSpeed ::= SEQUENCE 41
M-8.41.1	Time	—	—	—	—	—	M					See P-24
M-8.41.2	Speed	—	—	—	—	—	M					See P-22
M-8.42	Time Speed Speed											TimeSpeedSpeed ::= SEQUENCE 42
M-8.42.1	Time	—	—	—	—	—	M					See P-24
M-8.42.2	Speeds	—	—	—	—	—	M					
M-8.42.2	SpeedSpeed	—	—	—	—	—	M					SEQUENCE SIZE(2) OF Speed See P-22
M-8.43	Time To From Position											TimeToFromPosition ::= SEQUENCE 43
M-8.43.1	Time	—	—	—	—	—	M					See P-24
M-8.43.2	To From	—	—	—	—	—	M					
M-8.43.3	Position	—	—	—	—	—	M					See P-15
M-8.43.2	To From											ToFrom ::= ENUMERATED
M-8.43.2.1	To	—	—	—	—	—	M					(0) to
M-8.43.2.2	From	—	—	—	—	—	M					(1) from
M-8.44	Time Unit Name Frequency											TimeUnitNameFrequency :: SEQUENCE 44
M-8.44.1	Time	—	—	—	—	—	M					See P-24
M-8.44.2	Unit Name	—	—	—	—	—	M					See P-25
M-8.44.3	Frequency	—	—	—	—	—	M					See P-10
M-8.45	To From Position											ToFromPosition ::= SEQUENCE 45
M-8.45.1	To From	—	—	—	—	—	M					
M-8.45.2	Position	—	—	—	—	—	M					See P-15
M-8.45.1	To From											ToFrom ::= ENUMERATED
M-8.45.1.1	To	—	—	—	—	—	M					(0) to
M-8.45.1.2	From	—	—	—	—	—	M					(1) from
M-8.46	Traffic Type											TrafficType ::= ENUMERATED 46
M-8.46.1	None Specified	—	—	—	—	—	M					(0) noneSpecified
M-8.46.2	Opposite Direction	—	—	—	—	—	M					(1) OppositeDirection
M-8.46.3	Same Direction	—	—	—	—	—	M					(2) sameDirection
M-8.46.4	Converging	—	—	—	—	—	M					(3) converging
M-8.46.5	Crossing	—	—	—	—	—	M					(4) crossing
M-8.46.6	Diverging	—	—	—	—	—	M					(5) diverging
M-8.46.7	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility
M-8.47	UnitName Frequency											UnitNameFrequency ::= SEQUENCE 47
M-8.47.1	Unit Name	M					M					See P-25

Source: Chapter 4 - ASN.1														Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements		
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons			
M-8.47.2	Frequency	M					M					Frequency	See P-10	
M-8.48	VersionNumber	M					—	—	—	—	—	INTEGER (0..15)	48	

Source: Chapter 4 - ASN.1													Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	
		OPLINKP Profile	Status	Cons	Implementation Status	Cons	OPLINKP Profile	Status	Cons	Implementation Status	Cons		

Notes:

- a When used as a direct parameter to a message

Direct Message Use

1	Used in UM158, DM79
2	Used in UM123, DM47
3	Used in UM: 94, 95, 98, 215
4	Used in DM85
5	Used in UM160
6	Used in UM163, DM64
7	Used in UM213
8	Used in UM212
9	Used in UM: 169, 170, 183, 187, 194-199, 203-208, DM: 67, 68, 90-98
10	Used in UM: 30-32, 180, DM: 7,76,77
11	Used in UM: 27, 29, 78, 90,149, 209
12	Used in UM102
13	Used in UM105
14	Used in UM: 26, 28, 150, 192, DM81
15	Used in UM97
16	Used in UM65, DM16
17	Used in UM: 14, 16, 18, 22, 25, 42, 43, 44, 45, 46, 47, 48, 49, 92, 185, 186, DM: 11, 12
18	Used in UM50
19	Used in UM61
20	Used in UM77, 88
21	Used in UM84
22	Used in UM: 79, 83, 86, DM: 26, 59
23	Used in UM: 55, 56, 57, 101, 188
24	Used in UM104
25	Used in UM: 51, 52, 53, DM104
26	Used in UM: 58, 59, 60
27	Used in UM54
28	Used in UM: 118, 121
29	Used in DM57
30	Used in UM214
31	Used in UM110, DM: 19, 50
32	Used in DM83
33	Used in UM134
34	Used in DM113
35	Used in UM66, DM17
36	Used in DM78
37	Used in UM: 13, 15, 17, 21, 24, DM: 13, 14
38	Used in UM: 76, 89, DM111
39	Used in UM62
40	Used in UM63
41	Used in UM100
42	Used in UM103
43	Used in UM184
44	Used in UM: 119,122
45	Used in UM181
46	Used in UM166

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
47	Used in UM: 117, 120 DM89												
48	Used in DM73												

Table P-1: Airport Parameter

Used in the following messages:

UM:	8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 209, 210, 228
DM:	11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 105, 110, 111

Source: Chapter 4 - ASN.1													Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-1.1	Airport											IA5String SIZE(4)	

Table P-2: Altimeter Parameter Uplink

Used in the following messages: UM: 153, 213
DM: none

Source: Chapter 4 - ASN.1														Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements		
		OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons			
P-2.1	Altimeter												Altimeter ::= CHOICE	
P-2.1.1	Altimeter English	—	—	—	—	—	C						[0] AltimeterEnglish	
P-2.1.2	Altimeter Metric	—	—	—	—	—	C						[1] AltimeterMetric	
P-2.1.1	Altimeter English in Inches of Mercury												AltimeterEnglish INTEGER (2200..3200)	
P-2.1.2	Altimeter Metric in Hectopascal												AltimeterMetric INTEGER (7500..12500)	

Table P-3: Clearance Type Parameter - Downlinked

Used in the following messages:

UM: none

DM: 25

Source: Chapter 4 - ASN.1														Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements		
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons			
P-3.1	ClearanceType											ClearanceType ::= ENUMERATED		
P-3.1.1	None Specified	C					—	—	—	—	—	(0) noneSpecified		
P-3.1.2	Approach	C					—	—	—	—	—	(1) approach		
P-3.1.3	Departure	C					—	—	—	—	—	(2) departure		
P-3.1.4	Further	C					—	—	—	—	—	(3) further		
P-3.1.5	Start-up	C					—	—	—	—	—	(4) start-up		
P-3.1.6	Pushback	C					—	—	—	—	—	(5) pushback		
P-3.1.7	Taxi	C					—	—	—	—	—	(6) taxi		
P-3.1.8	Take-off	C					—	—	—	—	—	(7) take-off		
P-3.1.9	Landing	C					—	—	—	—	—	(8) landing		
P-3.1.10	Oceanic	C					—	—	—	—	—	(9) oceanic		
P-3.1.11	En-route	C					—	—	—	—	—	(10) en-route		
P-3.1.12	Downstream	C					—	—	—	—	—	(11) downstream		
P-3.1.13	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility		

Table P-4: Degrees Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 94, 95, 97, 98, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 190, 209, 210, 215, 221, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 35, 36, 30, 42, 44, 45, 48, 59, 70, 71, 78, 104, 110, 111

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-4.1	Degrees											Degrees ::= CHOICE	
P-4.1.1	Degrees Magnetic	C					C					[0] DegreesMagnetic	
P-4.1.2	Degrees True	C					C					[1] DegreesTrue	
P-4.1.1	Degrees Magnetic (1-360)/1											INTEGER (1..360)	
P-4.1.2	DegreesTrue (1-360)/1											INTEGER (1..360)	

Table P-5: Departure Clearance Parameter

Used in the following messages: UM: 73
DM: none

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-5.1	Departure Clearance											DepartureClearance ::= SEQUENCE	
P-5.1.1	Aircraft Flight Identification	—	—	—	—	—	M					[0] AircraftFlightIdentification	
P-5.1.2	Clearance Limit	—	—	—	—	—	M					[1] Position	See P-15
P-5.1.3	Flight Information	—	—	—	—	—	M					[2] FlightInformation (OPTIONAL)	
P-5.1.4	Further Instructions	—	—	—	—	—	M					[3] FurtherInstructions (OPTIONAL)	
P-5.1.1	AircraftFlightIdentification											IA5String SIZE(2..8)	
P-5.1.3	Flight Information											FlightInformation ::= CHOICE	
P-5.1.3.1	Route of Flight	—	—	—	—	—	M					[0] RouteInformation	See P-20
P-5.1.3.2	Levels of Flight	—	—	—	—	—	M					[1] LevelsOfFlight	
P-5.1.3.3	Route and Levels	—	—	—	—	—	M					[2] RouteAndLevels	
P-5.1.3.2	Levels Of Flight											LevelsOfFlight ::= CHOICE	
P-5.1.3.2.1	Level	—	—	—	—	—	M					[0] Level	See P-14
P-5.1.3.2.2	Procedure Name	—	—	—	—	—	M					[1] ProcedureName	See P-17
P-5.1.3.2.3	Level Procedure Name	—	—	—	—	—	M					[2] LevelProcedureName	
P-5.1.3.2.3	Level Procedure Name											LevelProcedureName ::= SEQUENCE	
P-5.1.3.2.3.1	Level	—	—	—	—	—	M					Level	See P-14
P-5.1.3.2.3.2	Procedure Name	—	—	—	—	—	M					ProcedureName	See P-17
P-5.1.3.3	Route And Levels											RouteAndLevels ::= SEQUENCE	
P-5.1.3.3.1	Route Information	—	—	—	—	—	M					RouteInformation	See P-20
P-5.1.3.3.2	Levels Of Flight	—	—	—	—	—	M					LevelsOfFlight	
P-5.1.3.3.2	Levels Of Flight											LevelsOfFlight ::= CHOICE	
P-5.1.3.3.2.1	Level	—	—	—	—	—	M					[0] Level	See P-14
P-5.1.3.3.2.2	Procedure Name	—	—	—	—	—	M					[1] ProcedureName	See P-17
P-5.1.3.3.2.3	Level Procedure Name	—	—	—	—	—	M					[2] LevelProcedureName	
P-5.1.3.3.2.3	Level Procedure Name											LevelProcedureName ::= SEQUENCE	
P-5.1.3.3.2.3.1	Level	—	—	—	—	—	M					Level	See P-14
P-5.1.3.3.2.3.2	Procedure Name	—	—	—	—	—	M					ProcedureName	See P-17
P-5.1.4	Further Instructions											FurtherInstructions ::= SEQUENCE	
P-5.1.4.1	Code	—	—	—	—	—	M					[0] Code (OPTIONAL)	
P-5.1.4.2	Departure Frequency	—	—	—	—	—	M					[1] UnitNameFrequency (OPTIONAL)	See M-8
P-5.1.4.3	Clearance Expiry Time	—	—	—	—	—	M					[2] Time (OPTIONAL)	See P-24
P-5.1.4.4	Departure Airport	—	—	—	—	—	M					[3] Airport (OPTIONAL)	See P-1
P-5.1.4.5	Destination Airport	—	—	—	—	—	M					[4] Airport (OPTIONAL)	See P-1
P-5.1.4.6	Departure Time	—	—	—	—	—	M					[5] TimeDeparture (OPTIONAL)	
P-5.1.4.7	Departure Runway	—	—	—	—	—	M					[6] Runway (OPTIONAL)	See P-21
P-5.1.4.8	RevisionNumber	—	—	—	—	—	M					[7] RevisionNumber (OPTIONAL)	
P-5.1.4.9	ATIS Code	—	—	—	—	—	M					[8] ATISCode (OPTIONAL)	

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINK Profile	Profile Status	Cons	Implementation Status	Cons	OPLINK Profile	Profile Status	Cons	Implementation Status	Cons	
P-5.1.4.1	Code											SEQUENCE SIZE(4) OF CodeOctalDigit
P-5.1.4.1.1	CodeOctalDigit											INTEGER (0..7)
P-5.1.4.6	Time Departure											TimeDeparture ::= SEQUENCE
P-5.1.4.6.1	Time Departure Allocated	—	—	—	—	—	M					[0] Time (OPTIONAL) See P-24
P-5.1.4.6.2	Time Departure Controlled	—	—	—	—	—	M					[1] ControlledTime (OPTIONAL)
P-5.1.4.6.3	Time Departure Clearance Expected	—	—	—	—	—	M					[2] Time (OPTIONAL) See P-24
P-5.1.4.6.4	Departure Minimum Interval	—	—	—	—	—	M					[3] DepartureMinimumInterval (OPTIONAL)
P-5.1.4.6.2	Controlled Time											ControlledTime ::= SEQUENCE
P-5.1.4.6.2.1	Time	—	—	—	—	—	M					Time See P-24
P-5.1.4.6.2.2	Time Tolerance	—	—	—	—	—	M					TimeTolerance
P-5.1.4.6.2.2	Time Tolerance											TimeTolerance ::= ENUMERATED
P-5.1.4.6.2.2.1	At	—	—	—	—	—	M					(0) at
P-5.1.4.6.2.2.2	At or After	—	—	—	—	—	M					(1) atorafter
P-5.1.4.6.2.2.3	At or Before	—	—	—	—	—	M					(2) atorbefore
P-5.1.4.6.4	Departure Minimum Interval in minutes (0.1-15.0)/0.1											INTEGER (1..150)
P-5.1.4.8	RevisionNumber											INTEGER (1..16)
P-5.1.4.9	ATISCode											IA5String SIZE(1)

Table P-6: Direction Parameter

Used in the following messages: UM: 64-66, 79, 80, 82, 83, 85, 86, 91, 94, 95, 98, 152, 215

DM: 15-17, 24, 26, 27, 40, 59, 60, 80, 85, 86

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-6.1	Direction											Direction ::= ENUMERATED	
P-6.1.1	Left	M					M					(0) left	
P-6.1.2	Right	M					M					(1) right	
P-6.1.3	Either Side	O					M					(2) eitherSide	
P-6.1.4	North	O					M					(3) north	
P-6.1.5	South	O					M					(4) south	
P-6.1.6	East	O					M					(5) east	
P-6.1.7	West	O					M					(6) west	
P-6.1.8	North East	O					M					(7) northEast	
P-6.1.9	North West	O					M					(8) northWest	
P-6.1.10	South East	O					M					(9) southEast	
P-6.1.11	South West	O					M					(10) southWest	

Table P-7: Distance Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 94, 95, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 190, 209, 210, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 110, 111

Source: Chapter 4 - ASN.1													Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-7.1	Distance											Distance ::= CHOICE	
P-7.1.1	Distance in Nautical Miles	C					C					[0] DistanceNm	
P-7.1.2	Distance in Kilometres	C					C					[1] DistanceKm	
P-7.1.1	DistanceNm (0-999.9)/0.1											INTEGER (0..9999)	
P-7.1.2	DistanceKm (0-2000)/0.25											INTEGER (0..8000)	

Table P-8: Distance Specified Direction Parameter

Used in the following messages: UM: 64, 65, 66, 82, 152

DM: 15, 16, 17, 27, 60, 80, 85, 86

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-8.1	Distance Specified Direction											DistanceSpecifiedDirection ::= SEQUENCE
P-8.1.1	Distance Specified	M					M					DistanceSpecified
P-8.1.2	Direction	M					M					Direction
												See P-6
P-8.1.1	Distance Specified											DistanceSpecified ::= CHOICE
P-8.1.1.1	Distance Specified in Nautical Miles	C					C					[0] DistanceSpecifiedNm
P-8.1.1.2	Distance Specified in Kilometres	C					C					[1] DistanceSpecifiedKm
P-8.1.1.1	DistanceSpecifiedNm (1-250)/1											INTEGER (1..250)
P-8.1.1.2	DistanceSpecifiedKm (1-500)/1											INTEGER (1..500)

Table P-9: Error Information Parameter

Used in the following messages: UM: 159

 DM: 62

Source: Chapter 4 - ASN.1														Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements		
		OPLINKP Profile	Profile		Implementation		OPLINKP Profile	Profile		Implementation				
			Status	Cons	Status	Cons		Status	Cons	Status	Cons			
P-9.1	Error Information											ErrorInformation ::= ENUMERATED		
P-9.1.1	Unrecognized Msg Reference Number	M					M					(0) unrecognizedMsgReferenceNumber		
P-9.1.2	Logical Acknowledgment Not Accepted	—	—		—	—	M					(1) logicalAcknowledgmentNotAccepted		
P-9.1.3	Insufficient Resources	M					M					(2) insufficientResources		
P-9.1.4	Invalid Message Element Combination	M					M					(3) invalidMessageElementCombination		
P-9.1.5	Invalid Message Element	M					M					(4) invalidMessageElement		
P-9.1.6	Use of Extensibility	X					M					Use of Extensibility		

Table P-10: Frequency Parameter

Used in the following messages: UM: 73, 117-122, 157

DM: 21, 89

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-10.1	Frequency											Frequency ::= CHOICE
P-10.1.1	Frequency HF	O					O					[0] Frequencyhf
P-10.1.2	Frequency VHF	M					M					[1] Frequencyvhf
P-10.1.3	Frequency UHF	O					O					[2] Frequencyuhf
P-10.1.4	Frequency Sat Channel	O					O					[3] Frequencysatchannel
P-10.1.1	Frequencyhf KHz (2850-28000)/1											INTEGER (2850..28000)
P-10.1.2	Frequencyvhf MHz (118-136.990)/0.005											INTEGER (23600..27398)
P-10.1.3	Frequencyuhf MHz (225-399.975)/0.025											INTEGER (9000..15999)
P-10.1.4	Frequencysatchannel Telephone No											NumericString SIZE(12)

Table P-11: Hold Clearance Parameter

Used in the following messages:

UM: 91

DM:

Source: Chapter 4 - ASN.1													Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-11.1	Hold Clearance											HoldClearance ::= SEQUENCE	
P-11.1.1	Position	—	—	—	—	—	M					[0] Position	See P-15
P-11.1.2	Level	—	—	—	—	—	M					[1] Level	See P-14
P-11.1.3	Degrees	—	—	—	—	—	M					[2] Degrees	See P-4
P-11.1.4	Direction	—	—	—	—	—	M					[3] Direction	See P-6
P-11.1.5	Leg Type	—	—	—	—	—	M					[4] LegType (OPTIONAL)	See P-13

Table P-12: Latitude Longitude Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 209, 210, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 110, 111

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-12.1	Latitude Longitude											LatitudeLongitude ::= SEQUENCE
P-12.1.1	Latitude	M					M					[0] Latitude (OPTIONAL) a
P-12.1.2	Longitude	M					M					[1] Longitude (OPTIONAL) a
P-12.1.1	Latitude											Latitude ::= SEQUENCE
P-12.1.1.1	Latitude Type	M					M					LatitudeType
P-12.1.1.2	Latitude Direction	M					M					LatitudeDirection
P-12.1.1.1	Latitude Type											LatitudeType ::= CHOICE
P-12.1.1.1.1	Latitude Degrees	C					C					[0] LatitudeDegrees
P-12.1.1.1.2	Latitude Degrees Minutes	C					C					[1] LatitudeDegreesMinutes
P-12.1.1.1.3	Latitude Degrees Minutes Seconds	C					C					[2] LatitudeDegreesMinutesSeconds
P-12.1.1.1.1	Latitude Degrees (0-90)/0.001											INTEGER (0.90000)
P-12.1.1.1.2	Latitude Degrees Minutes											LatitudeDegreesMinutes ::= SEQUENCE
P-12.1.1.1.2.1	Latitude Whole Degrees	M					M					LatitudeWholeDegrees
P-12.1.1.1.2.2	Minutes Lat Lon	M					M					MinutesLatLon
P-12.1.1.1.2.1	LatitudeWholeDegrees (0-89)/1											INTEGER (0..89)
P-12.1.1.1.2.2	MinutesLatLon (0-59.99)/0.01											INTEGER (0..5999)
P-12.1.1.1.3	Latitude Degrees Minutes Seconds											LatitudeDegreesMinutesSeconds ::= SEQUENCE
P-12.1.1.1.3.1	Latitude Whole Degrees	M					M					LatitudeWholeDegrees
P-12.1.1.1.3.2	Lat Lon Whole Minutes	M					M					LatLonWholeMinutes
P-12.1.1.1.3.3	Seconds Lat Lon	M					M					SecondsLatLon
P-12.1.1.1.3.1	LatitudeWholeDegrees (0-89)/1											INTEGER (0..89)
P-12.1.1.1.3.2	LatLonWholeMinutes (0-59)/1											INTEGER (0..59)
P-12.1.1.1.3.3	SecondsLatLon											INTEGER (0..59)
P-12.1.1.2	Latitude Direction											LatitudeDirection ::= ENUMERATED
P-12.1.1.2.1	North	M					M					(0) north
P-12.1.1.2.2	South	M					M					(1) south
P-12.1.2	Longitude											Longitude ::= SEQUENCE
P-12.1.2.1	LongitudeType	M					M					LongitudeType
P-12.1.2.2	Longitude Direction	M					M					LongitudeDirection

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-12.1.2.1	Longitude Type											LongitudeType ::= CHOICE
P-12.1.2.1.1	Longitude Degrees	C					C					[0] LongitudeDegrees
P-12.1.2.1.2	Longitude Degrees Minutes	C					C					[1] LongitudeDegreesMinutes
P-12.1.2.1.3	Longitude Degrees Minutes Seconds	C					C					[2] LongitudeDegreesMinutesSeconds
P-12.1.2.1.1	LongitudeDegrees (0-180)/0.001											INTEGER (0..180000)
P-12.1.2.1.2	Longitude Degrees Minutes											LongitudeDegreesMinutes ::= SEQUENCE
P-12.1.2.1.2.1	Longitude Whole Degrees	M					M					LongitudeWholeDegrees
P-12.1.2.1.2.2	Minutes Lat Lon	M					M					MinutesLatLon
P-12.1.2.1.2.1	LongitudeWholeDegrees (0-179)/1											INTEGER (0..179)
P-12.1.2.1.2.2	MinutesLatLon (0-59.99)/0.01											INTEGER (0..5999)
P-12.1.2.1.3	Longitude Degrees Minutes Seconds											LongitudeDegreesMinutesSeconds ::= SEQUENCE
P-12.1.2.1.3.1	LongitudeWholeDegrees	M					M					LongitudeWholeDegrees
P-12.1.2.1.3.2	LatLonWholeMinutes	M					M					LatLonWholeMinutes
P-12.1.2.1.3.3	SecondsLatLon	M					M					SecondsLatLon
P-12.1.2.1.3.1	LongitudeWholeDegrees (0-179)/1											INTEGER (0..179)
P-12.1.2.1.3.2	LatLonWholeMinutes (0-59)/1											INTEGER (0..59)
P-12.1.2.1.3.3	SecondsLatLon											INTEGER (0..59)
P-12.1.2.2	Longitude Direction											LongitudeDirection ::= ENUMERATED
P-12.1.2.2.1	East	M					M					(0) east
P-12.1.2.2.2	West	M					M					(1) west

Notes:

- a The elements are optional in ASN.1, but an implementation must be capable of supporting all types

Table P-13: Leg Type Parameter

Used in the following messages: UM: 79, 80, 83, 85, 86, 91

DM: 24, 26, 40, 59

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-13.1	Leg Type											LegType ::= CHOICE
P-13.1.1	Leg Distance	C					M					[0] LegDistance
P-13.1.2	Leg Time	C					M					[1] LegTime
P-13.1.1	Leg Distance											LegDistance ::= CHOICE
P-13.1.1.1	Leg Distance English	C					M					[0] LegDistanceEnglish
P-13.1.1.2	Leg Distance Metric	C					M					[1] LegDistanceMetric
P-13.1.1.1	Leg Distance English Nm (0-50)/1											INTEGER (0..50)
P-13.1.1.2	Leg Distance Metric Km (1-128)/1											INTEGER (1..128)
P-13.1.2	Leg Time Minutes (0-10)/1											INTEGER (0..10)

Table P-14: Level Parameter

Used in the following messages:

UM: 6, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34-39, 42-50, 58-63, 73, 78, 79, 80, 83, 85, 86, 90-92, 102, 105, 128, 129, 148, 149, 150, 175, 180, 185, 186, 192, 209, 219, 220

DM: 6-14, 24, 26, 28-30, 32, 37, 38, 40, 48, 54, 59, 61, 72, 76, 77, 81, 82, 87, 88, 106

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-14.1	Level											Level ::= CHOICE	
P-14.1.1	Single Level	M					M					[0] LevelType	
P-14.1.2	Block Level	O					O					[1] SEQUENCE SIZE(2) OF LevelType	
P.14.1&2	Level Type											LevelType ::= CHOICE	
P.14.1&2.1	Level Feet	C					C					[0] LevelFeet	
P.14.1&2.2	Level Meters	C					C					[1] LevelMeters	
P.14.1&2.3	Level Flight Level	C					C					[2] LevelFlightLevel	
P.14.1&2.4	Level Flight Level Metric	C					C					[3] LevelFlightLevelMetric	
P.14.1&2.1	LevelFeet (-600-70000)/10											INTEGER (-60..7000)	
P.14.1&2.2	LevelMeters (-30-25000)/1											INTEGER (-30..25000)	
P.14.1&2.3	LevelFlightLevel 100's ft (30-700)/1											INTEGER (30..700)	
P.14.1&2.4	LevelFlightLevelMetric 10's m (100-2500)/1											INTEGER (100..2500)	

Table P-15: Position Parameter

Used in the following messages: UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-79, 80, 83-92, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 209, 210, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 110, 111

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send				Receive				ASN.1 Protocol Elements		Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-15.1	Position											Position ::= CHOICE
P-15.1.1	Fix Name	C					M					[0] FixName
P-15.1.2	Navaid	C					M					[1] Navaid
P-15.1.3	Airport	C					M					[2] Airport
P-15.1.4	Latitude and Longitude	C					M					[3] LatitudeLongitude
P-15.1.5	Place Bearing Distance	C					M					[4] PlaceBearingDistance
P-15.1.1	Fix Name											FixName ::= SEQUENCE
P-15.1.1.1	Fix	M					M					[0] Fix
P-15.1.1.2	Latitude and Longitude	M					M					[1] LatitudeLongitude (OPTIONAL)
P-15.1.1.1	Fix											IA5String SIZE(1..5)
P-15.1.2	Navaid											Navaid ::= SEQUENCE
P-15.1.2.1	Navaid Name	M					M					[0] NavaidName
P-15.1.2.2	Latitude and Longitude	M					M					[1] LatitudeLongitude (OPTIONAL)
P-15.1.2.1	NavaidName											IA5String SIZE(1..4)
P-15.1.3	Airport											IA5String SIZE(4)
P-15.1.5	Place Bearing Distance											PlaceBearingDistance ::= SEQUENCE
P-15.1.5.1	Published Identifier	M					M					PublishedIdentifier
P-15.1.5.2	Degrees	M					M					Degrees
P-15.1.5.3	Distance	M					M					Distance

Table P-16: Position Report Parameter

Used in the following messages:

UM:

DM: 48

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-16.1	Position Report											PositionReport ::= SEQUENCE
P-16.1.1	Position current	M					—	—	—	—	—	[0] Position See P-15
P-16.1.2	Time at position current	M					—	—	—	—	—	[1] Time See P-24
P-16.1.3	Level	M					—	—	—	—	—	[2] Level See P-14
P-16.1.4	Fix next	O					—	—	—	—	—	[3] Position (Optional) See P-15
P-16.1.5	Time eta at fix next	O					—	—	—	—	—	[4] Time (Optional) See P-24
P-16.1.6	Fix next plus one	O					—	—	—	—	—	[5] Position (Optional) See P-15
P-16.1.7	Time eta at destination	O					—	—	—	—	—	[6] Time (Optional) See P-24
P-16.1.8	Remaining Fuel	O					—	—	—	—	—	[7] RemainingFuel (Optional)
P-16.1.9	Temperature	O					—	—	—	—	—	[8] Temperature (Optional)
P-16.1.10	Winds	O					—	—	—	—	—	[9] Winds (Optional)
P-16.1.11	Turbulence	O					—	—	—	—	—	[10] Turbulence (Optional)
P-16.1.12	Icing	O					—	—	—	—	—	[11] Icing (Optional)
P-16.1.13	Speed	O					—	—	—	—	—	[12] Speed (Optional) See P-22
P-16.1.14	Speed Ground	O					—	—	—	—	—	[13] SpeedGround (Optional)
P-16.1.15	Vertical Change	O					—	—	—	—	—	[14] VerticalChange (Optional)
P-16.1.16	Track angle	O					—	—	—	—	—	[15] Degrees (Optional) See P-4
P-16.1.17	Heading	O					—	—	—	—	—	[16] Degrees (Optional) See P-4
P-16.1.18	Distance	O					—	—	—	—	—	[17] Distance (Optional) See P-7
P-16.1.19	Humidity	O					—	—	—	—	—	[18] Humidity (Optional)
P-16.1.20	Reported Waypoint Position	O					—	—	—	—	—	[19] Position (Optional) See P-15
P-16.1.21	Reported Waypoint Time	O					—	—	—	—	—	[20] Time (Optional) See P-24
P-16.1.22	Reported Waypoint Level	O					—	—	—	—	—	[21] Level (Optional) See P-14
P-16.1.8	RemainingFuel											Time See P-24
P-16.1.9	Temperature											INTEGER (-100..100)
P-16.1.10	Winds											Winds ::= SEQUENCE
P-16.1.10.1	Wind Direction	M					—	—	—	—	—	WindDirection
P-16.1.10.2	Wind Speed	M					—	—	—	—	—	WindSpeed
P-16.1.10.1	WindDirection Degrees (1-360)/1											INTEGER (1..360)
P-16.1.10.2	Wind Speed											WindSpeed ::= CHOICE
P-16.1.10.2.1	Wind Speed English	C					—	—	—	—	—	[0] WindSpeedEnglish
P-16.1.10.2.2	Wind Speed Metric	C					—	—	—	—	—	[1] WindSpeedMetric
P-16.1.10.2.1	WindSpeedEnglish Knots (0-255)/1											INTEGER (0..255)
P-16.1.10.2.2	WindSpeedMetric Km/hour (0-511)/1											INTEGER (0..511)

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-16.1.11	Turbulence											Turbulence
P-16.1.11.1	Light	M					—	—	—	—	—	(0) light
P-16.1.11.2	Moderate	M					—	—	—	—	—	(1) moderate
P-16.1.11.3	Severe	M					—	—	—	—	—	(2) severe
P-16.1.11.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility
P-16.1.12	Icing											Icing ::= ENUMERATED
P-16.1.12.1	Trace	M					—	—	—	—	—	(0) trace
P-16.1.12.2	Light	M					—	—	—	—	—	(1) light
P-16.1.12.3	Moderate	M					—	—	—	—	—	(2) moderate
P-16.1.12.4	Severe	M					—	—	—	—	—	(3) severe
P-16.1.14	SpeedGround (-50 to 2000 Knots)											INTEGER (-50..2000)
P-16.1.15	Vertical Change											VerticalChange ::= SEQUENCE
P-16.1.15.1	Vertical Direction	M					—	—	—	—	—	VerticalDirection
P-16.1.15.2	Vertical Rate	M					—	—	—	—	—	VerticalRate
P-16.1.15.1	Vertical Direction											VerticalDirection ::= ENUMERATED
P-16.1.15.1.1	Up	M					—	—	—	—	—	(0) up
P-16.1.15.1.2	Down	M					—	—	—	—	—	(1) down
P-16.1.15.2	Vertical Rate											VerticalRate ::= CHOICE
P-16.1.15.2	Vertical Rate English	C					—	—	—	—	—	[0] VerticalRateEnglish
P-16.1.15.2.2	Vertical Rate Metric	C					—	—	—	—	—	[1] VerticalRateMetric
P-16.1.15.2.1	VerticalRateEnglish ft/min (0-30000)/10											INTEGER (0..3000)
P-16.1.15.2.2	VerticalRateMetric m/min (0-10000)/10											INTEGER (0..1000)
P-16.1.19	Humidity 0-100%											INTEGER (0..100)

Table P-17: Procedure Name Parameters

Used in the following messages: UM: 73, 79, 80, 81, 83-86, 99

DM: 23, 24, 26, 40, 59

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-17.1	Procedure Name											ProcedureName ::= SEQUENCE
P-17.1.1	Procedure Type	M					M					[0] ProcedureType
P-17.1.2	Procedure	M					M					[1] Procedure
P-17.1.3	Procedure Transition	O					M					[2] ProcedureTransition (OPTIONAL)
P-17.1.1	Procedure Type											ProcedureType ::= ENUMERATED
P-17.1.1.1	Arrival	M					M					(0) arrival
P-17.1.1.2	Approach	M					M					(1) approach
P-17.1.1.3	Departure	M					M					(2) departure
P-17.1.2	Procedure											IA5String SIZE(1..20)
P-17.1.3	ProcedureTransition											IA5String SIZE(1..5)

Table P-18: Published Identifier Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 209, 210, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 110, 111

Source: Chapter 4 - ASN.1											
Ref No	Operational Elements	Send					Receive				
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons
P-18.1	Published Identifier										
P-18.1.1	Fix Name	M					M				
P-18.1.2	Navaid	M					M				
P-18.1.1	Fix Name										
P-18.1.1.1	Fix	M					M				
P-18.1.1.2	Latitude and Longitude	M					M				
P-18.1.1.1	Fix										
P-18.1.2	Navaid										
P-18.1.2.1	Navaid Name	M					M				
P-18.1.2.2	Latitude and Longitude	M					M				
P-18.1.2.1	NavaidName										

Table P-19: Route Clearance Index and Route Clearance Parameters

Used in the following messages: UM: 79, 80, 83, 85, 86

 DM: 24, 26, 40, 59

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-19.1	RouteClearanceIndex											INTEGER (1..2)
P-19.2	Route Clearance											RouteClearance ::= SEQUENCE
P-19.2.1	Departure Airport	C					M					[0] Airport (OPTIONAL) See P-1
P-19.2.2	Destination Airport	C					M					[1] Airport (OPTIONAL) See P-1
P-19.2.3	Departure Runway	C					M					[2] Runway (OPTIONAL) See P-21
P-19.2.4	Departure Procedure	C					M					[3] ProcedureName (OPTIONAL) See P-17
P-19.2.5	Arrival Runway	C					M					[4] Runway (OPTIONAL) See P-21
P-19.2.6	Approach Procedure	C					M					[5] ProcedureName (OPTIONAL) See P-17
P-19.2.7	Arrival Procedure	C					M					[6] ProcedureName (OPTIONAL) See P-17
P-19.2.8	Route Information	C					M					[7] SEQUENCE SIZE (1..128) OF RouteInformation (OPTIONAL) See P-20
P-19.2.9	Additional Route Information	C					M					[8] RouteInformationAdditional (OPTIONAL)
P-19.2.9	Route Information Additional											RouteInformationAdditional ::= SEQUENCE
P-19.2.9.1	ATW Along Track Waypoint	C					M					[0] SEQUENCE SIZE (1..8) OF ATWAlongTrackWaypoint (OPTIONAL)
P-19.2.9.2	Reporting Points	C					M					[1] ReportingPoints (OPTIONAL)
P-19.2.9.3	Intercept Course From	C					M					[2] SEQUENCE SIZE (1..4) OF InterceptCourseFrom (OPTIONAL)
P-19.2.9.4	Hold at waypoint	C					M					[3] SEQUENCE SIZE (1..8) OF Holdatwaypoint (OPTIONAL)
P-19.2.9.5	Waypoint Speed Level	C					M					[4] SEQUENCE SIZE (1..32) OF WaypointSpeedLevel (OPTIONAL)
P-19.2.9.6	RTA Required Time Arrival	C					M					[5] SEQUENCE SIZE (1..32) OF RTARequiredTimeArrival (OPTIONAL)
P-19.2.9.1	ATW Along Track Waypoint											ATWAlongTrackWaypoint ::= SEQUENCE
P-19.2.9.1.1	Position	M					M					[0] Position See P-15
P-19.2.9.1.2	ATW Distance	M					M					[1] ATWDistance
P-19.2.9.1.3	Speed	O					M					[2] Speed (OPTIONAL) See P-22
P-19.2.9.1.4	ATW Level Sequence	O					M					[3] ATWLevelSequence (OPTIONAL)
P-19.2.9.1.2	ATW Distance											ATWDistance ::= SEQUENCE
P-19.2.9.1.2.1	ATW Distance Tolerance	M					M					ATWDistanceTolerance
P-19.2.9.1.2.2	Distance	M					M					Distance See P-7

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-19.2.9.1.2.1	ATW Distance Tolerance											ATWDistanceTolerance ::= ENUMERATED	
P-19.2.9.1.2.1.1	Plus	M					M					(0) plus	
P-19.2.9.1.2.1.2	Minus	M					M					(1) minus	
P-19.2.9.1.4	ATWLevelSequence											SEQUENCE SIZE (1..2) OF ATWLevel	
P-19.2.9.1.4.1	ATW Level											ATWLevel ::= SEQUENCE	
P-19.2.9.1.4.1.1	ATW Level Tolerance	M					M					ATWLevelTolerance	
P-19.2.9.1.4.1.2	Level	M					M					Level	See P-14
P-19.2.9.1.4.1.1	ATW Level Tolerance											ATWLevelTolerance ::= ENUMERATED	
P-19.2.9.1.4.1.1.1	At	C					M					(0) at	
P-19.2.9.1.4.1.1.2	At or above	C					M					(1) atorabove	
P-19.2.9.1.4.1.1.3	At or below	C					M					(2) atorbelow	
P-19.2.9.2	Reporting Points											ReportingPoints ::= SEQUENCE	
P-19.2.9.2.1	Lat Lon Reporting Points	M					M					[0] LatLonReportingPoints	
P-19.2.9.2.2	Degree Increment	O					M					[1] DegreeIncrement (OPTIONAL)	
P-19.2.9.2.1	Lat Lon Reporting Points											LatLonReportingPoints ::= CHOICE	
P-19.2.9.2.1.1	Latitude Reporting Points	M					M					[0] LatitudeReportingPoints	
P-19.2.9.2.1.2	Longitude Reporting Points	M					M					[1] LongitudeReportingPoints	
P-19.2.9.2.1.1	Latitude Reporting Points											LatitudeReportingPoints ::= SEQUENCE	
P-19.2.9.2.1.1.1	Latitude Direction	M					M					LatitudeDirection	
P-19.2.9.2.1.1.2	Latitude Degrees	M					M					LatitudeDegrees	
P-19.2.9.2.1.1.1	Latitude Direction											LatitudeDirection ::= ENUMERATED	
P-19.2.9.2.1.1.1.1	North	C					M					(0) north	
P-19.2.9.2.1.1.1.2	South	C					M					(1) south	
P-19.2.9.2.1.1.2	Latitude Degrees (0-90)/0.001											INTEGER (0.90000)	
P-19.2.9.2.1.2	Longitude Reporting Points											LongitudeReportingPoints ::= SEQUENCE	
P-19.2.9.2.1.2.1	Longitude Direction	M					M					LongitudeDirection	
P-19.2.9.2.1.2.2	Longitude Degrees	M					M					LongitudeDegrees	
P-19.2.9.2.1.2.1	Longitude Direction											LongitudeDirection ::= ENUMERATED	
P-19.2.9.2.1.2.1.1	East	C					M					(0) east	
P-19.2.9.2.1.2.1	West	C					M					(1) west	
P-19.2.9.2.1.2.2	LongitudeDegrees (0-180)/0.001											INTEGER (0..180000)	
P-19.2.9.2.2	DegreeIncrement (1-20)/1											INTEGER (1..20)	
P-19.2.9.3	Intercept Course From											InterceptCourseFrom ::= SEQUENCE	
P-19.2.9.3.1	From Selection	M					M					InterceptCourseFromSelection	

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-19.2.9.3.2	Degrees	M					M					Degrees See P-4
P-19.2.9.3.1	Intercept Course From Selection											InterceptCourseFromSelection ::= CHOICE
P-19.2.9.3.1.1	Published Identifier	C					M					[0] PublishedIdentifier See P-18
P-19.2.9.3.1.2	Latitude and Longitude	C					M					[1] LatitudeLongitude See P-18
P-19.2.9.3.1.3	Place Bearing Place Bearing	C					M					[2] PlaceBearingPlaceBearing See P-26
P-19.2.9.3.1.4	Place Bearing Distance	C					M					[3] PlaceBearingDistance See P-26
P-19.2.9.3.1.3	Place Bearing Place Bearing											SEQUENCE SIZE(2) OF PlaceBearing
P-19.2.9.3.1.3.1	Place Bearing											PlaceBearing ::= SEQUENCE
P-19.2.9.3.1.3.1.1	Published Identifier	M					M					PublishedIdentifier See P-18
P-19.2.9.3.1.3.1.2	Degrees	M					M					Degrees See P-4
P-19.2.9.3.1.4	Place Bearing Distance											PlaceBearingDistance ::= SEQUENCE
P-19.2.9.3.1.4.1	Published Identifier	M					M					PublishedIdentifier See P-18
P-19.2.9.3.1.4.2	Degrees	M					M					Degrees See P-4
P-19.2.9.3.1.4.3	Distance	M					M					Distance See P-7
P-19.2.9.4	Hold at Way Point											Holdatwaypoint ::= SEQUENCE
P-19.2.9.4.1	Position	M					M					[0] Position See P-15
P-19.2.9.4.2	Hold at way point speed low	O					M					[1] Speed (OPTIONAL) See P-22
P-19.2.9.4.3	ATW Level	O					M					[2] ATWLevel (OPTIONAL)
P-19.2.9.4.4	Hold at way point speed high	O					M					[3] Speed (OPTIONAL) See P-22
P-19.2.9.4.5	Direction	O					M					[4] Direction (OPTIONAL) See P-6
P-19.2.9.4.6	Degrees	O					M					[5] Degrees (OPTIONAL) See P-4
P-19.2.9.4.7	Expect Further Clearance time	O					M					[6] Time (OPTIONAL) See P-24
P-19.2.9.4.8	Leg Type	O					M					[7] LegType (OPTIONAL) See P-13
P-19.2.9.4.3	ATW Level											ATWLevel ::= SEQUENCE
P-19.2.9.4.3.1	ATW Level Tolerance	M					M					ATWLevelTolerance
P-19.2.9.4.3.2	Level	M					M					Level See P-14
P-19.2.9.4.3.1	ATW Level Tolerance											ATWLevelTolerance ::= ENUMERATED
P-19.2.9.4.3.1.1	At	C					M					(0) at
P-19.2.9.4.3.1.2	At or above	C					M					(1) atorabove
P-19.2.9.4.3.1.3	At or below	C					M					(2) atorbelow
P-19.2.9.5	Waypoint Speed Level											WaypointSpeedLevel ::= SEQUENCE
P-19.2.9.5.1	Position	M					M					[0] Position See P-14
P-19.2.9.5.2	Speed	O					M					[1] Speed (OPTIONAL) See P-22
P-19.2.9.5.3	ATW Level Sequence	O					M					[2] ATWLevelSequence (OPTIONAL)
P-19.2.9.5.3	ATWLevelSequence											SEQUENCE SIZE (1..2) OF ATWLevel
P-19.2.9.5.3	ATW Level											ATWLevel ::= SEQUENCE
P-19.2.9.5.3.1	ATW Level Tolerance	M					M					ATWLevelTolerance
P-19.2.9.5.3.2	Level	M					M					Level See P-14

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-19.2.9.5.3.1	ATW Level Tolerance											ATWLevelTolerance ::= ENUMERATED	
P-19.2.9.5.3.1.1	At	M					M					(0) at	
P-19.2.9.5.3.1.2	At or above	M					M					(1) atorabove	
P-19.2.9.5.3.1.3	At or below	M					M					(2) atorbelow	
P-19.2.9.6	RTA Required Time Arrival											RTARequiredTimeArrival ::= SEQUENCE	
P-19.2.9.6.1	Position	M					M					[0] Position	See P-15
P-19.2.9.6.2	RTA Time	M					M					[1] RTATime	
P-19.2.9.6.3	RTA Tolerance	O					M					[2] RTATolerance (OPTIONAL)	
P-19.2.9.6.2	RTA Time											RTATime ::= SEQUENCE	
P-19.2.9.6.2.1	Time	M					M					Time	See P-24
P-19.2.9.6.2.2	Time Tolerance	M					M					TimeTolerance	
P-19.2.9.6.2.2	Time Tolerance											TimeTolerance ::= ENUMERATED	
P-19.2.9.6.2.2.1	At	C					M					(0) at	
P-19.2.9.6.2.2.2	At or After	C					M					(1) atorafter	
P-19.2.9.6.2.2.3	At or Before	C					M					(2) atorbefore	
P-19.2.9.6.3	RTATolerance Minutes (0.1-15.0)/0.1											INTEGER (1..150)	

Table P-20: Route Information Parameter

Used in the following messages: UM: 73, 79, 80, 83, 85, 86

DM: 24, 26, 40, 59

Source: Chapter 4 - ASN.1											
Ref No	Operational Elements	Send					Receive				
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons
P-20.1	Route Information										
P-20.1.1	Published Identifier	C					M				
P-20.1.2	Latitude and Longitude	C					M				
P-20.1.3	Place Bearing Place Bearing	C					M				
P-20.1.4	Place Bearing Distance	C					M				
P-20.1.5	ATS Route Designator	C					M				
P-20.1.3	Place Bearing Place Bearing										
P-20.1.3.1	Place Bearing										
P-20.1.3.1.1	Published Identifier	M					M				
P-20.1.3.1.2	Degrees	M					M				
P-20.1.4	Place Bearing Distance										
P-20.1.4.1	Published Identifier	M					M				
P-20.1.4.2	Degrees	M					M				
P-20.1.4.3	Distance	M					M				
P-20.1.5	ATSRouteDesignator										

Table P-21: Runway Parameter

Used in the following messages: UM: 73, 79, 80, 83, 85, 86, 214

DM: 23, 24, 26, 40, 59

Source: Chapter 4 - ASN.1														Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements		
		OPLINKP Profile	Status	Profile Cons	Implementation Status	Cons	OPLINKP Profile	Status	Profile Cons	Implementation Status	Cons			
P-21.1	Runway											Runway ::= SEQUENCE		
P-21.1.1	Runway Direction	M					M					RunwayDirection		
P-21.1.2	Runway Configuration	M					M					RunwayConfiguration		
P-21.1.1	RunwayDirection											INTEGER (1.36)		
P-21.1.2	Runway Configuration											RunwayConfiguration ::= ENUMERATED		
P-21.1.2.1	Left	C					M					(0) left		
P-21.1.2.2	Right	C					M					(1) right		
P-21.1.2.3	Center	C					M					(2) centre		
P-21.1.2.4	None	C					M					(3) none		

Table P-22: Speed Parameter

Used in the following messages: UM: 55-57, 61, 63, 79, 80, 83, 85, 86, 100-106, 108-115, 151, 188, 189
DM: 18, 19, 24, 26, 34, 39, 40, 49, 50, 59, 83, 84, 113

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-22.1	Speed											Speed ::= CHOICE
P-22.1.1	Speed Indicated	C					C					[0] SpeedIndicated
P-22.1.2	Speed Indicated Metric	C					C					[1] SpeedIndicatedMetric
P-22.1.3	Speed True	C					C					[2] SpeedTrue
P-22.1.4	Speed True Metric	C					C					[3] SpeedTrueMetric
P-22.1.5	Speed Ground	C					C					[4] SpeedGround
P-22.1.6	Speed Ground Metric	C					C					[5] SpeedGroundMetric
P-22.1.7	Speed Mach	C					C					[6] SpeedMach
P-22.1.1	Speed Indicated (0 to 400 Knots)											INTEGER (0..400)
P-22.1.2	SpeedIndicatedMetric (0 to 800 Km/h)											INTEGER (0..800)
P-22.1.3	SpeedTrue (0 to 2000 Knots)											INTEGER (0..2000)
P-22.1.4	SpeedTrueMetric (0 to 4000 Km/h)											INTEGER (0..4000)
P-22.1.5	SpeedGround (-50 to 2000 Knots)											INTEGER (-50..2000)
P-22.1.6	SpeedGroundMetric (-100 to 4000 Km/h)											INTEGER (-100..4000)
P-22.1.7	SpeedMach (0.5 to 4.0 Mach in units of 0.001 Mach)											INTEGER (500..4000)

Table P-23: Speed Type Parameter

Used in the following messages: UM: 134

 DM: 113

Source: Chapter 4 - ASN.1														Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements		
		OPLINKP Profile	Status	Profile Cons	Implementation Status	Cons	OPLINKP Profile	Status	Profile Cons	Implementation Status	Cons			
P-23.1	Speed Type												SpeedType ::= ENUMERATED	
P-23.1.1	None Specified	M					M						(0) noneSpecified	
P-23.1.2	Indicated	O					M						(1) indicated	
P-23.1.3	True	O					M						(2) true	
P-23.1.4	Ground	O					M						(3) ground	
P-23.1.5	Mach	O					M						(4) mach	
P-23.1.6	Approach	O					M						(5) approach	
P-23.1.7	Cruise	O					M						(6) cruise	
P-23.1.8	Minimum	O					M						(7) minimum	
P-23.1.9	Maximum	O					M						(8) maximum	
P-23.1.10	Use of Extensibility	X					M						Use of Extensibility	

Table P-24: Time Parameter

Used in the following messages:

UM:	7, 9, 11, 13, 15, 17, 21, 24, 26, 28, 51-54, 58-60, 62, 63, 66, 69, 71, 73, 76, 79, 80, 83, 85, 86, 89, 93, 100, 103, 119, 122, 150, 184, 192, 226
DM:	13, 14, 17, 24, 26, 40, 43, 46, 48, 57, 59, 78, 81, 83, 85, 104, 109, 111

Source: Chapter 4 - ASN.1													Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-24.1	Time											Time ::= SEQUENCE	a
P-24.1.1	Time Hours	M					M					TimeHours	
P-24.1.2	Time Minutes	M					M					TimeMinutes	
P-24.1.1	TimeHours											INTEGER (0..23)	
P-24.1.2	TimeMinutes											INTEGER (0..59)	

Notes:

- a In addition to the listed message elements, time is a component of ATCMessageHeader

Table P-25: Unit Name Parameter

Used in the following messages: UM: 73, 117-122

DM: 89

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-25.1	Unit Name											UnitName ::= SEQUENCE	
P-25.1.1	Facility Designation	M					M					[0] FacilityDesignation	
P-25.1.2	Facility Name	O					M					[1] FacilityName (Optional)	
P-25.1.3	Facility Function	M					M					[2] FacilityFunction	
P-25.1.1	Facility Designation											IA5String SIZE(4..8)	
P-25.1.2	Facility Name											IA5String SIZE(3..18)	
P-25.1.3	Facility Function											FacilityFunction ::= ENUMERATED	
P-25.1.3.1	Center	C					M					(0) center	
P-25.1.3.2	Approach	C					M					(1) approach	
P-25.1.3.3	Tower	C					M					(2) tower	
P-25.1.3.4	Final	C					M					(3) final	
P-25.1.3.5	Ground Control	C					M					(4) groundControl	
P-25.1.3.6	Clearance Delivery	C					M					(5) clearanceDelivery	
P-25.1.3.7	Departure	C					M					(6) departure	
P-25.1.3.8	Control	C					M					(7) control	
P-25.1.3.9	Radio	C					M					(8) radio	
P-25.1.3.10	Use of Extensibility	X					X					Use of Extensibility	

Table P-26: Vertical Rate Parameter

Used in the following messages: UM: 171-174

DM: 48

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-26.1	Vertical Rate											VerticalRate ::= CHOICE	
P-26.1.1	Vertical Rate English	C					C					[0] VerticalRateEnglish	
P-26.1.2	Vertical Rate Metric	C					C					[1] VerticalRateMetric	
P-26.1.1	VerticalRateEnglish ft/min (0-30000)/10											INTEGER (0..3000)	
P-26.1.2	VerticalRateMetric m/min (0-10000)/10											INTEGER (0..1000)	



ATNP/WGA/WP A2/3/XX

7 December 2001

AERONAUTICAL TELECOMMUNICATION NETWORK PANEL

WORKING GROUP A SUBGROUP A2 (AIR/GROUND APPLICATIONS)

Ground Controller Pilot Data Link Communication Edition 2 PICS/OICS Proforma

Prepared by: Mike Harcourt

SUMMARY

This working paper contains the OPLINKP Profile PICS/OICS proforma tables for CPDLC Ground Version 1 (Doc 9705 Second Edition).

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WGA Front Sheet

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Table I-1: PICS/OICS Identification

Ref No	PICS/OICS Identification	Implementation PICS/OICS
I-1.1	Date of Statement (DD/MM/YY)	
I-1.2	PICS/OICS Serial Number	
	Profile Identification	Profile Details
I-1.3	Profile Name	
I-1.4	Version	
I-1.5	Profile Authority Name	
I-1.6	Profile Applicability (Areas, Countries, Organisations etc where the profile can be applied)	
I-1.7	Date of effect	
I-1.8	Other Information	

Table I-2: Supplier and Implementation Identification

Ref No	Supplier Information	Supplier Details
I-2.1	Organization Name	
I-2.2	Contact Name(s)	
I-2.3	Address	
I-2.4	Telephone Number	
I-2.5	Telex Number	
I-2.6	Fax Number	
I-2.7	E-mail Address	
I-2.8	Other Information	
Implementation Information		
I-2.9	Implementation Name	
I-2.10	Implementation Version	
I-2.11	Hardware Name	
I-2.12	Hardware Version	
I-2.13	Operating System Name	
I-2.14	Operating System Version	
I-2.15	Special Configuration	
I-2.16	Other Information	

Table I-3: CPDLC Protocol Identification

Ref No		OPLINKP	Profile	Implementation
I-3.1	Protocol Standard (Title, reference, date)	ICAO Doc 9705 Second Edition - 1999		
I-3.2	CPDLC Protocol Version	Version 1		
I-3.3	Addenda, amendments and corrigenda implemented			
I-3.4	Defect Reports implemented			

Table S-1: CPDLC Protocol Options - Ground ASE

Source: Chapter 8 - Subsetting Rules		OPLINKP	Profile	Imp	Associated	Notes
Ref No	Protocol Option	Status	Status	Support	Predicate	
S-1.1	CPDLC-air-ASE	Not used by Ground Systems			CPDLC/air	
S-1.1.1	Air Initiated CPDLC Start	Not used by Ground Systems			A-Start-Init	
S-1.2	CPDLC-ground-ASE	M			CPDLC/ground	
S-1.2.1	Ground Initiated CPDLC Start	O			G-Start-Init	
S-1.3	DSC function supported	M			DSC-FU	
S-1.4	DSC function supported by CPDLC-ground-user	O			DSC-USER	
S-1.5	Forward function supported by initiating user	O			FWD-INIT	
S-1.6	Forward function supported by receiving user	O			FWD-USER	

Table S-2: CPDLC-ASE Conformant Configurations

Source: Chapter 8 - Subsetting Rules		OPLINKP Profile	Profile	Imp	Notes
Ref No	List of Configurations: Ground ASE	Status	Status	Support	
S-2.1	I. CPDLC/ground	C.1			
S-2.2	II. CPDLC/ground + DSC-FU + DSC-USER	C.1			
S-2.3	III. CPDLC/ground + DSC-FU + FWD-INIT	C.1			
S-2.4	IV. CPDLC/ground + DSC-USER + FWD-INIT+ DSC-FU	C.1			
S-2.5	V. CPDLC/ground + DSC-FU + FWD-USER	C.1			
S-2.6	VI. CPDLC/ground + DSC-USER + FWD-USER+ DSC-FU	C.1			
S-2.7	VII. CPDLC/ground + DSC-FU + FWD-INIT + FWD-USER	C.1			
S-2.8	VIII. CPDLC/ground + DSC-USER + FWD-INIT + FWD-USER+ DSC-FU	C.1			
	List of Configurations: Air ASE				
S-2.9	I CPDLC/air	Not used by Ground Systems			
S-2.10	II CPDLC/air + DSC-FU				

OPLINKP Status:

- C.1 One and only one configuration must be supported.

Table S-3: Supported CPDLC Service Primitives

Source: Chapter 3 - The Abstract Service		Sender (req, [cnf])			Receiver (ind, [rsp])			Notes
Ref No	Service Primitives	OPLINKP Profile	Profile Status	Imp Support	OPLINKP Status	Profile Status	Imp Support	
S-3.1	CPDLC-start service	C.1			M			a, See S-4 and S-5
S-3.2	CPDLC-message service	M			M			See S-6
S-3.3	CPDLC-end service	M			—	—	—	See S-7
S-3.4	DSC-start service	—	—	—	M			See S-8
S-3.5	DSC-end service	—	—	—	C.2			See S-9
S-3.6	CPDLC-forward service	C.3			C.4			See S-10 and S-11
S-3.7	CPDLC-user-abort	M			M			See S-12
S-3.8	CPDLC-provider-abort	—	—	—	M			See S-13

OPLINKP Profile:

- C.1 If Ground Initiated CPDLC Start (G-Start-Init) supported then **M** else —
- C.2 If Down Stream Clearance (DSC-FU) supported then **M** else —
- C.3 If Forward Initiator (FWD-INIT) supported then **M** else —
- C.4 If Forward Responder (FWD-USER) supported then **M** else —

Notes:

- a Ground initiation of CPDLC is dependent on operational profile or regional requirements

Table S-4: Air Initiated CPDLC Start Service Parameters - Ground User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
S-4.1	Called Peer Identifier	Not visible to Ground User						
S-4.1.1	ICAO Facility Designation = IA5 String SIZE(4..8)							
S-4.2	Capability of the ground system to understand the calling Aircraft's Aircraft Address							
S-4.2.1	Calling Peer Identifier = Bit String SIZE(24)	M		—		—		
S-4.3	Capability of the ground system to receive a CPDLC message	O					See ATCDownlinkMessage (Table M-2)	
S-4.4	Capability of the ground system to specify the reason for the CPDLC Start rejection	M					See ATCUplinkMessage (Table M-1)	
S-4.5	Capability of the ground system to specify the result of the CPDLC Start request							
S-4.5.1	Accepted	M						
S-4.5.2	Rejected	M						
S-4.6	Capability of the ground system to understand a Class of Communication Service for a CPDLC dialogue							
S-4.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	M						

Table S-5: Ground Initiated CPDLC Start Service Parameters - Ground User (Request, Confirmation)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
Ref No	Operational Elements	OPLINKP Profile	Operational Use		Implementation			
			Status	Cons	Status	Cons		
S-5.1	Capability of the system system to specify the called Aircraft with an Aircraft Address							
S-5.1.1	Calling Peer Identifier = Bit String SIZE(24)	C.1		—		—		
S-5.2	Capability of the ground system to specify its own ICAO Facility Designation							
S-5.2.1	Calling Peer Identifier = IA5 String SIZE(4..8)	C.1						
S-5.3	Capability of the ground system to send a CPDLC message	C.2					See ATCUplinkMessage (Table M-1)	
S-5.4	Capability of the ground system to understand the reason for a CPDLC Start rejection	C.1					See ATCDownlinkMessage (Table M-2)	
S-5.5	Capability of the ground system to understand the result of the CPDLC Start request							
S-5.5.1	Accepted	C.1						
S-5.5.2	Rejected	C.1						
S-5.6	Capability of the ground system to request a Class of Communication Service for a CPDLC dialogue							
S-5.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.2						

OPLINKP Profile:

- C.1 If Ground Initiated CPDLC Start (G-Start-Init) supported then **M** else —
C.2 If Ground Initiated CPDLC Start (G-Start-Init) supported then **O** else —

Table S-6: CPDLC Message Service Parameters - Ground User (Request, Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
S-6.1	Capability of the ground system to send or receive a CPDLC message							
S-6.1.1	Request	M					See ATCUplinkMessage (Table M-1)	
S-6.1.2	Indication	M					See ATCDownlinkMessage (Table M-2)	

Table S-7: CPDLC End Service Parameters - Ground User (Request, Confirmation)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Status	Cons	Implementation Status	Cons		
S-7.1	Capability of the ground system to send a CPDLC uplink message in an End Service Request							
S-7.1.1	uplink message	O					See ATCUplinkMessage (Table M-1)	
S-7.2	Capability of the ground system to receive a CPDLC downlink message in an End Service Confirmation							
S-7.2.1	downlink message	O					See ATCDownlinkMessage (Table M-2)	
S-7.3	Capability of the ground system to understand the result of the CPDLC End request in a Confirmation							
S-7.3.1	Accepted	M						
S-7.3.2	Rejected	M						

Table S-8 : DSC Start Service Parameters - Ground User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
Ref No	Operational Elements	OPLINKP Profile	Operational Use		Implementation			
			Status	Cons	Status	Cons		
S-8.1	Facility Designation	Not visible to Ground User						
S-8.1.1	ICAO Facility Designation = IA5 String SIZE(4..8)							
S-8.2	Capability of the ground system to understand the calling Aircraft's Aircraft Address							
S-8.2.1	Calling Peer Identifier = Bit String SIZE(24)	M		—		—		
S-8.3	Capability of the ground system to receive a CPDLC message	O					See ATCDownlinkMessage (Table M-2)	
S-8.4	Capability of the ground system to specify the reason for the DSC Start rejection	M					See ATCUplinkMessage (Table M-1)	
S-8.5	Capability of the ground system to specify the result of the DSC Start request							
S-8.5.1	Accepted	M						
S-8.5.2	Rejected	M						
S-8.6	Capability of the ground system to understand a Class of Communication Service for a DSC dialogue							
S-8.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	M						

Table S-9: DSC End Service Parameters - Ground User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Status	Cons	Implementation Status	Cons		
S-9.1	Capability of the ground system to receive a CPDLC downlink message in an DSC End Service Indication							
S-9.1.1	Downlink message	C.1					See ATCDownlinkMessage (Table M-2)	
S-9.2	Capability of the ground system to send a CPDLC uplink message in an DSC End Service Response							
S-9.2.1	Uplink message	C.2					See ATCUplinkMessage (Table M-1)	
S-9.3	Capability of the ground system to specify the result of the DSC End Service in a Response							
S-9.3.1	Accepted	C.1						
S-9.3.2	Rejected	C.1						

OPLINKP Profile:

- C.1 If Downstream Clearance (DSC-USER) supported then **M** else —
 C.2 If Downstream Clearance (DSC-USER) supported then **O** else —

Table S-10: Forward (Initiator) Service Parameters - Ground User (Request, Confirmation)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Profile Status		Implementation Status			
S-10.1	Capability of the initiating system to specify the contacted ground system with an ICAO Facility Designation							
S-10.1.1	Called Facility Designation = IA5 String SIZE(4..8)	C.1						
S-10.2	Capability of the initiating system to specify its own ICAO Facility Designation							
S-10.2.1	Calling Facility Designation = IA5 String SIZE(4..8)	C.1						
S-10.3	Capability of the initiating system to understand a Version Number							
S-10.3.1	ASE Version Number = INTEGER (1..255)	C.1						
S-10.4	Capability of the initiating system to send a CPDLC message	C.1					See ATCForwardMessage (Table M-9)	
S-10.5	Capability of the initiating system to request a Class of Communication Service for a forward request							
S-10.5.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.2						
S-10.6	Capability of the initiating system to understand the result of the forward request	C.1					See ATCForwardResponse (Table M-9)	

OPLINKP Profile:

- C.1 If Forward Initiator (FWD-INIT) supported then **M** else —
C.2 If Forward Initiator (FWD-INIT) supported then **O** else —

Table S-11: Forward (Responder) Service Parameters - Ground User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
Ref No	Operational Elements	OPLINKP Profile	Operational Use		Implementation			
			Status	Cons	Status	Cons		
S-11.1	Called Facility Designation	Not visible to Responding User						
S-11.1.1	Called Facility Designation = IA5 String SIZE(4..8)							
S-11.2	Capability of the responding system to understand the initiator's ICAO Facility Designation							
S-11.2.1	Calling Facility Designation = IA5 String SIZE(4..8)	M						
S-11.3	Capability of the responding system to specify a Version Number							
S-11.3.1	ASE Version Number = INTEGER (1..255)	C.1						
S-11.4	Capability of the responding system to receive a CPDLC message	C.1					See ATCForwardMessage (Table M-10)	
S-11.5	Class of Communication Service	Not visible to Responding User						
S-11.5.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'							
S-11.6	Capability of the responding system to specify the result of the forward request	M					See ATCForwardResponse (Table M-10)	

OPLINKP Profile:C.1 If Forward Responder (FWD-USER) supported then **M** else —

Table S-12: CPDLC User Abort Service Parameters - Ground User (Request, Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
S-12.1	Capability of the ground system to specify the reason for a user abort	M					See CPDLCUserAbortReason (Table M-1)	
S-12.2	Capability of the ground system to understand the reason for a user abort	M					See CPDLCUserAbortReason (Table M-2)	

Table S-13: CPDLC Provider Abort Service Parameters - Ground User (Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
		Operational Use						
		OPLINKP Profile	Profile		Implementation			
Ref No	Operational Elements	Profile	Status	Cons	Status	Cons		
S-13.1	Capability of the ground system to understand the reason for a provider abort	M					See CPDLCProviderAbortReason (Table M-1)	

Table S-14: CPDLC Technical Timers - Ground ASE

Source: Chapter 5 - Protocol Definition			OICS						Notes
			Operational Use						
Ref No	CPDLC Service	Timer	Status	OPLINKP Recommended Value	Status	Profile Recommended Value	Status	Implementation Value Used	
S-14.1	CPDLC-Start	t-start	C.1	6 minutes					
S-14.2	DSC-Start	t-start	Not used by Ground Systems						
S-14.3	CPDLC-Forward	t-start	C.2	6 minutes					

OPLINKP Profile:

- C.1 If Ground Initiated CPDLC Start (G-Start-Init) supported then **M** else —
- C.2 If Forward Initiator (FWD-INIT) then **M** else —

Table M-1: Ground Generated Messages

Source: Chapter 4 - ASN.1		Send - Ground ASE					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-1.1	Ground PDUs						Ground PDUs ::= CHOICE	
M-1.1.1	User Abort	M					[0] CPDLCUserAbortReason	
M-1.1.2	Provider Abort	M					[1] CPDLCProviderAbortReason	
M-1.1.3	Start Up Message	C.1					[2] UplinkMessage	
M-1.1.4	ATC Uplink Message	M					[3] ATCUplinkMessage	
M-1.1.5	Forward Message	C.2					[4] ATCForwardMessage	See M-9
M-1.1.6	Forward Response	M					[5] ATCForwardResponse	See M-10
M-1.1.7	Use of Extensibility	X					Use of Extensibility	
M-1.1.1	CPDLC User Abort Reason						CPDLCUserAbortReason ::= ENUMERATED	
M-1.1.1.1	Undefined	M					(0) Undefined	
M-1.1.1.2	No message identification numbers available	M					(1) no-message-identification-numbers-available	
M-1.1.1.3	Duplicate message identification numbers	M					(2) duplicate-message-identification-numbers	
M-1.1.1.4	No longer next data authority	—	—	—	—	—	(3) no-longer-next-data-authority	
M-1.1.1.5	Current data authority abort	M					(4) current-data-authority-abort	
M-1.1.1.6	Commanded termination	M					(5) commanded-termination	
M-1.1.1.7	Invalid response	M					(6) invalid-response	
M-1.1.1.8	Use of Extensibility	X					Use of Extensibility	
M-1.1.2	CPDLC Provider Abort Reason						CPDLCProviderAbortReason ::= ENUMERATED	
M-1.1.2.1	Timer expired	C.1					(0) timer-expired	
M-1.1.2.2	Undefined error	M					(1) undefined-error	
M-1.1.2.3	Invalid PDU	M					(2) invalid-PDU	
M-1.1.2.4	Protocol Error	M					(3) protocol-error	
M-1.1.2.5	Communication service error	M					(4) communication-service-error	
M-1.1.2.6	Communication service failure	M					(5) communication-service-failure	
M-1.1.2.7	Invalid QOS parameter	M					(6) invalid-QOS-parameter	
M-1.1.2.8	Expected PDU missing	M					(7) expected-PDU-missing	
M-1.1.2.9	Use of Extensibility	X					Use of Extensibility	
M-1.1.3	Uplink Message						UplinkMessage ::= CHOICE	
M-1.1.3.1	No Message	C					[0] NULL	
M-1.1.3.2	aTC Uplink Message	C					[1] ATCUplinkMessage	
M-1.1.4	ATC Uplink Message						ATCUplinkMessage ::= SEQUENCE	
M-1.1.4.1	ATC Message Header	M					ATCMessageHeader	See M-3
M-1.1.4.2	ATC Uplink Message Data	M					ATCUplinkMessageData	

Source: Chapter 4 - ASN.1									
Ref No	Operational Elements	Send - Ground ASE						ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Status	Cons	Implementation Status	Cons			
M-1.1.4.2	ATC Uplink Message Data							ATCUplinkMessageData ::= SEQUENCE	
M-1.1.4.2.1	Uplink Message Elements (1 - 5 elements)	M					SEQUENCE SIZE (1..5) OF ATCUplinkMsgElementId	See M-4 and M-7	
M-1.1.4.2.2	Constrained Data	O					SEQUENCE (OPTIONAL)		
M-1.1.4.2.2.1	Route Clearance Data (1 - 2 items)	O					SEQUENCE SIZE (1..2) OF RouteClearance (OPTIONAL)	See P-19	
M-1.1.4.2.2.2	Use of Extensibility	X					Use of Extensibility		

OPLINKP Status:

- C.1 If Ground Initiated CPDLC Start (G-Start-Init) supported then **M** else —
 C.2 If Forward Initiator (FWD-INIT) supported then **M** else —

Table M-2: Aircraft Generated Messages

Source: Chapter 4 - ASN.1		Receive - Ground ASE					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status			
M-2.1	Aircraft PDUs						Aircraft PDUs ::= CHOICE	
M-2.1.1	User Abort	M					[0] CPDLCUserAbortReason	
M-2.1.2	Provider Abort	M					[1] CPDLCProviderAbortReason	
M-2.1.3	Start Down Message	M					[2] StartDownMessage	
M-2.1.4	aTC Downlink Message	M					[3] ATCDownlinkMessage	
M-2.1.5	Use of Extensibility	M					Use of Extensibility	
M-2.1.1	CPDLC User Abort Reason						CPDLCUserAbortReason ::= ENUMERATED	
M-2.1.1.1	Undefined	M					(0) Undefined	
M-2.1.1.2	No message identification numbers available	M					(1) no-message-identification-numbers-available	
M-2.1.1.3	Duplicate message identification numbers	M					(2) duplicate-message-identification-numbers	
M-2.1.1.4	No longer next data authority	M					(3) no-longer-next-data-authority	
M-2.1.1.5	Current data authority abort	M					(4) current-data-authority-abort	
M-2.1.1.6	Commanded termination	M					(5) commanded-termination	
M-2.1.1.7	Invalid response	M					(6) invalid-response	
M-2.1.1.8	Use of Extensibility	M					Use of Extensibility	
M-2.1.2	CPDLC Provider Abort Reason						CPDLCProviderAbortReason ::= ENUMERATED	
M-2.1.2.1	Timer expired	M					(0) timer-expired	
M-2.1.2.2	Undefined error	M					(1) undefined-error	
M-2.1.2.3	Invalid PDU	M					(2) invalid-PDU	
M-2.1.2.4	Protocol Error	M					(3) protocol-error	
M-2.1.2.5	Communication service error	M					(4) communication-service-error	
M-2.1.2.6	Communication service failure	M					(5) communication-service-failure	
M-2.1.2.7	Invalid QOS parameter	M					(6) invalid-QOS-parameter	
M-2.1.2.8	Expected PDU missing	M					(7) expected-PDU-missing	
M-2.1.2.9	Use of Extensibility	M					Use of Extensibility	
M-2.1.3	Start Down Message						StartDownMessage ::= SEQUENCE	
M-2.1.3.1	Mode	M					Mode DEFAULT cpdlc	
M-2.1.3.2	Downlink Message	M					DownlinkMessage	
M-2.1.3.1	Mode						Mode ::= ENUMERATED	
M-2.1.3.1.1	CPDLC	M					(0) cpdlc	
M-2.1.3.1.2	DSC	C.1					(1) dsc	
M-2.1.3.2	Downlink Message						DownlinkMessage ::= CHOICE	
M-2.1.3.2.1	No Message	M					[0] NULL	
M-2.1.3.2.2	aTC Downlink Message	M					[1] ATCDownlinkMessage	
M-2.1.4	ATCDownlinkMessage						ATCDownlinkMessage ::= SEQUENCE	
M-2.1.4.1	ATC Message Header	M					ATCMessageHeader	See M-3
M-2.1.4.2	ATC Downlink Message Data	M					ATCDownlinkMessageData	

Source: Chapter 4 - ASN.1		Receive - Ground ASE					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status			
M-2.1.4.2	ATC Downlink Message Data						ATCDownlinkMessageData ::= SEQUENCE	
M-2.1.4.2.1	Downlink Message Elements (1 - 5 messages)	M					SEQUENCE SIZE (1..5) OF ATCDownlinkMsgElementId	See M-4 and M-5
M-2.1.4.2.2	Constrained Data	M					SEQUENCE (OPTIONAL)	
M-2.1.4.2.2.1	Route Clearance Data	M					SEQUENCE SIZE (1..2) OF RouteClearance (OPTIONAL)	See P-19
M-2.1.4.2.2.2	Use of Extensibility	M					Use of Extensibility	

OPLINKP Status:

C.1 If Down Stream Clearance (DSC-User) supported then **M** else —

Table M-3: Uplink and Downlink Messages Common Elements

Source: Chapter 4 - ASN.1		Send - Ground ASE					Receive - Ground ASE					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-3.1	ATC Message Header											ATCMessageHeader ::= SEQUENCE	
M-3.1.1	Message Identification Number	M					M					[0] MsgIdentificationNumber	
M-3.1.2	Message Reference Number	M					M					[1] MsgReferenceNumber	a
M-3.1.3	Date and Time	M					M					[2] DateTimeGroup	
M-3.1.4	Logical Acknowledgment Request	O					M					[3] LogicalAck DEFAULT notRequired	
M-3.1.1	MsgIdentificationNumber											INTEGER Value (0..63)	
M-3.1.2	MsgReferenceNumber											INTEGER Value (0..63)	
M-3.1.3	Date and Time Group											DateTimeGroup ::= SEQUENCE	
M-3.1.3.1	date	M					M					Date	
M-3.1.3.2	timehhmmss	M					M					Timehhmmss	
M-3.1.3.1	Date											Date ::= SEQUENCE	
M-3.1.3.1.1	year	M					M					Year	
M-3.1.3.1.2	month	M					M					Month	
M-3.1.3.1.3	day	M					M					Day	
M-3.1.3.1.1	Year (1996 to 2095)											INTEGER Value (1996..2095)	
M-3.1.3.1.3	Day of the month (1 to 31)											INTEGER Value (1..31)	
M-3.1.3.1.2	Month of the year (1 to 12)											INTEGER Value (1..12)	
M-3.1.3.2	Timehhmmss											Timehhmmss ::= SEQUENCE	
M-3.1.3.2.1	hours and minutes	M					M					Time	See P-24
M-3.1.3.2.2	seconds	M					M					TimeSeconds	
M-3.1.3.2.2	TimeSeconds											INTEGER Value (0..59)	
M-3.1.4	LogicalAck											LogicalAck ::= ENUMERATED	
M-3.1.4.1	Required	O					M					(0) required	
M-3.1.4.2	Not Required	M					M					(1) notRequired	

Notes:

- a Element must be supported, only optional in ASN.1 as it is only present in PDUs containing responses

Table M-4: Uplink Message Elements

Source: Chapter 4 - ASN.1		Sending - Ground User					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-4	Uplink Message Elements						ATCUplinkMsgElementId ::= CHOICE	
M-4.0	UM0 UNABLE	O					[0] NULL	
M-4.1	UM1 STANDBY	O					[1] NULL	
M-4.2	UM2 REQUEST DEFERRED	O					[2] NULL	
M-4.3	UM3 ROGER	O					[3] NULL	
M-4.4	UM4 AFFIRM	O					[4] NULL	
M-4.5	UM5 NEGATIVE	O					[5] NULL	
M-4.6	UM6 EXPECT [level]	O					[6] Level	See P-14
M-4.7	UM7 EXPECT CLIMB AT [time]	O					[7] Time	See P-24
M-4.8	UM8 EXPECT CLIMB AT [position]	O					[8] Position	See P-15
M-4.9	UM9 EXPECT DESCENT AT [time]	O					[9] Time	See P-24
M-4.10	UM10 EXPECT DESCENT AT [position]	O					[10] Position	See P-15
M-4.11	UM11 EXPECT CRUISE CLIMB AT [time]	O					[11] Time	See P-24
M-4.12	UM12 EXPECT CRUISE CLIMB AT [position]	O					[12] Position	See P-15
M-4.13	UM13 AT [time] EXPECT CLIMB TO [level]	O					[13] TimeLevel	See M-8
M-4.14	UM14 AT [position] EXPECT CLIMB TO [level]	O					[14] PositionLevel	See M-8
M-4.15	UM15 AT [time] EXPECT DESCENT TO [level]	O					[15] TimeLevel	See M-8
M-4.16	UM16 AT [position] EXPECT DESCENT TO [level]	O					[16] PositionLevel	See M-8
M-4.17	UM17 AT [time] EXPECT CRUISE CLIMB TO [level]	O					[17] TimeLevel	See M-8
M-4.18	UM18 AT [position] EXPECT CRUISE CLIMB TO [level]	O					[18] PositionLevel	See M-8
M-4.19	UM19 MAINTAIN [level]	O					[19] Level	See P-14
M-4.20	UM20 CLIMB TO [level]	O					[20] Level	See P-14
M-4.21	UM21 AT [time] CLIMB TO [level]	O					[21] TimeLevel	See M-8
M-4.22	UM22 AT [position] CLIMB TO [level]	O					[22] PositionLevel	See M-8
M-4.23	UM23 DESCEND TO [level]	O					[23] Level	See P-14
M-4.24	UM24 AT [time] DESCEND TO [level]	O					[24] TimeLevel	See M-8
M-4.25	UM25 AT [position] DESCEND TO [level]	O					[25] PositionLevel	See M-8
M-4.26	UM26 CLIMB TO REACH [level] BY [time]	O					[26] LevelTime	See M-8
M-4.27	UM27 CLIMB TO REACH [level] BY [position]	O					[27] LevelPosition	See M-8
M-4.28	UM28 DESCEND TO REACH [level] BY [time]	O					[28] LevelTime	See M-8
M-4.29	UM29 DESCEND TO REACH [level] BY [position]	O					[29] LevelPosition	See M-8
M-4.30	UM30 MAINTAIN BLOCK [level] TO [level]	O					[30] LevelLevel	See M-8
M-4.31	UM31 CLIMB TO AND MAINTAIN BLOCK [level] TO [level]	O					[31] LevelLevel	See M-8
M-4.32	UM32 DESCEND TO AND MAINTAIN BLOCK [level] TO [level]	O					[32] LevelLevel	See M-8
M-4.33	UM33 Reserved	X					[33] NULL	See M-5
M-4.34	UM34 CRUISE CLIMB TO [level]	O					[34] Level	See P-14
M-4.35	UM35 CRUISE CLIMB ABOVE [level]	O					[35] Level	See P-14
M-4.36	UM36 EXPEDITE CLIMB TO [level]	O					[36] Level	See P-14
M-4.37	UM37 EXPEDITE DESCENT TO [level]	O					[37] Level	See P-14
M-4.38	UM38 IMMEDIATELY CLIMB TO [level]	O					[38] Level	See P-14
M-4.39	UM39 IMMEDIATELY DESCEND TO [level]	O					[39] Level	See P-14
M-4.40	UM40 Reserved	X					[40] NULL	See M-5
M-4.41	UM41 Reserved	X					[41] NULL	See M-5
M-4.42	UM42 EXPECT TO CROSS [position] AT [level]	O					[42] PositionLevel	See M-8
M-4.43	UM43 EXPECT TO CROSS [position] AT OR ABOVE [level]	O					[43] PositionLevel	See M-8
M-4.44	UM44 EXPECT TO CROSS [position] AT OR BELOW [level]	O					[44] PositionLevel	See M-8
M-4.45	UM45 EXPECT TO CROSS [position] AT AND MAINTAIN [level]	O					[45] PositionLevel	See M-8
M-4.46	UM46 CROSS [position] AT [level]	O					[46] PositionLevel	See M-8

Source: Chapter 4 - ASN.1		Sending - Ground User				ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINK Profile	Profile Status	Cons	Implementation Status	Cons	
M-4.47	UM47 CROSS [position] AT OR ABOVE [level]	O				[47] PositionLevel	See M-8
M-4.48	UM48 CROSS [position] AT OR BELOW [level]	O				[48] PositionLevel	See M-8
M-4.49	UM49 CROSS [position] AT AND MAINTAIN [level]	O				[49] PositionLevel	See M-8
M-4.50	UM50 CROSS [position] BETWEEN [level] AND [level]	O				[50] PositionLevelLevel	See M-8
M-4.51	UM51 CROSS [position] AT [time]	O				[51] PositionTime	See M-8
M-4.52	UM52 CROSS [position] AT OR BEFORE [time]	O				[52] PositionTime	See M-8
M-4.53	UM53 CROSS [position] AT OR AFTER [time]	O				[53] PositionTime	See M-8
M-4.54	UM54 CROSS [position] BETWEEN [time] AND [time]	O				[54] PositionTimeTime	See M-8
M-4.55	UM55 CROSS [position] AT [speed]	O				[55] PositionSpeed	See M-8
M-4.56	UM56 CROSS [position] AT OR LESS THAN [speed]	O				[56] PositionSpeed	See M-8
M-4.57	UM57 CROSS [position] AT OR GREATER THAN [speed]	O				[57] PositionSpeed	See M-8
M-4.58	UM58 CROSS [position] AT [time] AT [level]	O				[58] PositionTimeLevel	See M-8
M-4.59	UM59 CROSS [position] AT OR BEFORE [time] AT [level]	O				[59] PositionTimeLevel	See M-8
M-4.60	UM60 CROSS [position] AT OR AFTER [time] AT [level]	O				[60] PositionTimeLevel	See M-8
M-4.61	UM61 CROSS [position] AT AND MAINTAIN [level] AT [speed]	O				[61] PositionLevelSpeed	See M-8
M-4.62	UM62 AT [time] CROSS [position] AT AND MAINTAIN [level]	O				[62] TimePositionLevel	See M-8
M-4.63	UM63 AT [time] CROSS [position] AT AND MAINTAIN [level] AT [speed]	O				[63] TimePositionLevelSpeed	See M-8
M-4.64	UM64 OFFSET [specifiedDistance] [direction] OF ROUTE	O				[64] DistanceSpecifiedDirection	See P-8
M-4.65	UM65 AT [position] OFFSET [specifiedDistance] [direction] OF ROUTE	O				[65] PositionDistanceSpecifiedDirection	See M-8
M-4.66	UM66 AT [time] OFFSET [specifiedDistance] [direction] OF ROUTE	O				[66] TimeDistanceSpecifiedDirection	See M-8
M-4.67	UM67 PROCEED BACK ON ROUTE	O				[67] NULL	
M-4.68	UM68 REJOIN ROUTE BY [position]	O				[68] Position	See P-15
M-4.69	UM69 REJOIN ROUTE BY [time]	O				[69] Time	See P-24
M-4.70	UM70 EXPECT BACK ON ROUTE BY [position]	O				[70] Position	See P-15
M-4.71	UM71 EXPECT BACK ON ROUTE BY [time]	O				[71] Time	See P-24
M-4.72	UM72 RESUME OWN NAVIGATION	O				[72] NULL	
M-4.73	UM73 [DepartureClearance]	O				[73] DepartureClearance	See P-5
M-4.74	UM74 PROCEED DIRECT TO [position]	O				[74] Position	See P-15
M-4.75	UM75 WHEN ABLE PROCEED DIRECT TO [position]	O				[75] Position	See P-15
M-4.76	UM76 AT [time] PROCEED DIRECT TO [position]	O				[76] TimePosition	See M-8
M-4.77	UM77 AT [position] PROCEED DIRECT TO [position]	O				[77] PositionPosition	See M-8
M-4.78	UM78 AT [level] PROCEED DIRECT TO [position]	O				[78] LevelPosition	See M-8
M-4.79	UM79 CLEARED TO [position] VIA [routeClearance]	O				[79] PositionRouteClearanceIndex	See M-8
M-4.80	UM80 CLEARED [route clearance]	O				[80] RouteClearanceIndex	See P-19
M-4.81	UM81 CLEARED [procedure name]	O				[81] ProcedureName	See P-17
M-4.82	UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE	O				[82] DistanceSpecifiedDirection	See P-8
M-4.83	UM83 AT [position] CLEARED [routeClearance]	O				[83] PositionRouteClearanceIndex	See M-8
M-4.84	UM84 AT [position] CLEARED [procedureName]	O				[84] PositionProcedureName	See M-8
M-4.85	UM85 EXPECT [routeClearance]	O				[85] RouteClearanceIndex	See P-19
M-4.86	UM86 AT [position] EXPECT [routeClearance]	O				[86] PositionRouteClearanceIndex	See M-8
M-4.87	UM87 EXPECT DIRECT TO [position]	O				[87] Position	See P-15
M-4.88	UM88 AT [position] EXPECT DIRECT TO [position]	O				[88] PositionPosition	See M-8
M-4.89	UM89 AT [time] EXPECT DIRECT TO [position]	O				[89] TimePosition	See M-8
M-4.90	UM90 AT [level] EXPECT DIRECT TO [position]	O				[90] LevelPosition	See M-8
M-4.91	UM91 HOLD AT [position] MAINTAIN [level] INBOUND TRACK [degrees] [direction] TURNS [legtype]	O				[91] HoldClearance	See P-11
M-4.92	UM92 HOLD AT [position] AS PUBLISHED MAINTAIN [level]	O				[92] PositionLevel	See M-8
M-4.93	UM93 EXPECT FURTHER CLEARANCE AT [time]	O				[93] Time	See P-24
M-4.94	UM94 TURN [direction] HEADING [degrees]	O				[94] DirectionDegrees	See M-8
M-4.95	UM95 TURN [direction] GROUND TRACK [degrees]	O				[95] DirectionDegrees	See M-8

Source: Chapter 4 - ASN.1		Sending - Ground User					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-4.96	UM96 CONTINUE PRESENT HEADING	O					[96] NULL	
M-4.97	UM97 AT [position] FLY HEADING [degrees]	O					[97] PositionDegrees	See M-8
M-4.98	UM98 IMMEDIATELY TURN [direction] HEADING [degrees]	O					[98] DirectionDegrees	See M-8
M-4.99	UM99 EXPECT [procedureName]	O					[99] ProcedureName	See P-17
M-4.100	UM100 AT [time] EXPECT [speed]	O					[100] TimeSpeed	See M-8
M-4.101	UM101 AT [position] EXPECT [speed]	O					[101] PositionSpeed	See M-8
M-4.102	UM102 AT [level] EXPECT [speed]	O					[102] LevelSpeed	See M-8
M-4.103	UM103 AT [time] EXPECT [speed] TO [speed]	O					[103] TimeSpeedSpeed	See M-8
M-4.104	UM104 AT [position] EXPECT [speed] TO [speed]	O					[104] PositionSpeedSpeed	See M-8
M-4.105	UM105 AT [level] EXPECT [speed] TO [speed]	O					[105] LevelSpeedSpeed	See M-8
M-4.106	UM106 MAINTAIN [speed]	O					[106] Speed	See P-22
M-4.107	UM107 MAINTAIN PRESENT SPEED	O					[107] NULL	
M-4.108	UM108 MAINTAIN [speed] OR GREATER	O					[108] Speed	See P-22
M-4.109	UM109 MAINTAIN [speed] OR LESS	O					[109] Speed	See P-22
M-4.110	UM110 MAINTAIN [speed] TO [speed]	O					[110] SpeedSpeed	See M-8
M-4.111	UM111 INCREASE SPEED TO [speed]	O					[111] Speed	See P-22
M-4.112	UM112 INCREASE SPEED TO [speed] OR GREATER	O					[112] Speed	See P-22
M-4.113	UM113 REDUCE SPEED TO [speed]	O					[113] Speed	See P-22
M-4.114	UM114 REDUCE SPEED TO [speed] OR LESS	O					[114] Speed	See P-22
M-4.115	UM115 DO NOT EXCEED [speed]	O					[115] Speed	See P-22
M-4.116	UM116 RESUME NORMAL SPEED	O					[116] NULL	
M-4.117	UM117 CONTACT [unitname] [frequency]	O					[117] UnitNameFrequency	See M-8
M-4.118	UM118 AT [position] CONTACT [unitname] [frequency]	O					[118] PositionUnitNameFrequency	See M-8
M-4.119	UM119 AT [time] CONTACT [unitname] [frequency]	O					[119] TimeUnitNameFrequency	See M-8
M-4.120	UM120 MONITOR [unitname] [frequency]	O					[120] UnitNameFrequency	See M-8
M-4.121	UM121 AT [position] MONITOR [unitname] [frequency]	O					[121] PositionUnitNameFrequency	See M-8
M-4.122	UM122 AT [time] MONITOR [unitname] [frequency]	O					[122] TimeUnitNameFrequency	See M-8
M-4.123	UM123 SQUAWK [code]	O					[123] Code	See M-8
M-4.124	UM124 STOP SQUAWK	O					[124] NULL	
M-4.125	UM125 SQUAWK MODE CHARLIE	O					[125] NULL	
M-4.126	UM126 STOP SQUAWK MODE CHARLIE	O					[126] NULL	
M-4.127	UM127 REPORT BACK ON ROUTE	O					[127] NULL	
M-4.128	UM128 REPORT LEAVING [level]	O					[128] Level	See P-14
M-4.129	UM129 REPORT MAINTAINING [level]	O					[129] Level	See P-14
M-4.130	UM130 REPORT PASSING [position]	O					[130] Position	See P-15
M-4.131	UM131 REPORT REMAINING FUEL AND PERSONS ON BOARD	O					[131] NULL	
M-4.132	UM132 REPORT POSITION	O					[132] NULL	
M-4.133	UM133 REPORT PRESENT LEVEL	O					[133] NULL	
M-4.134	UM134 REPORT [speedtype] [speedtype] [speedtype] SPEED	O					[134] SpeedTypeSpeedTypeSpeedType	See M-8
M-4.135	UM135 CONFIRM ASSIGNED LEVEL	O					[135] NULL	
M-4.136	UM136 CONFIRM ASSIGNED SPEED	O					[136] NULL	
M-4.137	UM137 CONFIRM ASSIGNED ROUTE	O					[137] NULL	
M-4.138	UM138 CONFIRM TIME OVER REPORTED WAY POINT	O					[138] NULL	
M-4.139	UM139 CONFIRM REPORTED WAYPOINT	O					[139] NULL	
M-4.140	UM140 CONFIRM NEXT WAYPOINT	O					[140] NULL	
M-4.141	UM141 CONFIRM NEXT WAYPOINT ETA	O					[141] NULL	
M-4.142	UM142 CONFIRM ENSUING WAYPOINT	O					[142] NULL	
M-4.143	UM143 CONFIRM REQUEST	O					[143] NULL	
M-4.144	UM144 CONFIRM SQUAWK	O					[144] NULL	
M-4.145	UM145 REPORT HEADING	O					[145] NULL	
M-4.146	UM146 REPORT GROUND TRACK	O					[146] NULL	

Source: Chapter 4 - ASN.1		Sending - Ground User					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINK Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons		
M-4.147	UM147 REQUEST POSITION REPORT	O					[147] NULL	
M-4.148	UM148 WHEN CAN YOU ACCEPT [level]	O					[148] Level	See P-14
M-4.149	UM149 CAN YOU ACCEPT [level] AT [position]	O					[149] LevelPosition	See M-8
M-4.150	UM150 CAN YOU ACCEPT [level] AT [time]	O					[150] LevelTime	See M-8
M-4.151	UM151 WHEN CAN YOU ACCEPT [speed]	O					[151] Speed	See P-22
M-4.152	UM152 WHEN CAN YOU ACCEPT [specifiedDistance] [direction] OFFSET	O					[152] DistanceSpecifiedDirection	See P-8
M-4.153	UM153 ALTIMETER [altimeter]	O					[153] Altimeter	See P-2
M-4.154	UM154 RADAR SERVICE TERMINATED	O					[154] NULL	
M-4.155	UM155 RADAR CONTACT [position]	O					[155] Position	See P-15
M-4.156	UM156 RADAR CONTACT LOST	O					[156] NULL	
M-4.157	UM157 CHECK STUCK MICROPHONE [frequency]	O					[157] Frequency	See P-10
M-4.158	UM158 ATIS [atiscode]	O					[158] ATISCode	See M-8
M-4.159	UM159 ERROR [errorInformation]	M					[159] ErrorInformation	See P-9
M-4.160	UM160 NEXT DATA AUTHORITY [facility]	O					[160] Facility	See M-8
M-4.161	UM161 END SERVICE	O					[161] NULL	
M-4.162	UM162 SERVICE UNAVAILABLE	M					[162] NULL	
M-4.163	UM163 [facilityDesignation]	O					[163] FacilityDesignation	See M-8
M-4.164	UM164 WHEN READY	O					[164] NULL	
M-4.165	UM165 THEN	O					[165] NULL	
M-4.166	UM166 DUE TO [traffictype] TRAFFIC	O					[166] TrafficType	See M-8
M-4.167	UM167 DUE TO AIRSPACE RESTRICTION	O					[167] NULL	
M-4.168	UM168 DISREGARD	O					[168] NULL	
M-4.169	UM169 [freetext]	O					[169] FreeText	See M-8
M-4.170	UM170 [freetext]	O					[170] FreeText	See M-8
M-4.171	UM171 CLIMB AT [verticalRate] MINIMUM	O					[171] VerticalRate	See P-26
M-4.172	UM172 CLIMB AT [verticalRate] MAXIMUM	O					[172] VerticalRate	See P-26
M-4.173	UM173 DESCEND AT [verticalRate] MINIMUM	O					[173] VerticalRate	See P-26
M-4.174	UM174 DESCEND AT [verticalRate] MAXIMUM	O					[174] VerticalRate	See P-26
M-4.175	UM175 REPORT REACHING [level]	O					[175] Level	See P-14
M-4.176	UM176 MAINTAIN OWN SEPARATION AND VMC	O					[176] NULL	
M-4.177	UM177 AT PILOTS DISCRETION	O					[177] NULL	
M-4.178	UM178 Reserved	X					[178] NULL	
M-4.179	UM179 SQUAWK IDENT	O					[179] NULL	
M-4.180	UM180 REPORT REACHING BLOCK [level] TO [level]	O					[180] LevelLevel	See M-8
M-4.181	UM181 REPORT DISTANCE [tofrom] [position]	O					[181] ToFromPosition	See M-8
M-4.182	UM182 CONFIRM ATIS CODE	O					[182] NULL	
M-4.183	UM183 [freetext]	M					[183] FreeText	See M-8
M-4.184	UM184 AT [time] REPORT DISTANCE [tofrom] [position]	O					[184] TimeToFromPosition	See M-8
M-4.185	UM185 AFTER PASSING [position] CLIMB TO [level]	O					[185] PositionLevel	See M-8
M-4.186	UM186 AFTER PASSING [position] DESCEND TO [level]	O					[186] PositionLevel	See M-8
M-4.187	UM187 [freetext]	O					[187] FreeText	See M-8
M-4.188	UM188 AFTER PASSING [position] MAINTAIN [speed]	O					[188] PositionSpeed	See M-8
M-4.189	UM189 ADJUST SPEED TO [speed]	O					[189] Speed	See P-22
M-4.190	UM190 FLY HEADING [degrees]	O					[190] Degrees	See P-4
M-4.191	UM191 ALL ATS TERMINATED	O					[191] NULL	
M-4.192	UM192 REACH [level] BY [time]	O					[192] LevelTime	See M-8
M-4.193	UM193 IDENTIFICATION LOST	O					[193] NULL	
M-4.194	UM194 [freetext]	O					[194] FreeText	See M-8
M-4.195	UM195 [freetext]	O					[195] FreeText	See M-8
M-4.196	UM196 [freetext]	O					[196] FreeText	See M-8
M-4.197	UM197 [freetext]	O					[197] FreeText	See M-8

Source: Chapter 4 - ASN.1		Sending - Ground User					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons		
M-4.198	UM198 [freetext]	O					[198] FreeText	See M-8
M-4.199	UM199 [freetext]	O					[199] FreeText	See M-8
M-4.200	UM200 REPORT REACHING	O					[200] NULL	
M-4.201	UM201 Not Used	X					[201] NULL	
M-4.202	UM202 Not Used	X					[202] NULL	
M-4.203	UM203 [freetext]	O					[203] FreeText	See M-8
M-4.204	UM204 [freetext]	O					[204] FreeText	See M-8
M-4.205	UM205 [freetext]	O					[205] FreeText	See M-8
M-4.206	UM206 [freetext]	O					[206] FreeText	See M-8
M-4.207	UM207 [freetext]	O					[207] FreeText	See M-8
M-4.208	UM208 [freetext]	O					[208] FreeText	See M-8
M-4.209	UM209 REACH [level] BY [position]	O					[209] LevelPosition	See M-8
M-4.210	UM210 IDENTIFIED [position]	O					[210] Position	See P-15
M-4.211	UM211 REQUEST FORWARDED	O					[211] NULL	
M-4.212	UM212 [facilitydesignation] ATIS [atiscodes] CURRENT	O					[212] FacilityDesignationATISCode	See M-8
M-4.213	UM213 [facilitydesignation] ALTIMETER [altimeter]	O					[213] FacilityDesignationAltimeter	See M-8
M-4.214	UM214 RVR RUNWAY [runway] [rvr]	O					[214] RunwayRVR	See M-8
M-4.215	UM215 TURN [direction] [degrees]	O					[215] DirectionDegrees	See M-8
M-4.216	UM216 REQUEST FLIGHT PLAN	O					[216] NULL	
M-4.217	UM217 REPORT ARRIVAL	O					[217] NULL	
M-4.218	UM218 REQUEST ALREADY RECEIVED	O					[218] NULL	
M-4.219	UM219 STOP CLIMB AT [level]	O					[219] Level	See P-14
M-4.220	UM220 STOP DESCENT AT [level]	O					[220] Level	See P-14
M-4.221	UM221 STOP TURN HEADING [degrees]	O					[221] Degrees	See P-4
M-4.222	UM222 NO SPEED RESTRICTION	O					[222] NULL	
M-4.223	UM223 REDUCE TO MINIMUM APPROACH SPEED	O					[223] NULL	
M-4.224	UM224 NO DELAY EXPECTED	O					[224] NULL	
M-4.225	UM225 DELAY NOT DETERMINED	O					[225] NULL	
M-4.226	UM226 EXPECTED APPROACH TIME [time]	O					[226] Time	See P-24
M-4.227	UM227 LOGICAL ACKNOWLEDGMENT	M					[227] NULL	
M-4.228	UM228 REPORT ETA [position]	O					[228] Position	See P-15
M-4.229	UM229 REPORT ALTERNATE AERODROME	O					[229] NULL	
M-4.230	UM230 IMMEDIATELY	O					[230] NULL	
M-4.231	UM231 STATE PREFERRED LEVEL	O					[231] NULL	
M-4.232	UM232 STATE-TOP-OF-DESCENT	O					[232] NULL	
M-4.233	UM233 USE OF LOGICAL ACKNOWLEDGMENT PROHIBITED	O					[233] NULL	
M-4.234	UM234 FLIGHT PLAN NOT HELD	O					[234] NULL	
M-4.235	UM235 ROGER 7500	O					[235] NULL	
M-4.236	UM236 LEAVE CONTROLLED AIRSPACE	O					[236] NULL	
M-4.237	Use of Extensibility	X					Use of Extensibility	

Table M-5: Uplink Messages Permitted Operational Responses

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response Attribute	Downlink Message	Profile Status	Imp Support	
M-5.0	UM0 UNABLE	N	—	—	—	
M-5.1	UM1 STANDBY	N	—	—	—	
M-5.2	UM2 REQUEST DEFERRED	N	—	—	—	
M-5.3	UM3 ROGER	N	—	—	—	
M-5.4	UM4 AFFIRM	N	—	—	—	
M-5.5	UM5 NEGATIVE	N	—	—	—	
M-5.6	UM6 EXPECT [level]	R	—	—	—	
M-5.7	UM7 EXPECT CLIMB AT [time]	R	—	—	—	
M-5.8	UM8 EXPECT CLIMB AT [position]	R	—	—	—	
M-5.9	UM9 EXPECT DESCENT AT [time]	R	—	—	—	
M-5.10	UM10 EXPECT DESCENT AT [position]	R	—	—	—	
M-5.11	UM11 EXPECT CRUISE CLIMB AT [time]	R	—	—	—	
M-5.12	UM12 EXPECT CRUISE CLIMB AT [position]	R	—	—	—	
M-5.13	UM13 AT [time] EXPECT CLIMB TO [level]	R	—	—	—	
M-5.14	UM14 AT [position] EXPECT CLIMB TO [level]	R	—	—	—	
M-5.15	UM15 AT [time] EXPECT DESCENT TO [level]	R	—	—	—	
M-5.16	UM16 AT [position] EXPECT DESCENT TO [level]	R	—	—	—	
M-5.17	UM17 AT [time] EXPECT CRUISE CLIMB TO [level]	R	—	—	—	
M-5.18	UM18 AT [position] EXPECT CRUISE CLIMB TO [level]	R	—	—	—	
M-5.19	UM19 MAINTAIN [level]	W/U	—	—	—	
M-5.20	UM20 CLIMB TO [level]	W/U	—	—	—	
M-5.21	UM21 AT [time] CLIMB TO [level]	W/U	—	—	—	
M-5.22	UM22 AT [position] CLIMB TO [level]	W/U	—	—	—	
M-5.23	UM23 DESCEND TO [level]	W/U	—	—	—	
M-5.24	UM24 AT [time] DESCEND TO [level]	W/U	—	—	—	
M-5.25	UM25 AT [position] DESCEND TO [level]	W/U	—	—	—	
M-5.26	UM26 CLIMB TO REACH [level] BY [time]	W/U	—	—	—	
M-5.27	UM27 CLIMB TO REACH [level] BY [position]	W/U	—	—	—	
M-5.28	UM28 DESCEND TO REACH [level] BY [time]	W/U	—	—	—	
M-5.29	UM29 DESCEND TO REACH [level] BY [position]	W/U	—	—	—	
M-5.30	UM30 MAINTAIN BLOCK [level] TO [level]	W/U	—	—	—	
M-5.31	UM31 CLIMB TO AND MAINTAIN BLOCK [level] TO [level]	W/U	—	—	—	
M-5.32	UM32 DESCEND TO AND MAINTAIN BLOCK [level] TO [level]	W/U	—	—	—	
M-5.33	UM33 Reserved	Y				
M-5.33.1			DM62 ERROR [invalid message element]			
M-5.34	UM34 CRUISE CLIMB TO [level]	W/U	—	—	—	
M-5.35	UM35 CRUISE CLIMB ABOVE [level]	W/U	—	—	—	
M-5.36	UM36 EXPEDITE CLIMB TO [level]	W/U	—	—	—	
M-5.37	UM37 EXPEDITE DESCENT TO [level]	W/U	—	—	—	
M-5.38	UM38 IMMEDIATELY CLIMB TO [level]	W/U	—	—	—	
M-5.39	UM39 IMMEDIATELY DESCEND TO [level]	W/U	—	—	—	
M-5.40	UM40 Reserved	Y				
M-5.40.1			DM62 ERROR [invalid message element]			
M-5.41	UM41 Reserved	Y				
M-5.41.1			DM62 ERROR [invalid message element]			
M-5.42	UM42 EXPECT TO CROSS [position] AT [level]	R	—	—	—	
M-5.43	UM43 EXPECT TO CROSS [position] AT OR ABOVE [level]	R	—	—	—	
M-5.44	UM44 EXPECT TO CROSS [position] AT OR BELOW [level]	R	—	—	—	

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response	Downlink Message	Profile	Imp	
		Attribute		Status	Support	
M-5.45	UM45 EXPECT TO CROSS [position] AT AND MAINTAIN [level]	R	—	—	—	
M-5.46	UM46 CROSS [position] AT [level]	W/U	—	—	—	
M-5.47	UM47 CROSS [position] AT OR ABOVE [level]	W/U	—	—	—	
M-5.48	UM48 CROSS [position] AT OR BELOW [level]	W/U	—	—	—	
M-5.49	UM49 CROSS [position] AT AND MAINTAIN [level]	W/U	—	—	—	
M-5.50	UM50 CROSS [position] BETWEEN [level] AND [level]	W/U	—	—	—	
M-5.51	UM51 CROSS [position] AT [time]	W/U	—	—	—	
M-5.52	UM52 CROSS [position] AT OR BEFORE [time]	W/U	—	—	—	
M-5.53	UM53 CROSS [position] AT OR AFTER [time]	W/U	—	—	—	
M-5.54	UM54 CROSS [position] BETWEEN [time] AND [time]	W/U	—	—	—	
M-5.55	UM55 CROSS [position] AT [speed]	W/U	—	—	—	
M-5.56	UM56 CROSS [position] AT OR LESS THAN [speed]	W/U	—	—	—	
M-5.57	UM57 CROSS [position] AT OR GREATER THAN [speed]	W/U	—	—	—	
M-5.58	UM58 CROSS [position] AT [time] AT [level]	W/U	—	—	—	
M-5.59	UM59 CROSS [position] AT OR BEFORE [time] AT [level]	W/U	—	—	—	
M-5.60	UM60 CROSS [position] AT OR AFTER [time] AT [level]	W/U	—	—	—	
M-5.61	UM61 CROSS [position] AT AND MAINTAIN [level] AT [speed]	W/U	—	—	—	
M-5.62	UM62 AT [time] CROSS [position] AT AND MAINTAIN [level]	W/U	—	—	—	
M-5.63	UM63 AT [time] CROSS [position] AT AND MAINTAIN [level] AT [speed]	W/U	—	—	—	
M-5.64	UM64 OFFSET [specifiedDistance] [direction] OF ROUTE	W/U	—	—	—	
M-5.65	UM65 AT [position] OFFSET [specifiedDistance] [direction] OF ROUTE	W/U	—	—	—	
M-5.66	UM66 AT [time] OFFSET [specifiedDistance] [direction] OF ROUTE	W/U	—	—	—	
M-5.67	UM67 PROCEED BACK ON ROUTE	W/U	—	—	—	
M-5.68	UM68 REJOIN ROUTE BY [position]	W/U	—	—	—	
M-5.69	UM69 REJOIN ROUTE BY [time]	W/U	—	—	—	
M-5.70	UM70 EXPECT BACK ON ROUTE BY [position]	R	—	—	—	
M-5.71	UM71 EXPECT BACK ON ROUTE BY [time]	R	—	—	—	
M-5.72	UM72 RESUME OWN NAVIGATION	W/U	—	—	—	
M-5.73	UM73 [DepartureClearance]	W/U	—	—	—	
M-5.74	UM74 PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.75	UM75 WHEN ABLE PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.76	UM76 AT [time] PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.77	UM77 AT [position] PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.78	UM78 AT [level] PROCEED DIRECT TO [position]	W/U	—	—	—	
M-5.79	UM79 CLEARED TO [position] VIA [routeClearance]	W/U	—	—	—	
M-5.80	UM80 CLEARED [route clearance]	W/U	—	—	—	
M-5.81	UM81 CLEARED [procedure name]	W/U	—	—	—	
M-5.82	UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE	W/U	—	—	—	
M-5.83	UM83 AT [position] CLEARED [routeClearance]	W/U	—	—	—	
M-5.84	UM84 AT [position] CLEARED [procedureName]	W/U	—	—	—	
M-5.85	UM85 EXPECT [routeClearance]	R	—	—	—	
M-5.86	UM86 AT [position] EXPECT [routeClearance]	R	—	—	—	
M-5.87	UM87 EXPECT DIRECT TO [position]	R	—	—	—	
M-5.88	UM88 AT [position] EXPECT DIRECT TO [position]	R	—	—	—	
M-5.89	UM89 AT [time] EXPECT DIRECT TO [position]	R	—	—	—	
M-5.90	UM90 AT [level] EXPECT DIRECT TO [position]	R	—	—	—	
M-5.91	UM91 HOLD AT [position] MAINTAIN [level] INBOUND TRACK [degrees] [direction] TURNS [legtype]	W/U	—	—	—	

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response	Downlink Message	Profile	Imp	
		Attribute		Status	Support	
M-5.92	UM92 HOLD AT [position] AS PUBLISHED MAINTAIN [level]	W/U	—	—	—	
M-5.93	UM93 EXPECT FURTHER CLEARANCE AT [time]	R	—	—	—	
M-5.94	UM94 TURN [direction] HEADING [degrees]	W/U	—	—	—	
M-5.95	UM95 TURN [direction] GROUND TRACK [degrees]	W/U	—	—	—	
M-5.96	UM96 CONTINUE PRESENT HEADING	W/U	—	—	—	
M-5.97	UM97 AT [position] FLY HEADING [degrees]	W/U	—	—	—	
M-5.98	UM98 IMMEDIATELY TURN [direction] HEADING [degrees]	W/U	—	—	—	
M-5.99	UM99 EXPECT [procedureName]	R	—	—	—	
M-5.100	UM100 AT [time] EXPECT [speed]	R	—	—	—	
M-5.101	UM101 AT [position] EXPECT [speed]	R	—	—	—	
M-5.102	UM102 AT [level] EXPECT [speed]	R	—	—	—	
M-5.103	UM103 AT [time] EXPECT [speed] TO [speed]	R	—	—	—	
M-5.104	UM104 AT [position] EXPECT [speed] TO [speed]	R	—	—	—	
M-5.105	UM105 AT [level] EXPECT [speed] TO [speed]	R	—	—	—	
M-5.106	UM106 MAINTAIN [speed]	W/U	—	—	—	
M-5.107	UM107 MAINTAIN PRESENT SPEED	W/U	—	—	—	
M-5.108	UM108 MAINTAIN [speed] OR GREATER	W/U	—	—	—	
M-5.109	UM109 MAINTAIN [speed] OR LESS	W/U	—	—	—	
M-5.110	UM110 MAINTAIN [speed] TO [speed]	W/U	—	—	—	
M-5.111	UM111 INCREASE SPEED TO [speed]	W/U	—	—	—	
M-5.112	UM112 INCREASE SPEED TO [speed] OR GREATER	W/U	—	—	—	
M-5.113	UM113 REDUCE SPEED TO [speed]	W/U	—	—	—	
M-5.114	UM114 REDUCE SPEED TO [speed] OR LESS	W/U	—	—	—	
M-5.115	UM115 DO NOT EXCEED [speed]	W/U	—	—	—	
M-5.116	UM116 RESUME NORMAL SPEED	W/U	—	—	—	
M-5.117	UM117 CONTACT [unitname] [frequency]	W/U	—	—	—	
M-5.118	UM118 AT [position] CONTACT [unitname] [frequency]	W/U	—	—	—	
M-5.119	UM119 AT [time] CONTACT [unitname] [frequency]	W/U	—	—	—	
M-5.120	UM120 MONITOR [unitname] [frequency]	W/U	—	—	—	
M-5.121	UM121 AT [position] MONITOR [unitname] [frequency]	W/U	—	—	—	
M-5.122	UM122 AT [time] MONITOR [unitname] [frequency]	W/U	—	—	—	
M-5.123	UM123 SQUAWK [code]	W/U	—	—	—	
M-5.124	UM124 STOP SQUAWK	W/U	—	—	—	
M-5.125	UM125 SQUAWK MODE CHARLIE	W/U	—	—	—	
M-5.126	UM126 STOP SQUAWK MODE CHARLIE	W/U	—	—	—	
M-5.127	UM127 REPORT BACK ON ROUTE	W/U				
M-5.127.1			DM41 BACK ON ROUTE			a
M-5.128	UM128 REPORT LEAVING [level]	W/U				
M-5.128.1			DM28 LEAVING [level]			a
M-5.129	UM129 REPORT MAINTAINING [level]	W/U				
M-5.129.1			DM37 MAINTAINING [level]			a
M-5.130	UM130 REPORT PASSING [position]	W/U				
M-5.130.1			DM31 PASSING [position]			a
M-5.131	UM131 REPORT REMAINING FUEL AND PERSONS ON BOARD	Y				
M-5.131.1			DM57 [remainingFuel] OF FUEL REMAINING AND [personsonboard] PERSONS ON BOARD			
M-5.132	UM132 REPORT POSITION	Y				
M-5.132.1			DM33 PRESENT POSITION [position]			
M-5.133	UM133 REPORT PRESENT LEVEL	Y				
M-5.133.1			DM32 PRESENT LEVEL [level]			
M-5.133.2			DM37 MAINTAINING [level]			
M-5.134	UM134 REPORT [speedtype] [speedtype] [speedtype] SPEED	Y				

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response Attribute	Downlink Message	Profile Status	Imp Support	
M-5.134.1			DM113 [speedType] [speedType] [speedType] SPEED [speed]			
M-5.134.2			DM34 PRESENT SPEED [speed]			
M-5.135	UM135 CONFIRM ASSIGNED LEVEL	Y				
M-5.135.1			DM38 ASSIGNED LEVEL [level]			
M-5.135.2			DM77 ASSIGNED BLOCK [level] TO [level]			
M-5.136	UM136 CONFIRM ASSIGNED SPEED	Y				
M-5.136.1			DM39 ASSIGNED SPEED [speed]			
M-5.137	UM137 CONFIRM ASSIGNED ROUTE	Y				
M-5.137.1			DM40 ASSIGNED ROUTE [routeClearance]			
M-5.138	UM138 CONFIRM TIME OVER REPORTED WAY POINT	Y				
M-5.138.1			DM46 REPORTED WAYPOINT [time]			
M-5.139	UM139 CONFIRM REPORTED WAYPOINT	Y				
M-5.139.1			DM45 REPORTED WAYPOINT [position]			
M-5.140	UM140 CONFIRM NEXT WAYPOINT	Y				
M-5.140.1			DM42 NEXT WAYPOINT [position]			
M-5.141	UM141 CONFIRM NEXT WAYPOINT ETA	Y				
M-5.141.1			DM43 NEXT WAYPOINT ETA [time]			
M-5.142	UM142 CONFIRM ENSUING WAYPOINT	Y				
M-5.142.1			DM44 ENSUING WAYPOINT [position]			
M-5.143	UM143 CONFIRM REQUEST	Y				
M-5.143.1			Last downlink request sent			
M-5.144	UM144 CONFIRM SQUAWK	Y				
M-5.144.1			DM47 SQUAWKING [code]			
M-5.145	UM145 REPORT HEADING	Y				
M-5.145.1			DM35 PRESENT HEADING [degrees]			
M-5.146	UM146 REPORT GROUND TRACK	Y				
M-5.146.1			DM36 PRESENT GROUND TRACK [degrees]			
M-5.147	UM147 REQUEST POSITION REPORT	Y				
M-5.147.1			DM48 POSITION REPORT [positionreport]			
M-5.148	UM148 WHEN CAN YOU ACCEPT [level]	Y				
M-5.148.1			DM81 WE CAN ACCEPT [level] AT [time]			
M-5.148.2			DM82 WE CANNOT ACCEPT [level]			
M-5.149	UM149 CAN YOU ACCEPT [level] AT [position]	A/N	—	—	—	
M-5.150	UM150 CAN YOU ACCEPT [level] AT [time]	A/N	—	—	—	
M-5.151	UM151 WHEN CAN YOU ACCEPT [speed]	Y				
M-5.151.1			DM83 WE CAN ACCEPT [speed] AT [time]			
M-5.151.2			DM84 WE CANNOT ACCEPT [speed]			
M-5.152	UM152 WHEN CAN YOU ACCEPT [specifiedDistance] [direction] OFFSET	Y				
M-5.152.1			DM85 WE CAN ACCEPT [specifiedDistance] [direction] AT [time]			
M-5.152.2			DM86 WE CANNOT ACCEPT [specifiedDistance] [direction]			
M-5.153	UM153 ALTIMETER [altimeter]	R	—	—	—	
M-5.154	UM154 RADAR SERVICE TERMINATED	R	—	—	—	
M-5.155	UM155 RADAR CONTACT [position]	R	—	—	—	
M-5.156	UM156 RADAR CONTACT LOST	R	—	—	—	
M-5.157	UM157 CHECK STUCK MICROPHONE [frequency]	N	—	—	—	
M-5.158	UM158 ATIS [atiscode]	R	—	—	—	
M-5.159	UM159 ERROR [errorInformation]	N	—	—	—	
M-5.160	UM160 NEXT DATA AUTHORITY [facility]	N	—	—	—	
M-5.161	UM161 END SERVICE	N	—	—	—	
M-5.162	UM162 SERVICE UNAVAILABLE	N	—	—	—	

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response	Downlink Message	Profile	Imp	
		Attribute		Status	Support	
M-5.163	UM163 [facilitydesignator]	N	—	—	—	
M-5.164	UM164 WHEN READY	N	—	—	—	
M-5.165	UM165 THEN	N	—	—	—	
M-5.166	UM166 DUE TO [traffictype] TRAFFIC	N	—	—	—	
M-5.167	UM167 DUE TO AIRSPACE RESTRICTION	N	—	—	—	
M-5.168	UM168 DISREGARD	R	—	—	—	
M-5.169	UM169 [freetext]	R	—	—	—	
M-5.170	UM170 [freetext]	R	—	—	—	
M-5.171	UM171 CLIMB AT [verticalRate] MINIMUM	W/U	—	—	—	
M-5.172	UM172 CLIMB AT [verticalRate] MAXIMUM	W/U	—	—	—	
M-5.173	UM173 DESCEND AT [verticalRate] MINIMUM	W/U	—	—	—	
M-5.174	UM174 DESCEND AT [verticalRate] MAXIMUM	W/U	—	—	—	
M-5.175	UM175 REPORT REACHING [level]	W/U	—	—	—	
M-5.175.1			DM72 REACHING [level]			a
M-5.176	UM176 MAINTAIN OWN SEPARATION AND VMC	W/U	—	—	—	
M-5.177	UM177 AT PILOTS DISCRETION	N	—	—	—	
M-5.178	UM178 Reserved	Y	DM62 ERROR [invalid message element]			
M-5.179	UM179 SQUAWK IDENT	W/U	—	—	—	
M-5.180	UM180 REPORT REACHING BLOCK [level] TO [level]	W/U	—			
M-5.180.1			DM76 REACHING BLOCK [level] TO [level]			a
M-5.181	UM181 REPORT DISTANCE [tofrom] [position]	Y	—			
M-5.181.1			DM78 AT [time] [distance] [tofrom] [position]			
M-5.182	UM182 CONFIRM ATIS CODE	Y	—			
M-5.182.1			DM79 ATIS [atiscode]			
M-5.183	UM183 [freetext]	N	—	—	—	
M-5.184	UM184 AT [time] REPORT DISTANCE [tofrom] [position]	Y	—			
M-5.184.1			DM78 AT [time] [distance] [tofrom] [position]			
M-5.185	UM185 AFTER PASSING [position] CLIMB TO [level]	W/U	—	—	—	
M-5.186	UM186 AFTER PASSING [position] DESCEND TO [level]	W/U	—	—	—	
M-5.187	UM187 [freetext]	N	—	—	—	
M-5.188	UM188 AFTER PASSING [position] MAINTAIN [speed]	W/U	—	—	—	
M-5.189	UM189 ADJUST SPEED TO [speed]	W/U	—	—	—	
M-5.190	UM190 FLY HEADING [degrees]	W/U	—	—	—	
M-5.191	UM191 ALL ATS TERMINATED	R	—	—	—	
M-5.192	UM192 REACH [level] BY [time]	W/U	—	—	—	
M-5.193	UM193 IDENTIFICATION LOST	R	—	—	—	
M-5.194	UM194 [freetext]	Y	No defined response			
M-5.195	UM195 [freetext]	R	—	—	—	
M-5.196	UM196 [freetext]	W/U	—	—	—	
M-5.197	UM197 [freetext]	W/U	—	—	—	
M-5.198	UM198 [freetext]	W/U	—	—	—	
M-5.199	UM199 [freetext]	N	—	—	—	
M-5.200	UM200 REPORT REACHING	W/U	—	—	—	
M-5.201	UM201 Not Used	N	—	—	—	
M-5.202	UM202 Not Used	N	—	—	—	
M-5.203	UM203 [freetext]	R	—	—	—	
M-5.204	UM204 [freetext]	Y	No defined response			
M-5.205	UM205 [freetext]	A/N	—	—	—	
M-5.206	UM206 [freetext]	Y	No defined response			
M-5.207	UM207 [freetext]	Y	No defined response			
M-5.208	UM208 [freetext]	N	—	—	—	
M-5.209	UM209 REACH [level] BY [position]	W/U	—	—	—	

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response	Downlink Message	Profile	Imp	
		Attribute		Status	Support	
M-5.210	UM210 IDENTIFIED [position]	R	—	—	—	
M-5.211	UM211 REQUEST FORWARDED	N	—	—	—	
M-5.212	UM212 [facilitydesignation] ATIS [atiscode] CURRENT	R	—	—	—	
M-5.213	UM213 [facilitydesignation] ALTIMETER [altimeter]	R	—	—	—	
M-5.214	UM214 RVR RUNWAY [runway] [rvr]	R	—	—	—	
M-5.215	UM215 TURN [direction] [degrees]	W/U	—	—	—	
M-5.216	UM216 REQUEST FLIGHT PLAN	Y				
M-5.216.1						
M-5.217	UM217 REPORT ARRIVAL	Y				
M-5.217.1			DM102 LANDING REPORT			a
M-5.218	UM218 REQUEST ALREADY RECEIVED	N	—	—	—	
M-5.219	UM219 STOP CLIMB AT [level]	W/U	—	—	—	
M-5.220	UM220 STOP DESCENT AT [level]	W/U	—	—	—	
M-5.221	UM221 STOP TURN HEADING [degrees]	W/U	—	—	—	
M-5.222	UM222 NO SPEED RESTRICTION	R	—	—	—	
M-5.223	UM223 REDUCE TO MINIMUM APPROACH SPEED	W/U	—	—	—	
M-5.224	UM224 NO DELAY EXPECTED	R	—	—	—	
M-5.225	UM225 DELAY NOT DETERMINED	R	—	—	—	
M-5.226	UM226 EXPECTED APPROACH TIME [time]	R	—	—	—	
M-5.227	UM227 LOGICAL ACKNOWLEDGMENT	N	—	—	—	
M-5.228	UM228 REPORT ETA [position]	Y				
M-5.228.1			DM104 ETA [position] [time]			
M-5.229	UM229 REPORT ALTERNATE AERODROME	Y				
M-5.229.1			DM105 ALTERNATIVE AERODROME [airport]			
M-5.230	UM230 IMMEDIATELY	N	—	—	—	
M-5.231	UM231 STATE PREFERRED LEVEL	Y				
M-5.231.1			DM106 PREFERRED LEVEL [level]			
M-5.232	UM232 STATE TOP OF DESCENT	Y				
M-5.232.1			DM109 TOP OF DESCENT [time]			
M-5.232.2			DM110 TOP OF DESCENT [position]			
M-5.232.3			DM111 TOP OF DESCENT [time] [position]			
M-5.233	UM233 USE OF LOGICAL ACKNOWLEDGMENT PROHIBITED	N	—	—	—	
M-5.234	UM234 FLIGHT PLAN NOT HELD	N	—	—	—	
M-5.235	UM235 ROGER 7500	N	—	—	—	
M-5.236	UM236 LEAVE CONTROLLED AIRSPACE	W/U	—	—	—	

Notes:

a The uplink message is responded to with a W/U, the response to the request is sent at a later time when the condition is true. Does not have a message reference number

* The messages associated with the response attributes are:

W/U DM0 WILCO
 DM1 UNABLE
 DM2 STANDBY
 DM100 LOGICAL ACKNOWLEDGMENT (if required)
 DM62 ERROR (if necessary)

A/N DM4 AFFIRM
 DM5 NEGATIVE
 DM2 STANDBY

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Uplink Message	Response	Downlink Message	Profile	Imp	
		Attribute		Status	Support	
R	DM100 LOGICAL ACKNOWLEDGMENT (if required)					
	DM62 ERROR (if necessary)					
	DM1 UNABLE					
	DM2 STANDBY					
	DM3 ROGER					
Y	DM100 LOGICAL ACKNOWLEDGMENT (if required)					
	DM62 ERROR (if necessary)					
N	any downlink message					
N	none, except DM100 if required					

Table M-6: Downlink Message Elements

Source: Chapter 4 - ASN.1		Receive - Ground User					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-6	ATCDownlinkMsgElementId						ATCDownlinkMsgElementId ::= CHOICE	
M-6.0	DM0 WILCO	O					[0] NULL	
M-6.1	DM1 UNABLE	O					[1] NULL	
M-6.2	DM2 STANDBY	O					[2] NULL	
M-6.3	DM3 ROGER	O					[3] NULL	
M-6.4	DM4 AFFIRM	O					[4] NULL	
M-6.5	DM5 NEGATIVE	O					[5] NULL	
M-6.6	DM6 REQUEST [level]	O					[6] Level	See P-14
M-6.7	DM7 REQUEST BLOCK [level] TO [level]	O					[7] LevelLevel	See M-8
M-6.8	DM8 REQUEST CRUISE CLIMB TO [level]	O					[8] Level	See P-14
M-6.9	DM9 REQUEST CLIMB TO [level]	O					[9] Level	See P-14
M-6.10	DM10 REQUEST DESCENT TO [level]	O					[10] Level	See P-14
M-6.11	DM11 AT [position] REQUEST CLIMB TO [level]	O					[11] PositionLevel	See M-8
M-6.12	DM12 AT [position] REQUEST DESCENT TO [level]	O					[12] PositionLevel	See M-8
M-6.13	DM13 AT [time] REQUEST CLIMB TO [level]	O					[13] TimeLevel	See M-8
M-6.14	DM14 AT [time] REQUEST DESCENT TO [level]	O					[14] TimeLevel	See M-8
M-6.15	DM15 REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	O					[15] DistanceSpecifiedDirection	See P-8
M-6.16	DM16 AT [position] REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	O					[16] PositionDistanceSpecifiedDirection	See M-8
M-6.17	DM17 AT [time] REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	O					[17] TimeDistanceSpecifiedDirection	See M-8
M-6.18	DM18 REQUEST [speed]	O					[18] Speed	See P-22
M-6.19	DM19 REQUEST [speed] TO [speed]	O					[19] SpeedSpeed	See M-8
M-6.20	DM20 REQUEST VOICE CONTACT	O					[20] NULL	
M-6.21	DM21 REQUEST VOICE CONTACT [frequency]	O					[21] Frequency	See P-10
M-6.22	DM22 REQUEST DIRECT TO [position]	O					[22] Position	See P-15
M-6.23	DM23 REQUEST [procedureName]	O					[23] ProcedureName	See P-17
M-6.24	DM24 REQUEST [routeClearance]	O					[24] RouteClearanceIndex	See P-19
M-6.25	DM25 REQUEST [ClearanceType] CLEARANCE	O					[25] ClearanceType	See P-3
M-6.26	DM26 REQUEST WEATHER DEVIATION TO [position] VIA [routeClearance]	O					[26] PositionRouteClearanceIndex	See M-8
M-6.27	DM27 REQUEST WEATHER DEVIATION UP TO [specifiedDistance] [direction]	O					[27] DistanceSpecifiedDirection	See P-8
M-6.28	DM28 LEAVING [level]	O					[28] Level	See P-14
M-6.29	DM29 CLIMBING TO [level]	O					[29] Level	See P-14
M-6.30	DM30 DESCENDING TO [level]	O					[30] Level	See P-14
M-6.31	DM31 PASSING [position]	O					[31] Position	See P-15
M-6.32	DM32 PRESENT LEVEL [level]	O					[32] Level	See P-14
M-6.33	DM33 PRESENT POSITION [position]	O					[33] Position	See P-15
M-6.34	DM34 PRESENT SPEED [speed]	O					[34] Speed	See P-22
M-6.35	DM35 PRESENT HEADING [degrees]	O					[35] Degrees	See P-4
M-6.36	DM36 PRESENT GROUND TRACK [degrees]	O					[36] Degrees	See P-4
M-6.37	DM37 MAINTAINING [level]	O					[37] Level	See P-14
M-6.38	DM38 ASSIGNED LEVEL [level]	O					[38] Level	See P-14
M-6.39	DM39 ASSIGNED SPEED [speed]	O					[39] Speed	See P-22
M-6.40	DM40 ASSIGNED ROUTE [routeClearance]	O					[40] RouteClearanceIndex	See P-19
M-6.41	DM41 BACK ON ROUTE	O					[41] NULL	
M-6.42	DM42 NEXT WAYPOINT [position]	O					[42] Position	See P-15
M-6.43	DM43 NEXT WAYPOINT ETA [time]	O					[43] Time	See P-24
M-6.44	DM44 ENSUING WAYPOINT [position]	O					[44] Position	See P-15

Source: Chapter 4 - ASN.1		Receive - Ground User					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINK Profile	Profile Status	Cons	Implementation Status	Cons		
M-6.45	DM45 REPORTED WAYPOINT [position]	O					[45] Position	See P-15
M-6.46	DM46 REPORTED WAYPOINT [time]	O					[46] Time	See P-24
M-6.47	DM47 SQUAWKING [code]	O					[47] Code	See M-8
M-6.48	DM48 POSITION REPORT [positionreport]	O					[48] PositionReport	See P-16
M-6.49	DM49 WHEN CAN WE EXPECT [speed]	O					[49] Speed	See P-22
M-6.50	DM50 WHEN CAN WE EXPECT [speed] TO [speed]	O					[50] SpeedSpeed	See M-8
M-6.51	DM51 WHEN CAN WE EXPECT BACK ON ROUTE	O					[51] NULL	
M-6.52	DM52 WHEN CAN WE EXPECT LOWER LEVEL	O					[52] NULL	
M-6.53	DM53 WHEN CAN WE EXPECT HIGHER LEVEL	O					[53] NULL	
M-6.54	DM54 WHEN CAN WE EXPECT CRUISE CLIMB TO [level]	O					[54] Level	See P-14
M-6.55	DM55 PAN PAN PAN	O					[55] NULL	
M-6.56	DM56 MAYDAY MAYDAY MAYDAY	O					[56] NULL	
M-6.57	DM57 [remainingFuel] OF FUEL REMAINING AND [personsonboard] PERSONS ON BOARD	O					[57] RemainingFuelPersonsOnBoard	See M-8
M-6.58	DM58 CANCEL EMERGENCY	O					[58] NULL	
M-6.59	DM59 DIVERTING TO [position] VIA [routeClearance]	O					[59] PositionRouteClearanceIndex	See M-8
M-6.60	DM60 OFFSETTING [specifiedDistance] [direction] OF ROUTE	O					[60] DistanceSpecifiedDirection	See P-8
M-6.61	DM61 DESCENDING TO [level]	O					[61] Level	See P-14
M-6.62	DM62 ERROR [errorInformation]	M					[62] ErrorInformation	See P-9
M-6.63	DM63 NOT CURRENT DATA AUTHORITY	M					[63] NULL	
M-6.64	DM64 [facilityDesignation]	O					[64] FacilityDesignation	See M-8
M-6.65	DM65 DUE TO WEATHER	O					[65] NULL	
M-6.66	DM66 DUE TO AIRCRAFT PERFORMANCE	O					[66] NULL	
M-6.67	DM67 [freetext]	O					[67] FreeText	See M-8
M-6.68	DM68 [freetext]	O					[68] FreeText	See M-8
M-6.69	DM69 REQUEST VMC DESCENT	O					[69] NULL	
M-6.70	DM70 REQUEST HEADING [degrees]	O					[70] Degrees	See P-4
M-6.71	DM71 REQUEST GROUND TRACK [degrees]	O					[71] Degrees	See P-4
M-6.72	DM72 REACHING [level]	O					[72] Level	See P-14
M-6.73	DM73 [versionnumber]	O					[73] VersionNumber	See M-8
M-6.74	DM74 REQUEST TO MAINTAIN OWN SEPARATION AND VMC	O					[74] NULL	
M-6.75	DM75 AT PILOTS DISCRETION	O					[75] NULL	
M-6.76	DM76 REACHING BLOCK [level] TO [level]	O					[76] LevelLevel	See M-8
M-6.77	DM77 ASSIGNED BLOCK [level] TO [level]	O					[77] LevelLevel	See M-8
M-6.78	DM78 AT [time] [distance] [tofrom] [position]	O					[78] TimeDistanceToFromPosition	See M-8
M-6.79	DM79 ATIS [atiscode]	O					[79] ATISCode	See M-8
M-6.80	DM80 DEVIATING UP TO [specifiedDistance] [direction] OF ROUTE	O					[80] DistanceSpecifiedDirection	See P-8
M-6.81	DM81 WE CAN ACCEPT [level] AT [time]	O					[81] LevelTime	See M-8
M-6.82	DM82 WE CANNOT ACCEPT [level]	O					[82] Level	See P-14
M-6.83	DM83 WE CAN ACCEPT [speed] AT [time]	O					[83] SpeedTime	See M-8
M-6.84	DM84 WE CANNOT ACCEPT [speed]	O					[84] Speed	See P-22
M-6.85	DM85 WE CAN ACCEPT [specifiedDistance] [direction] AT [time]	O					[85] DistanceSpecifiedDirectionTime	See M-8
M-6.86	DM86 WE CANNOT ACCEPT [specifiedDistance] [direction]	O					[86] DistanceSpecifiedDirection	See P-8
M-6.87	DM87 WHEN CAN WE EXPECT CLIMB TO [level]	O					[87] Level	See P-14
M-6.88	DM88 WHEN CAN WE EXPECT DESCENT TO [level]	O					[88] Level	See P-14
M-6.89	DM89 MONITORING [unitname] [frequency]	O					[89] UnitNameFrequency	See M-8
M-6.90	DM90 [freetext]	O					[90] FreeText	See M-8
M-6.91	DM91 [freetext]	O					[91] FreeText	See M-8
M-6.92	DM92 [freetext]	O					[92] FreeText	See M-8
M-6.93	DM93 [freetext]	O					[93] FreeText	See M-8
M-6.94	DM94 [freetext]	O					[94] FreeText	See M-8

Source: Chapter 4 - ASN.1		Receive - Ground User					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-6.95	DM95 [freetext]	O					[95] FreeText	See M-8
M-6.96	DM96 [freetext]	O					[96] FreeText	See M-8
M-6.97	DM97 [freetext]	O					[97] FreeText	See M-8
M-6.98	DM98 [freetext]	O					[98] FreeText	See M-8
M-6.99	DM99 CURRENT DATA AUTHORITY	O					[99] NULL	
M-6.100	DM100 LOGICAL ACKNOWLEDGMENT	O					[100] NULL	
M-6.101	DM101 REQUEST END OF SERVICE	O					[101] NULL	
M-6.102	DM102 LANDING REPORT	O					[102] NULL	
M-6.103	DM103 CANCELLING IFR	O					[103] NULL	
M-6.104	DM104 ETA [position] [time]	O					[104] PositionTime	See M-8
M-6.105	DM105 ALTERNATIVE AERODROME [airport]	O					[105] Airport	See P-1
M-6.106	DM106 PREFERRED LEVEL [level]	O					[106] Level	
M-6.107	DM107 NOT AUTHORIZED NEXT DATA AUTHORITY	O					[107] NULL	
M-6.108	DM108 DE-ICING COMPLETE	O					[108] NULL	
M-6.109	DM109 TOP OF DESCENT [time]	O					[109] Time	See P-24
M-6.110	DM110 TOP OF DESCENT [position]	O					[110] Position	See P-15
M-6.111	DM111 TOP OF DESCENT [time] [position]	O					[111] TimePosition	See M-8
M-6.112	DM112 SQUAWKING 7500	O					[112] NULL	
M-6.113	DM113 [speedType] [speedType] [speedType] SPEED [speed]	O					[113] SpeedTypeSpeedTypeSpeedTypeSpeed	See M-8
M-6.114	Use of Extensibility	M					Use of Extensibility	

Table M-7: Downlink Messages Permitted Operational Responses

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.0	DM0 WILCO	N	—	—	—	
M-7.1	DM1 UNABLE	N	—	—	—	
M-7.2	DM2 STANDBY	N	—	—	—	
M-7.3	DM3 ROGER	N	—	—	—	
M-7.4	DM4 AFFIRM	N	—	—	—	
M-7.5	DM5 NEGATIVE	N	—	—	—	
M-7.6	DM6 REQUEST [level]	Y				
M-7.6.1			UM0 UNABLE			a
M-7.6.2			UM1 STANDBY			
M-7.6.3			UM2 REQUEST DEFERRED			
M-7.6.4			UM162 SERVICE UNAVAILABLE			
M-7.6.5			UM211 REQUEST FORWARDED			
M-7.6.6			UM218 REQUEST ALREADY RECEIVED			
M-7.6.7			UM234 FLIGHT PLAN NOT HELD			
M-7.6.8			UM19 MAINTAIN [level]			
M-7.6.9			UM20 CLIMB TO [level]			
M-7.6.10			UM21 AT [time] CLIMB TO [level]			
M-7.6.11			UM22 AT [position] CLIMB TO [level]			
M-7.6.12			UM23 DESCEND TO [level]			
M-7.6.13			UM24 AT [time] DESCEND TO [level]			
M-7.6.14			UM25 AT [position] DESCEND TO [level]			
M-7.6.15			UM26 CLIMB TO REACH [level] BY [time]			
M-7.6.16			UM27 CLIMB TO REACH [level] BY [position]			
M-7.6.17			UM28 DESCEND TO REACH [level] BY [time]			
M-7.6.18			UM29 DESCEND TO REACH [level] BY [position]			
M-7.6.19			UM46 CROSS [position] AT [level]			
M-7.6.20			UM47 CROSS [position] AT OR ABOVE [level]			
M-7.6.21			UM48 CROSS [position] AT OR BELOW [level]			
M-7.6.22			UM185 AFTER PASSING [position] CLIMB TO [level]			
M-7.6.23			UM186 AFTER PASSING [position] DESCEND TO [level]			
M-7.6.24			UM192 REACH [level] BY [time]			
M-7.6.25			UM209 REACH [level] BY [position]			
M-7.6.26			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.7	DM7 REQUEST BLOCK [level] TO [level]	Y				
M-7.7.1			UM0 UNABLE			a
M-7.7.2			UM1 STANDBY			
M-7.7.3			UM2 REQUEST DEFERRED			
M-7.7.4			UM162 SERVICE UNAVAILABLE			
M-7.7.5			UM211 REQUEST FORWARDED			
M-7.7.6			UM218 REQUEST ALREADY RECEIVED			
M-7.7.7			UM234 FLIGHT PLAN NOT HELD			
M-7.7.8			UM30 MAINTAIN BLOCK [level] TO [level]			
M-7.7.9			UM31 CLIMB TO AND MAINTAIN BLOCK [level] TO [level]			
M-7.7.10			UM32 DESCEND TO AND MAINTAIN BLOCK [level] TO [level]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	Imp	
		Attribute		Status	Support	
M-7.8	DM8 REQUEST CRUISE CLIMB TO [level]	Y				
M-7.8.1			UM0 UNABLE			a
M-7.8.2			UM1 STANDBY			
M-7.8.3			UM2 REQUEST DEFERRED			
M-7.8.4			UM162 SERVICE UNAVAILABLE			
M-7.8.5			UM211 REQUEST FORWARDED			
M-7.8.6			UM218 REQUEST ALREADY RECEIVED			
M-7.8.7			UM234 FLIGHT PLAN NOT HELD			
M-7.8.8			UM34 CRUISE CLIMB TO [level]			
M-7.9	DM9 REQUEST CLIMB TO [level]	Y				
M-7.9.1			UM0 UNABLE			a
M-7.9.2			UM1 STANDBY			
M-7.9.3			UM2 REQUEST DEFERRED			
M-7.9.4			UM162 SERVICE UNAVAILABLE			
M-7.9.5			UM211 REQUEST FORWARDED			
M-7.9.6			UM218 REQUEST ALREADY RECEIVED			
M-7.9.7			UM234 FLIGHT PLAN NOT HELD			
M-7.9.8			UM19 MAINTAIN [level]			
M-7.9.9			UM20 CLIMB TO [level]			
M-7.9.10			UM21 AT [time] CLIMB TO [level]			
M-7.9.11			UM22 AT [position] CLIMB TO [level]			
M-7.9.12			UM23 DESCEND TO [level]			
M-7.9.13			UM26 CLIMB TO REACH [level] BY [time]			
M-7.9.14			UM27 CLIMB TO REACH [level] BY [position]			
M-7.9.15			UM28 DESCEND TO REACH [level] BY [time]			
M-7.9.16			UM29 DESCEND TO REACH [level] BY [position]			
M-7.9.17			UM36 EXPEDITE CLIMB TO [level]			
M-7.9.18			UM38 IMMEDIATELY CLIMB TO [level]			
M-7.9.19			UM46 CROSS [position] AT [level]			
M-7.9.20			UM47 CROSS [position] AT OR ABOVE [level]			
M-7.9.21			UM48 CROSS [position] AT OR BELOW [level]			
M-7.9.22			UM185 AFTER PASSING [position] CLIMB TO [level]			
M-7.9.23			UM192 REACH [level] BY [time]			
M-7.9.24			UM209 REACH [level] BY [position]			
M-7.9.25			UM159 ERROR [errorInformation] + UM 183 [freetext]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.10	DM10 REQUEST DECENT TO [level]	Y				
M-7.10.1			UM0 UNABLE			
M-7.10.2			UM1 STANDBY			
M-7.10.3			UM2 REQUEST DEFERRED			
M-7.10.4			UM162 SERVICE UNAVAILABLE			
M-7.10.5			UM211 REQUEST FORWARDED			
M-7.10.6			UM218 REQUEST ALREADY RECEIVED			
M-7.10.7			UM234 FLIGHT PLAN NOT HELD			
M-7.10.8			UM19 MAINTAIN [level]			
M-7.10.9			UM20 CLIMB TO [level]			
M-7.10.10			UM23 DESCEND TO [level]			
M-7.10.11			UM24 AT [time] DESCEND TO [level]			
M-7.10.12			UM25 AT [position] DESCEND TO [level]			
M-7.10.13			UM26 CLIMB TO REACH [level] BY [time]			
M-7.10.14			UM27 CLIMB TO REACH [level] BY [position]			
M-7.10.15			UM28 DESCEND TO REACH [level] BY [time]			
M-7.10.16			UM29 DESCEND TO REACH [level] BY [position]			
M-7.10.17			UM46 CROSS [position] AT [level]			
M-7.10.18			UM47 CROSS [position] AT OR ABOVE [level]			
M-7.10.19			UM48 CROSS [position] AT OR BELOW [level]			
M-7.10.20			UM186 AFTER PASSING [position] DESCEND TO [level]			
M-7.10.21			UM192 REACH [level] BY [time]			
M-7.10.22			UM209 REACH [level] BY [position]			
M-7.10.23			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.11	DM11 AT [position] REQUEST CLIMB TO [level]	Y				
M-7.11.1			UM0 UNABLE			
M-7.11.2			UM1 STANDBY			
M-7.11.3			UM2 REQUEST DEFERRED			
M-7.11.4			UM162 SERVICE UNAVAILABLE			
M-7.11.5			UM211 REQUEST FORWARDED			
M-7.11.6			UM218 REQUEST ALREADY RECEIVED			
M-7.11.7			UM234 FLIGHT PLAN NOT HELD			
M-7.11.8			UM19 MAINTAIN [level]			
M-7.11.9			UM20 CLIMB TO [level]			
M-7.11.10			UM22 AT [position] CLIMB TO [level]			
M-7.11.11			UM23 DESCEND TO [level]			
M-7.11.12			UM26 CLIMB TO REACH [level] BY [time]			
M-7.11.13			UM27 CLIMB TO REACH [level] BY [position]			
M-7.11.14			UM28 DESCEND TO REACH [level] BY [time]			
M-7.11.15			UM29 DESCEND TO REACH [level] BY [position]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	Imp	
		Attribute		Status	Support	
M-7.12	DM12 AT [position] REQUEST DESCENT TO [level]	Y				
M-7.12.1			UM0 UNABLE			
M-7.12.2			UM1 STANDBY			
M-7.12.3			UM2 REQUEST DEFERRED			
M-7.12.4			UM162 SERVICE UNAVAILABLE			
M-7.12.5			UM211 REQUEST FORWARDED			
M-7.12.6			UM218 REQUEST ALREADY RECEIVED			
M-7.12.7			UM234 FLIGHT PLAN NOT HELD			
M-7.12.8			UM19 MAINTAIN [level]			
M-7.12.9			UM20 CLIMB TO [level]			
M-7.12.10			UM23 DESCEND TO [level]			
M-7.12.11			UM25 AT [position] DESCEND TO [level]			
M-7.12.12			UM26 CLIMB TO REACH [level] BY [time]			
M-7.12.13			UM27 CLIMB TO REACH [level] BY [position]			
M-7.12.14			UM28 DESCEND TO REACH [level] BY [time]			
M-7.12.15			UM29 DESCEND TO REACH [level] BY [position]			
M-7.13	DM13 AT [time] REQUEST CLIMB TO [level]	Y				
M-7.13.1			UM0 UNABLE			
M-7.13.2			UM1 STANDBY			
M-7.13.3			UM2 REQUEST DEFERRED			
M-7.13.4			UM162 SERVICE UNAVAILABLE			
M-7.13.5			UM211 REQUEST FORWARDED			
M-7.13.6			UM218 REQUEST ALREADY RECEIVED			
M-7.13.7			UM234 FLIGHT PLAN NOT HELD			
M-7.13.8			UM21 AT [time] CLIMB TO [level]			
M-7.14	DM14 AT [time] REQUEST DESCENT TO [level]	Y				
M-7.14.1			UM0 UNABLE			
M-7.14.2			UM1 STANDBY			
M-7.14.3			UM2 REQUEST DEFERRED			
M-7.14.4			UM162 SERVICE UNAVAILABLE			
M-7.14.5			UM211 REQUEST FORWARDED			
M-7.14.6			UM218 REQUEST ALREADY RECEIVED			
M-7.14.7			UM234 FLIGHT PLAN NOT HELD			
M-7.14.8			UM24 AT [time] DESCEND TO [level]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.15	DM15 REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	Y				
M-7.15.1			UM0 UNABLE			
M-7.15.2			UM1 STANDBY			
M-7.15.3			UM2 REQUEST DEFERRED			
M-7.15.4			UM162 SERVICE UNAVAILABLE			
M-7.15.5			UM211 REQUEST FORWARDED			
M-7.15.6			UM218 REQUEST ALREADY RECEIVED			
M-7.15.7			UM234 FLIGHT PLAN NOT HELD			
M-7.15.8			UM64 OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.15.9			UM65 AT [position] OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.15.10			UM66 AT [time] OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.15.11			UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE			
M-7.16	DM16 AT [position] REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	Y				
M-7.16.1			UM0 UNABLE			
M-7.16.2			UM1 STANDBY			
M-7.16.3			UM2 REQUEST DEFERRED			
M-7.16.4			UM162 SERVICE UNAVAILABLE			
M-7.16.5			UM211 REQUEST FORWARDED			
M-7.16.6			UM218 REQUEST ALREADY RECEIVED			
M-7.16.7			UM234 FLIGHT PLAN NOT HELD			
M-7.16.8			UM65 AT [position] OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.16.9			UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE			
M-7.17	DM17 AT [time] REQUEST OFFSET [specifiedDistance] [direction] OF ROUTE	Y				
M-7.17.1			UM0 UNABLE			
M-7.17.2			UM1 STANDBY			
M-7.17.3			UM2 REQUEST DEFERRED			
M-7.17.4			UM162 SERVICE UNAVAILABLE			
M-7.17.5			UM211 REQUEST FORWARDED			
M-7.17.6			UM218 REQUEST ALREADY RECEIVED			
M-7.17.7			UM234 FLIGHT PLAN NOT HELD			
M-7.17.8			UM66 AT [time] OFFSET [specifiedDistance] [direction] OF ROUTE			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.18	DM18 REQUEST [speed]	Y				
M-7.18.1			UM0 UNABLE			
M-7.18.2			UM1 STANDBY			
M-7.18.3			UM2 REQUEST DEFERRED			
M-7.18.4			UM162 SERVICE UNAVAILABLE			
M-7.18.5			UM211 REQUEST FORWARDED			
M-7.18.6			UM218 REQUEST ALREADY RECEIVED			
M-7.18.7			UM234 FLIGHT PLAN NOT HELD			
M-7.18.8			UM55 CROSS [position] AT [speed]			
M-7.18.9			UM61 CROSS [position] AT AND MAINTAIN [level] AT [speed]			
M-7.18.10			UM106 MAINTAIN [speed]			
M-7.18.11			UM107 MAINTAIN PRESENT SPEED			
M-7.18.12			UM108 MAINTAIN [speed] OR GREATER			
M-7.18.13			UM109 MAINTAIN [speed] OR LESS			
M-7.18.14			UM111 INCREASE SPEED TO [speed]			
M-7.18.15			UM112 INCREASE SPEED TO [speed] OR GREATER			
M-7.18.16			UM113 REDUCE SPEED TO [speed]			
M-7.18.17			UM114 REDUCE SPEED TO [speed] OR LESS			
M-7.18.18			UM115 DO NOT EXCEED [speed]			
M-7.18.19			UM116 RESUME NORMAL SPEED			
M-7.18.20			UM189 ADJUST SPEED TO [speed]			
M-7.18.21			UM222 NO SPEED RESTRICTION			
M-7.18.22			UM159 ERROR [errorInformation] + UM 183 [freertext]			
M-7.19	DM19 REQUEST [speed] TO [speed]	Y				
M-7.19.1			UM0 UNABLE			
M-7.19.2			UM1 STANDBY			
M-7.19.3			UM2 REQUEST DEFERRED			
M-7.19.4			UM162 SERVICE UNAVAILABLE			
M-7.19.5			UM211 REQUEST FORWARDED			
M-7.19.6			UM218 REQUEST ALREADY RECEIVED			
M-7.19.7			UM234 FLIGHT PLAN NOT HELD			
M-7.19.8			UM110 MAINTAIN [speed] TO [speed]			
M-7.20	DM20 REQUEST VOICE CONTACT	Y				
M-7.20.1			UM0 UNABLE			
M-7.20.2			UM1 STANDBY			
M-7.20.3			UM2 REQUEST DEFERRED			
M-7.20.4			UM162 SERVICE UNAVAILABLE			
M-7.20.5			UM211 REQUEST FORWARDED			
M-7.20.6			UM218 REQUEST ALREADY RECEIVED			
M-7.20.7			UM234 FLIGHT PLAN NOT HELD			
M-7.20.8			UM117 CONTACT [unitname] [frequency]			
M-7.20.9			UM118 AT [position] CONTACT [unitname] [frequency]			
M-7.20.10			UM119 AT [time] CONTACT [unitname] [frequency]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.21	DM21 REQUEST VOICE CONTACT [frequency]	Y				
M-7.21.1			UM0 UNABLE			
M-7.21.2			UM1 STANDBY			
M-7.21.3			UM2 REQUEST DEFERRED			
M-7.21.4			UM162 SERVICE UNAVAILABLE			
M-7.21.5			UM211 REQUEST FORWARDED			
M-7.21.6			UM218 REQUEST ALREADY RECEIVED			
M-7.21.7			UM234 FLIGHT PLAN NOT HELD			
M-7.21.8			UM117 CONTACT [unitname] [frequency]			
M-7.21.9			UM118 AT [position] CONTACT [unitname] [frequency]			
M-7.21.10			UM119 AT [time] CONTACT [unitname] [frequency]			
M-7.22	DM22 REQUEST DIRECT TO [position]	Y				
M-7.22.1			UM0 UNABLE			
M-7.22.2			UM1 STANDBY			
M-7.22.3			UM2 REQUEST DEFERRED			
M-7.22.4			UM162 SERVICE UNAVAILABLE			
M-7.22.5			UM211 REQUEST FORWARDED			
M-7.22.6			UM218 REQUEST ALREADY RECEIVED			
M-7.22.7			UM234 FLIGHT PLAN NOT HELD			
M-7.22.8			UM74 PROCEED DIRECT TO [position]			
M-7.22.9			UM75 WHEN ABLE PROCEED DIRECT TO [position]			
M-7.22.10			UM76 AT [time] PROCEED DIRECT TO [position]			
M-7.22.11			UM77 AT [position] PROCEED DIRECT TO [position]			
M-7.22.12			UM78 AT [level] PROCEED DIRECT TO [position]			
M-7.22.13			UM96 CONTINUE PRESENT HEADING			
M-7.22.14			UM190 FLY HEADING [degrees]			
M-7.22.15			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.23	DM23 REQUEST [procedureName]	Y				
M-7.23.1			UM0 UNABLE			
M-7.23.2			UM1 STANDBY			
M-7.23.3			UM2 REQUEST DEFERRED			
M-7.23.4			UM162 SERVICE UNAVAILABLE			
M-7.23.5			UM211 REQUEST FORWARDED			
M-7.23.6			UM218 REQUEST ALREADY RECEIVED			
M-7.23.7			UM234 FLIGHT PLAN NOT HELD			
M-7.23.8			UM81 CLEARED [procedure name]			
M-7.23.9			UM84 AT [position] CLEARED [procedureName]			
M-7.23.10			UM99 EXPECT [procedureName]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.24	DM24 REQUEST [routeClearance]	Y				
M-7.24.1			UM0 UNABLE			
M-7.24.2			UM1 STANDBY			
M-7.24.3			UM2 REQUEST DEFERRED			
M-7.24.4			UM162 SERVICE UNAVAILABLE			
M-7.24.5			UM211 REQUEST FORWARDED			
M-7.24.6			UM218 REQUEST ALREADY RECEIVED			
M-7.24.7			UM234 FLIGHT PLAN NOT HELD			
M-7.24.8			UM79 CLEARED TO [position] VIA [routeClearance]			
M-7.24.9			UM80 CLEARED [route clearance]			
M-7.24.10			UM83 AT [position] CLEARED [routeClearance]			
M-7.24.11			UM85 EXPECT [routeClearance]			
M-7.24.12			UM86 AT [position] EXPECT [routeClearance]			
M-7.25	DM25 REQUEST [ClearanceType] CLEARANCE	Y				
M-7.25.1			UM0 UNABLE			
M-7.25.2			UM1 STANDBY			
M-7.25.3			UM2 REQUEST DEFERRED			
M-7.25.4			UM162 SERVICE UNAVAILABLE			
M-7.25.5			UM211 REQUEST FORWARDED			
M-7.25.6			UM218 REQUEST ALREADY RECEIVED			
M-7.25.7			UM234 FLIGHT PLAN NOT HELD			
M-7.25.8			UM73 [DepartureClearance]			
M-7.25.9			UM79 CLEARED TO [position] VIA [routeClearance]			
M-7.25.10			UM80 CLEARED [route clearance]			
M-7.25.11			UM81 CLEARED [procedure name]			
M-7.25.12			UM83 AT [position] CLEARED [routeClearance]			
M-7.25.13			UM84 AT [position] CLEARED [procedureName]			
M-7.25.14			UM85 EXPECT [routeClearance]			
M-7.25.15			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.26	DM26 REQUEST WEATHER DEVIATION TO [position] VIA [routeClearance]	Y				
M-7.26.1			UM0 UNABLE			
M-7.26.2			UM1 STANDBY			
M-7.26.3			UM2 REQUEST DEFERRED			
M-7.26.4			UM162 SERVICE UNAVAILABLE			
M-7.26.5			UM211 REQUEST FORWARDED			
M-7.26.6			UM218 REQUEST ALREADY RECEIVED			
M-7.26.7			UM234 FLIGHT PLAN NOT HELD			
M-7.26.8			UM79 CLEARED TO [position] VIA [routeClearance]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.27	DM27 REQUEST WEATHER DEVIATION UP TO [specifiedDistance] [direction] OF ROUTE	Y				
M-7.27.1			UM0 UNABLE			
M-7.27.2			UM1 STANDBY			
M-7.27.3			UM2 REQUEST DEFERRED			
M-7.27.4			UM162 SERVICE UNAVAILABLE			
M-7.27.5			UM211 REQUEST FORWARDED			
M-7.27.6			UM218 REQUEST ALREADY RECEIVED			
M-7.27.7			UM234 FLIGHT PLAN NOT HELD			
M-7.27.8			UM64 OFFSET [specifiedDistance] [direction] OF ROUTE			
M-7.27.9			UM74 PROCEED DIRECT TO [position]			
M-7.27.10			UM75 WHEN ABLE PROCEED DIRECT TO [position]			
M-7.27.11			UM77 AT [position] PROCEED DIRECT TO [position]			
M-7.27.12			UM78 AT [level] PROCEED DIRECT TO [position]			
M-7.27.13			UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE			
M-7.27.14			UM96 CONTINUE PRESENT HEADING			
M-7.27.15			UM190 FLY HEADING [degrees]			
M-7.27.16			UM159 ERROR [errorInformation] + UM 183 [freetext]			
M-7.28	DM28 LEAVING [level]	N	—	—	—	
M-7.29	DM29 CLIMBING TO [level]	N	—	—	—	
M-7.30	DM30 DESCENDING TO [level]	N	—	—	—	
M-7.31	DM31 PASSING [position]	N	—	—	—	
M-7.32	DM32 PRESENT LEVEL [level]	N	—	—	—	
M-7.33	DM33 PRESENT POSITION [position]	N	—	—	—	
M-7.34	DM34 PRESENT SPEED [speed]	N	—	—	—	
M-7.35	DM35 PRESENT HEADING [degrees]	N	—	—	—	
M-7.36	DM36 PRESENT GROUND TRACK [degrees]	N	—	—	—	
M-7.37	DM37 MAINTAINING [level]	N	—	—	—	
M-7.38	DM38 ASSIGNED LEVEL [level]	N	—	—	—	
M-7.39	DM39 ASSIGNED SPEED [speed]	N	—	—	—	
M-7.40	DM40 ASSIGNED ROUTE [routeClearance]	N	—	—	—	
M-7.41	DM41 BACK ON ROUTE	N	—	—	—	
M-7.42	DM42 NEXT WAYPOINT [position]	N	—	—	—	
M-7.43	DM43 NEXT WAYPOINT ETA [time]	N	—	—	—	
M-7.44	DM44 ENSUING WAYPOINT [position]	N	—	—	—	
M-7.45	DM45 REPORTED WAYPOINT [position]	N	—	—	—	
M-7.46	DM46 REPORTED WAYPOINT [time]	N	—	—	—	
M-7.47	DM47 SQUAWKING [code]	N	—	—	—	
M-7.48	DM48 POSITION REPORT [positionreport]	N	—	—	—	
M-7.49	DM49 WHEN CAN WE EXPECT [speed]	Y				
M-7.49.1			UM0 UNABLE			
M-7.49.2			UM1 STANDBY			
M-7.49.3			UM2 REQUEST DEFERRED			
M-7.49.4			UM162 SERVICE UNAVAILABLE			
M-7.49.5			UM211 REQUEST FORWARDED			
M-7.49.6			UM218 REQUEST ALREADY RECEIVED			
M-7.49.7			UM234 FLIGHT PLAN NOT HELD			
M-7.49.8			UM100 AT [time] EXPECT [speed]			
M-7.49.9			UM101 AT [position] EXPECT [speed]			
M-7.49.10			UM102 AT [level] EXPECT [speed]			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.50	DM50 WHEN CAN WE EXPECT [speed] TO [speed]	Y				
M-7.50.1			UM0 UNABLE			
M-7.50.2			UM1 STANDBY			
M-7.50.3			UM2 REQUEST DEFERRED			
M-7.50.4			UM162 SERVICE UNAVAILABLE			
M-7.50.5			UM211 REQUEST FORWARDED			
M-7.50.6			UM218 REQUEST ALREADY RECEIVED			
M-7.50.7			UM234 FLIGHT PLAN NOT HELD			
M-7.50.8			UM100 AT [time] EXPECT [speed]			
M-7.50.9			UM101 AT [position] EXPECT [speed]			
M-7.50.10			UM102 AT [level] EXPECT [speed]			
M-7.50.11			UM103 AT [time] EXPECT [speed] TO [speed]			
M-7.50.12			UM104 AT [position] EXPECT [speed] TO [speed]			
M-7.50.13			UM105 AT [level] EXPECT [speed] TO [speed]			
M-7.51	DM51 WHEN CAN WE EXPECT BACK ON ROUTE	Y				
M-7.51.1			UM0 UNABLE			
M-7.51.2			UM1 STANDBY			
M-7.51.3			UM2 REQUEST DEFERRED			
M-7.51.4			UM162 SERVICE UNAVAILABLE			
M-7.51.5			UM211 REQUEST FORWARDED			
M-7.51.6			UM218 REQUEST ALREADY RECEIVED			
M-7.51.7			UM234 FLIGHT PLAN NOT HELD			
M-7.51.8			UM67 PROCEED BACK ON ROUTE			
M-7.51.9			UM68 REJOIN ROUTE BY [position]			
M-7.51.10			UM69 REJOIN ROUTE BY [time]			
M-7.51.11			UM70 EXPECT BACK ON ROUTE BY [position]			
M-7.51.12			UM71 EXPECT BACK ON ROUTE BY [time]			
M-7.52	DM52 WHEN CAN WE EXPECT LOWER LEVEL	Y				
M-7.52.1			UM0 UNABLE			
M-7.52.2			UM1 STANDBY			
M-7.52.3			UM2 REQUEST DEFERRED			
M-7.52.4			UM162 SERVICE UNAVAILABLE			
M-7.52.5			UM211 REQUEST FORWARDED			
M-7.52.6			UM218 REQUEST ALREADY RECEIVED			
M-7.52.7			UM234 FLIGHT PLAN NOT HELD			
M-7.52.8			UM9 EXPECT DESCENT AT [time]			
M-7.52.9			UM10 EXPECT DESCENT AT [position]			
M-7.52.10			UM15 AT [time] EXPECT DESCENT TO [level]			
M-7.52.11			UM16 AT [position] EXPECT DESCENT TO [level]			
M-7.53	DM53 WHEN CANWE EXPECT HIGHER LEVEL	Y				

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.53.1			UM0 UNABLE			
M-7.53.2			UM1 STANDBY			
M-7.53.3			UM2 REQUEST DEFERRED			
M-7.53.4			UM162 SERVICE UNAVAILABLE			
M-7.53.5			UM211 REQUEST FORWARDED			
M-7.53.6			UM218 REQUEST ALREADY RECEIVED			
M-7.53.7			UM234 FLIGHT PLAN NOT HELD			
M-7.53.8			UM7 EXPECT CLIMB AT [time]			
M-7.53.9			UM8 EXPECT CLIMB AT [position]			
M-7.53.10			UM13 AT [time] EXPECT CLIMB TO [level]			
M-7.53.11			UM14 AT [position] EXPECT CLIMB TO [level]			
M-7.54	DM54 WHEN CAN WE EXPECT CRUISE CLIMB TO [level]	Y				
M-7.54.1			UM0 UNABLE			
M-7.54.2			UM1 STANDBY			
M-7.54.3			UM2 REQUEST DEFERRED			
M-7.54.4			UM162 SERVICE UNAVAILABLE			
M-7.54.5			UM211 REQUEST FORWARDED			
M-7.54.6			UM218 REQUEST ALREADY RECEIVED			
M-7.54.7			UM234 FLIGHT PLAN NOT HELD			
M-7.54.8			UM11 EXPECT CRUISE CLIMB AT [time]			
M-7.54.9			UM12 EXPECT CRUISE CLIMB AT [position]			
M-7.54.10			UM17 AT [time] EXPECT CRUISE CLIMB TO [level]			
M-7.54.11			UM18 AT [position] EXPECT CRUISE CLIMB TO [level]			
M-7.55	DM55 PAN PAN PAN	Y				
M-7.55.1			UM3 ROGER			
M-7.55.2			UM162 SERVICE UNAVAILABLE			
M-7.56	DM56 MAYDAY MAYDAY MAYDAY	Y				
M-7.56.1			UM0 UNABLE			
M-7.56.2			UM1 STANDBY			
M-7.56.3			UM3 ROGER			
M-7.57	DM57 [remainingFuel] OF FUEL REMAINING AND [personsonboard] PERSONS ON BOARD	Y				
M-7.57.1			UM3 ROGER			
M-7.58	DM58 CANCEL EMERGENCY	Y				
M-7.58.1			UM3 ROGER			
M-7.59	DM59 DIVERTING TO [position] VIA [routeClearance]	Y				
M-7.59.1			UM3 ROGER			
M-7.60	DM60 OFFSETTING [specifiedDistance] [direction] OF ROUTE	Y				
M-7.60.1			UM3 ROGER			
M-7.61	DM61 DESCENDING TO [level]	Y				
M-7.61.1			UM3 ROGER			
M-7.62	DM62 ERROR [errorInformation]	N	—	—	—	
M-7.63	DM63 NOT CURRENT DATA AUTHORITY	N	—	—	—	
M-7.64	DM64 [facilitydesignation]	N	—	—	—	
M-7.65	DM65 DUE TO WEATHER	N	—	—	—	
M-7.66	DM66 DUE TO AIRCRAFT PERFORMANCE	N	—	—	—	
M-7.67	DM67 [freetext]	N	—	—	—	
M-7.68	DM68 [freetext]	Y				
M-7.69	DM69 REQUEST VMC DESCENT	Y				

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response Attribute	Uplink Message	Profile Status	Imp Support	
M-7.69.1			UM0 UNABLE			
M-7.69.2			UM1 STANDBY			
M-7.69.3			UM2 REQUEST DEFERRED			
M-7.69.4			UM162 SERVICE UNAVAILABLE			
M-7.69.5			UM211 REQUEST FORWARDED			
M-7.69.6			UM218 REQUEST ALREADY RECEIVED			
M-7.69.7			UM234 FLIGHT PLAN NOT HELD			
M-7.69.8			UM3 ROGER			
M-7.69.9			UM176 MAINTAIN OWN SEPARATION AND VMC			
M-7.70	DM70 REQUEST HEADING [degrees]	Y				
M-7.70.1			UM0 UNABLE			
M-7.70.2			UM1 STANDBY			
M-7.70.3			UM2 REQUEST DEFERRED			
M-7.70.4			UM162 SERVICE UNAVAILABLE			
M-7.70.5			UM211 REQUEST FORWARDED			
M-7.70.6			UM218 REQUEST ALREADY RECEIVED			
M-7.70.7			UM234 FLIGHT PLAN NOT HELD			
M-7.70.8			UM94 TURN [direction] HEADING [degrees]			
M-7.70.9			UM97 AT [position] FLY HEADING [degrees]			
M-7.70.10			UM190 FLY HEADING [degrees]			
M-7.71	DM71 REQUEST GROUND TRACK [degrees]	Y				
M-7.71.1			UM0 UNABLE			
M-7.71.2			UM1 STANDBY			
M-7.71.3			UM2 REQUEST DEFERRED			
M-7.71.4			UM162 SERVICE UNAVAILABLE			
M-7.71.5			UM211 REQUEST FORWARDED			
M-7.71.6			UM218 REQUEST ALREADY RECEIVED			
M-7.71.7			UM234 FLIGHT PLAN NOT HELD			
M-7.71.8			UM95 TURN [direction] GROUND TRACK [degrees]			
M-7.72	DM72 REACHING [level]	N	—	—	—	
M-7.73	DM73 [versionnumber]	N	—	—	—	
M-7.74	DM74 REQUEST TO MAINTAIN OWN SEPARATION AND VMC	Y				
M-7.74.1			UM0 UNABLE			
M-7.74.2			UM1 STANDBY			
M-7.74.3			UM2 REQUEST DEFERRED			
M-7.74.4			UM162 SERVICE UNAVAILABLE			
M-7.74.5			UM211 REQUEST FORWARDED			
M-7.74.6			UM218 REQUEST ALREADY RECEIVED			
M-7.74.7			UM234 FLIGHT PLAN NOT HELD			
M-7.74.8			UM176 MAINTAIN OWN SEPARATION AND VMC			
M-7.75	DM75 AT PILOTS DISCRETION	N	—	—	—	
M-7.76	DM76 REACHING BLOCK [level] TO [level]	N	—	—	—	
M-7.77	DM77 ASSIGNED BLOCK [level] TO [level]	N	—	—	—	
M-7.78	DM78 AT [time] [distance] [tofrom] [position]	N	—	—	—	
M-7.79	DM79 ATIS [atiscode]	N	—	—	—	
M-7.80	DM80 DEVIATING UP TO [specifiedDistance] [direction] OF ROUTE	Y				
M-7.80.1			UM0 UNABLE			

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	Imp	
		Attribute		Status	Support	
M-7.80.2			UM1 STANDBY			
M-7.80.3			UM3 ROGER			
M-7.80.4			UM82 CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE			
M-7.81	DM81 WE CAN ACCEPT [level] AT [time]	N	—	—	—	
M-7.82	DM82 WE CANNOT ACCEPT [level]	N	—	—	—	
M-7.83	DM83 WE CAN ACCEPT [speed] AT [time]	N	—	—	—	
M-7.84	DM84 WE CANNOT ACCEPT [speed]	N	—	—	—	
M-7.85	DM85 WE CAN ACCEPT [specifiedDistance] [direction] AT [time]	N	—	—	—	
M-7.86	DM86 WE CANNOT ACCEPT [specifiedDistance] [direction]	N	—	—	—	
M-7.87	DM87 WHEN CAN WE EXPECT CLIMB TO [level]	Y				
M-7.87.1			UM0 UNABLE			
M-7.87.2			UM1 STANDBY			
M-7.87.3			UM2 REQUEST DEFERRED			
M-7.87.4			UM162 SERVICE UNAVAILABLE			
M-7.87.5			UM211 REQUEST FORWARDED			
M-7.87.6			UM218 REQUEST ALREADY RECEIVED			
M-7.87.7			UM234 FLIGHT PLAN NOT HELD			
M-7.87.8			UM7 EXPECT CLIMB AT [time]			
M-7.87.9			UM8 EXPECT CLIMB AT [position]			
M-7.87.10			UM13 AT [time] EXPECT CLIMB TO [level]			
M-7.87.11			UM14 AT [position] EXPECT CLIMB TO [level]			
M-7.88	DM88 WHEN CAN WE EXPECT DESCENT TO [level]	Y				
M-7.88.1			UM0 UNABLE			
M-7.88.2			UM1 STANDBY			
M-7.88.3			UM2 REQUEST DEFERRED			
M-7.88.4			UM162 SERVICE UNAVAILABLE			
M-7.88.5			UM211 REQUEST FORWARDED			
M-7.88.6			UM218 REQUEST ALREADY RECEIVED			
M-7.88.7			UM234 FLIGHT PLAN NOT HELD			
M-7.88.8			UM9 EXPECT DESCENT AT [time]			
M-7.88.9			UM10 EXPECT DESCENT AT [position]			
M-7.88.10			UM15 AT [time] EXPECT DESCENT TO [level]			
M-7.88.11			UM16 AT [position] EXPECT DESCENT TO [level]			
M-7.89	DM89 MONITORING [unitname] [frequency]	N	—	—	—	
M-7.90	DM90 [freetext]	N	—	—	—	
M-7.91	DM91 [freetext]	Y				
M-7.92	DM92 [freetext]	N	—	—	—	
M-7.93	DM93 [freetext]	N	—	—	—	
M-7.94	DM94 [freetext]	N	—	—	—	
M-7.95	DM95 [freetext]	N	—	—	—	
M-7.96	DM96 [freetext]	N	—	—	—	
M-7.97	DM97 [freetext]	N	—	—	—	
M-7.98	DM98 [freetext]	N	—	—	—	
M-7.99	DM99 CURRENT DATA AUTHORITY	N	—	—	—	
M-7.100	DM100 LOGICAL ACKNOWLEDGMENT	N	—	—	—	
M-7.101	DM101 REQUEST END OF SERVICE	Y				

Source: TBS		OPLINKP	Operational Response			Notes
Ref No	Downlink Message	Response	Uplink Message	Profile	Imp	
		Attribute		Status	Support	
M-7.101.1			UM0 UNABLE			
M-7.101.2			UM1 STANDBY			
M-7.101.3			UM2 REQUEST DEFERRED			
M-7.101.4			UM162 SERVICE UNAVAILABLE			
M-7.101.5			UM211 REQUEST FORWARDED			
M-7.101.6			UM218 REQUEST ALREADY RECEIVED			
M-7.101.7			UM234 FLIGHT PLAN NOT HELD			
M-7.101.8			UM161 END SERVICE			
M-7.102	DM102 LANDING REPORT	N	—	—	—	
M-7.103	DM103 CANCELLING IFR	Y				
M-7.103.1			UM3 ROGER			
M-7.104	DM104 ETA [position] [time]	N	—	—	—	
M-7.105	DM105 ALTERNATIVE AERODROME [airport]	N	—	—	—	
M-7.106	DM106 PREFERRED LEVEL [level]	N	—	—	—	
M-7.107	DM107 NOT AUTHORIZED NEXT DATA AUTHORITY	N	—	—	—	
M-7.108	DM108 DE-ICING COMPLETE	N	—	—	—	
M-7.109	DM109 TOP OF DESCENT [time]	N	—	—	—	
M-7.110	DM110 TOP OF DESCENT [position]	N	—	—	—	
M-7.111	DM111 TOP OF DESCENT [time] [position]	N	—	—	—	
M-7.112	DM112 SQUAWKING 7500	N	—	—	—	
M-7.113	DM113 [speedType] [speedType] [speedType] SPEED [speed]	N	—	—	—	

Notes:

- a UM0 UNABLE, may be qualified by UM166 DUE TO [traffic type] or UM167 DUE TO AIRSPACE RESTRICTION

Table M-8: Compound Message Parameter Elements

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send - Ground ASE					Receive - Ground ASE					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.1	ATISCode	M					M					IA5String SIZE(1)	1
M-8.2	Code	M					M					SEQUENCE SIZE(4) OF CodeOctalDigit	2
M-8.2.1	CodeOctalDigit											INTEGER (0..7)	
M-8.3	Direction Degrees											DirectionDegrees ::= SEQUENCE	3
M-8.3.1	Direction	M					—	—	—	—	—	Direction	See P-6
M-8.3.2	Degrees	M					—	—	—	—	—	Degrees	See P-4
M-8.4	Distance Specified Direction Time											DistanceSpecifiedDirectionTime ::= SEQUENCE	4
M-8.4.1	Distance Specified Direction	—	—	—	—	—	M					DistanceSpecifiedDirection	See P-8
M-8.4.2	Time	—	—	—	—	—	M					Time	See P-24
M-8.5	Facility											Facility ::= CHOICE	5
M-8.5.1	No Facility	C					—	—	—	—	—	[0] NULL	
M-8.5.2	Facility Designation	C					—	—	—	—	—	[1] FacilityDesignation	
M-8.5.2	Facility Designation											IA5String SIZE(4..8)	
M-8.6	Facility Designation											IA5String SIZE(4..8)	6, a
M-8.7	Facility Designation Altimeter											FacilityDesignationAltimeter ::= SEQUENCE	7
M-8.7.1	Facility Designation	M					—	—	—	—	—	FacilityDesignation	
M-8.7.2	Altimeter	M					—	—	—	—	—	Altimeter	See P-2
M-8.7.1	Facility Designation											IA5String SIZE(4..8)	
M-8.8	Facility Designation ATIS Code											FacilityDesignationATISCode ::= SEQUENCE	8
M-8.8.1	Facility Designation	M					—	—	—	—	—	FacilityDesignation	
M-8.8.2	ATIS Code	M					—	—	—	—	—	ATISCode	
M-8.8.1	Facility Designation											IA5String SIZE(4..8)	
M-8.8.2	ATISCode											IA5String SIZE(1)	
M-8.9	Free Text	M					M					IA5String SIZE(1..256)	9
M-8.10	LevelLevel	M					M					SEQUENCE SIZE(2) OF Level	10, See P-14
M-8.11	Level Position											LevelPosition ::= SEQUENCE	11
M-8.11.1	Level	M					—	—	—	—	—	Level	See P-14
M-8.11.2	Position	M					—	—	—	—	—	Position	See P-15
M-8.12	Level Speed											LevelSpeed ::= SEQUENCE	12

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send - Ground ASE					Receive - Ground ASE					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.12.1	Level	M					—	—	—	—	—	Level	See P-14
M-8.12.2	Speed	M					—	—	—	—	—	Speed	See P-22
M-8.13	Level Speed Speed											LevelSpeedSpeed ::= SEQUENCE	13
M-8.13.1	Level	M					—	—	—	—	—	Level	See P-14
M-8.13.2	Speeds	M					—	—	—	—	—	SpeedSpeed	
M-8.13.2	SpeedSpeed	M					—	—	—	—	—	SEQUENCE SIZE(2) OF Speed	See P-22
M-8.14	Level Time											LevelTime ::= SEQUENCE	14
M-8.14.1	Level	M					M					Level	See P-14
M-8.14.2	Time	M					M					Time	See P-24
M-8.15	PositionDegrees											PositionDegrees ::= SEQUENCE	15
M-8.15.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.15.2	Degrees	M					—	—	—	—	—	Degrees	See P-6
M-8.16	Position Distance Specified Direction											PositionDistanceSpecifiedDirection ::= SEQUENCE	16
M-8.16.1	Position	M					M					Position	See P-15
M-8.16.2	Distance Specified Direction	M					M					DistanceSpecifiedDirection	See P-8
M-8.17	PositionLevel											PositionLevel ::= SEQUENCE	17
M-8.17.1	Position	M					M					Position	See P-15
M-8.17.2	Level	M					M					Level	See P-14
M-8.18	Position Level Level											PositionLevelLevel ::= SEQUENCE	18
M-8.18.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.18.2	Levels	M					—	—	—	—	—	LevelLevel	
M-8.18.2	Level Level	M					—	—	—	—	—	SEQUENCE SIZE(2) OF Level	See P-14
M-8.19	Position Level Speed											PositionLevelSpeed ::= SEQUENCE	19
M-8.19.1	Position Level	M					—	—	—	—	—	PositionLevel	
M-8.19.2	Speed	M					—	—	—	—	—	Speed	See P-22
M-8.19.1	PositionLevel											PositionLevel ::= SEQUENCE	
M-8.19.1.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.19.1.2	Level	M					—	—	—	—	—	Level	See P-14
M-8.20	PositionPosition	M					—	—	—	—	—	SEQUENCE SIZE(2) OF Position	20, See P-15
M-8.21	Position Procedure Name											PositionProcedureName ::= SEQUENCE	21
M-8.21.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.21.2	Procedure Name	M					—	—	—	—	—	ProcedureName	See P-17
M-8.22	Position Route Clearance Index											PositionRouteClearanceIndex ::= SEQUENCE	22
M-8.22.1	Position	M					M					Position	See P-15
M-8.22.2	RouteClearanceIndex	M					M					RouteClearanceIndex	See P-19

Source: Chapter 4 - ASN.1		Send - Ground ASE					Receive - Ground ASE					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.23	Position Speed											PositionSpeed ::= SEQUENCE	23
M-8.23.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.23.2	Speed	M					—	—	—	—	—	Speed	See P-22
M-8.24	Position Speed Speed											PositionSpeedSpeed ::= SEQUENCE	24
M-8.24.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.24.2	Speeds	M					—	—	—	—	—	SpeedSpeed	
M-8.24.2	SpeedSpeed	M					—	—	—	—	—	SEQUENCE SIZE(2) OF Speed	See P-22
M-8.25	Position Time											PositionTime ::= SEQUENCE	25
M-8.25.1	Position	M					M					Position	See P-15
M-8.25.2	Time	M					M					Time	See P-24
M-8.26	Position Time Level											PositionTimeLevel ::= SEQUENCE	26
M-8.26.1	Position Time	M					—	—	—	—	—	PositionTime	
M-8.26.2	Level	M					—	—	—	—	—	Level	See P-14
M-8.26.1	Position Time											PositionTime ::= SEQUENCE	
M-8.26.1.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.26.1.2	Time	M					—	—	—	—	—	Time	See P-24
M-8.27	Position Time Time											PositionTimeTime ::= SEQUENCE	27
M-8.27.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.27.2	Times	M					—	—	—	—	—	TimeTime	
M-8.27.2	TimeTime	M					—	—	—	—	—	SEQUENCE SIZE (2) OF Time	See P-24
M-8.28	Position Unit Name Frequency											PositionUnitNameFrequency ::= SEQUENCE	28
M-8.28.1	Position	M					—	—	—	—	—	Position	See P-15
M-8.28.2	Unit Name	M					—	—	—	—	—	UnitName	See P-25
M-8.28.3	Frequency	M					—	—	—	—	—	Frequency	See P-10
M-8.29	Remaining Fuel Persons On Board											RemainingFuelPersonsOnBoard ::= SEQUENCE	29
M-8.29.1	Remaining Fuel	—	—	—	—	—	M					Time	See P-24
M-8.29.2	Persons On Board	—	—	—	—	—	M					PersonsOnBoard	
M-8.29.2	Persons On Board											INTEGER (1..1024)	
M-8.30	Runway RVR											RunwayRVR ::= SEQUENCE	30
M-8.30.1	Runway	M					—	—	—	—	—	Runway	See P-21
M-8.30.2	RVR	M					—	—	—	—	—	RVR	
M-8.30.2	RVR											RVR ::= CHOICE	
M-8.30.2.1	RVR Feet	C					—	—	—	—	—	[0] RVRFeet	
M-8.30.2.2	RVR Meters	C					—	—	—	—	—	[1] RVRMeters	
M-8.30.2.1	RVRFeet (0 to 6100 feet)											INTEGER (0..6100)	

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send - Ground ASE					Receive - Ground ASE					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.30.2.2	RVRMeters (0 to 1500 meters)											INTEGER (0..1500)	
M-8.31	SpeedSpeed	M					M					SEQUENCE SIZE (2) OF Speed	31, See P-22
M-8.32	Speed Time											SpeedTime ::= SEQUENCE	32
M-8.32.1	Speed	—	—	—	—	—	M					Speed	See P-22
M-8.32.1	Time	—	—	—	—	—	M					Time	See P-24
M-8.33	SpeedTypeSpeedTypeSpeedType	M					—	—	—	—	—	SEQUENCE SIZE (3) OF SpeedType	33, See P-23
M-8.34	SpeedTypeSpeedTypeSpeedTypeSpeed											SpeedTypeSpeedTypeSpeedTypeSpeed ::= SEQUENCE	34
M-8.34.1	Speed Types	—	—	—	—	—	M					SpeedTypeSpeedTypeSpeedType	
M-8.34.2	Speed	—	—	—	—	—	M					Speed	See P-22
M-8.34.1	SpeedTypeSpeedTypeSpeedType	—	—	—	—	—	M					SEQUENCE SIZE (3) OF SpeedType	See P-23
M-8.35	Time Distance Specified Direction											TimeDistanceSpecifiedDirection ::= SEQUENCE	35
M-8.35.1	Time	M					M					Time	See P-24
M-8.35.2	DistanceSpecifiedDirection	M					M					DistanceSpecifiedDirection	See P-8
M-8.36	Time Distance To From Position											TimeDistanceToFromPosition ::= SEQUENCE	36
M-8.36.1	Time	—	—	—	—	—	M					Time	See P-24
M-8.36.2	Distance	—	—	—	—	—	M					Distance	See P-7
M-8.36.3	To From	—	—	—	—	—	M					ToFrom	
M-8.36.4	Position	—	—	—	—	—	M					Position	See P-15
M-8.36.3	To From											ToFrom ::= ENUMERATED	
M-8.36.3.1	To	—	—	—	—	—	M					(0) to	
M-8.36.3.2	From	—	—	—	—	—	M					(1) from	
M-8.37	Time Level											TimeLevel ::= SEQUENCE	37
M-8.37.1	Time	M					M					Time	See P-24
M-8.37.2	Level	M					M					Level	See P-14
M-8.38	Time Position											TimePosition ::= SEQUENCE	38
M-8.38.1	Time	M					M					Time	See P-24
M-8.38.2	Position	M					M					Position	See P-15
M-8.39	Time Position Level											TimePositionLevel ::= SEQUENCE	39
M-8.39.1	Time Position	M					—	—	—	—	—	TimePosition	
M-8.39.2	Level	M					—	—	—	—	—	Level	See P-14
M-8.39.1	Time Position											TimePosition ::= SEQUENCE	
M-8.39.1.1	Time	M					—	—	—	—	—	Time	See P-24
M-8.39.1.2	Position	M					—	—	—	—	—	Position	See P-15

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send - Ground ASE					Receive - Ground ASE					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-8.40	Time Position Level Speed											TimePositionLevelSpeed ::= SEQUENCE	40
M-8.40.1	Time	M					—	—	—	—	—	Time	See P-24
M-8.40.2	Position	M					—	—	—	—	—	Position	See P-15
M-8.40.3	Level	M					—	—	—	—	—	Level	See P-14
M-8.40.4	Speed	M					—	—	—	—	—	Speed	See P-22
M-8.41	Time Speed											TimeSpeed ::= SEQUENCE	41
M-8.41.1	Time	M					—	—	—	—	—	Time	See P-24
M-8.41.2	Speed	M					—	—	—	—	—	Speed	See P-22
M-8.42	Time Speed Speed											TimeSpeedSpeed ::= SEQUENCE	42
M-8.42.1	Time	M					—	—	—	—	—	Time	See P-24
M-8.42.2	Speeds	M					—	—	—	—	—	SpeedSpeed	
M-8.42.2	SpeedSpeed	M					—	—	—	—	—	SEQUENCE SIZE (2) OF Speed	See P-22
M-8.43	Time To From Position											TimeToFromPosition ::= SEQUENCE	43
M-8.43.1	Time	M					—	—	—	—	—	Time	See P-24
M-8.43.2	To From	M					—	—	—	—	—	ToFrom	
M-8.43.3	Position	M					—	—	—	—	—	Position	See P-15
M-8.43.2	To From											ToFrom ::= ENUMERATED	
M-8.43.2.1	To	C					—	—	—	—	—	(0) to	
M-8.43.2.2	From	C					—	—	—	—	—	(1) from	
M-8.44	Time Unit Name Frequency											TimeUnitNameFrequency :: SEQUENCE	44
M-8.44.1	Time	M					—	—	—	—	—	Time	See P-24
M-8.44.2	Unit Name	M					—	—	—	—	—	UnitName	See P-25
M-8.44.3	Frequency	M					—	—	—	—	—	Frequency	See P-10
M-8.45	To From Position											ToFromPosition ::= SEQUENCE	45
M-8.45.1	To From	M					—	—	—	—	—	ToFrom	
M-8.45.2	Position	M					—	—	—	—	—	Position	See P-15
M-8.45.1	To From											ToFrom ::= ENUMERATED	
M-8.45.1.1	To	C					—	—	—	—	—	(0) to	
M-8.45.1.2	From	C					—	—	—	—	—	(1) from	
M-8.46	Traffic Type											TrafficType ::= ENUMERATED	46
M-8.46.1	None Specified	C					—	—	—	—	—	(0) noneSpecified	
M-8.46.2	Opposite Direction	C					—	—	—	—	—	(1) OppositeDirection	
M-8.46.3	Same Direction	C					—	—	—	—	—	(2) sameDirection	
M-8.46.4	Converging	C					—	—	—	—	—	(3) converging	
M-8.46.5	Crossing	C					—	—	—	—	—	(4) crossing	
M-8.46.6	Diverging	C					—	—	—	—	—	(5) diverging	
M-8.46.7	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
M-8.47	UnitName Frequency											UnitNameFrequency ::= SEQUENCE	47
M-8.47.1	Unit Name	M					M					UnitName	See P-25

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send - Ground ASE					Receive - Ground ASE					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
M-8.47.2	Frequency	M					M					Frequency See P-10
M-8.48	VersionNumber	—	—	—	—	—	M					INTEGER (0..15) 48

Source: Chapter 4 - ASN.1													Notes		
Ref No	Operational Elements	Send - Ground ASE						Receive - Ground ASE						ASN.1 Protocol Elements	
		OPLINKP Profile	Profile		Implementation		OPLINKP Profile	Profile		Implementation					
			Status	Cons	Status	Cons		Status	Cons	Status	Cons				

Notes:

- a When used as a direct parameter to a message

Direct Message Use

1	Used in UM158, DM79
2	Used in UM123, DM47
3	Used in UM: 94, 95, 98, 215
4	Used in DM85
5	Used in UM160
6	Used in UM163, DM64
7	Used in UM213
8	Used in UM212
9	Used in UM: 169, 170, 183, 187, 194-199, 203-208, DM: 67, 68, 90-98
10	Used in UM: 30-32, 180, DM: 7,76,77
11	Used in UM: 27, 29, 78, 90,149, 209
12	Used in UM102
13	Used in UM105
14	Used in UM: 26, 28, 150, 192, DM81
15	Used in UM97
16	Used in UM65, DM16
17	Used in UM: 14, 16, 18, 22, 25, 42, 43, 44, 45, 46, 47, 48, 49, 92, 185, 186, DM: 11, 12
18	Used in UM50
19	Used in UM61
20	Used in UM77, 88
21	Used in UM84
22	Used in UM: 79, 83, 86, DM: 26, 59
23	Used in UM: 55, 56, 57, 101, 188
24	Used in UM104
25	Used in UM: 51, 52, 53, DM104
26	Used in UM: 58, 59, 60
27	Used in UM54
28	Used in UM: 118, 121
29	Used in DM57
30	Used in UM214
31	Used in UM110, DM: 19, 50
32	Used in DM83
33	Used in UM134
34	Used in DM113
35	Used in UM66, DM17
36	Used in DM78
37	Used in UM: 13, 15, 17, 21, 24, DM: 13, 14
38	Used in UM: 76, 89, DM111
39	Used in UM62
40	Used in UM63
41	Used in UM100
42	Used in UM103
43	Used in UM184
44	Used in UM: 119,122
45	Used in UM181
46	Used in UM166

Source: Chapter 4 - ASN.1		Send - Ground ASE						Receive - Ground ASE					ASN.1 Protocol Elements	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile		Implementation		OPLINKP Profile	Profile		Implementation				
			Status	Cons	Status	Cons		Status	Cons	Status	Cons			
47	Used in UM: 117, 120 DM89													
48	Used in DM73													

Table M-9: Ground Forward Initiator

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send - Ground ASE					Receive - Ground ASE					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
M-9.1	ATC Forward Message											ATCForwardMessage ::= SEQUENCE
M-9.1.1	Forward Header	M					—	—	—	—	—	ForwardHeader
M-9.1.2	Forward Message	M					—	—	—	—	—	ForwardMessage
M-9.1.1	Forward Header											ForwardHeader ::= SEQUENCE
M-9.1.1.1	Date Time Group	M					—	—	—	—	—	DateTimeGroup
M-9.1.1.2	Aircraft Flight Identification	M					—	—	—	—	—	AircraftFlightIdentification
M-9.1.1.3	Aircraft Address	M					—	—	—	—	—	AircraftAddress
P-9.1.1.2	AircraftFlightIdentification											IA5String SIZE(2..8)
M-9.1.1.3	AircraftAddress											BIT STRING SIZE(24)
M-9.1.2	Forward Message											ForwardMessage ::= CHOICE
M-9.1.2.1	Uplink Message Elements	C					—	—	—	—	—	ATCUplinkMessageData
M-9.1.2.2	Downlink Message Elements	C					—	—	—	—	—	ATCDownlinkMessageData
M-9.2	ATC Forward Response											ATCForwardResponse ::= ENUMERATED
M-9.2.1	Success	—	—	—	—	—	M					(0) success
M-9.2.2	Service not supported	—	—	—	—	—	M					(1) service-not-supported
M-9.2.3	Version not equal	—	—	—	—	—	M					(2) version-not-equal
M-9.2.3	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility
M-9.3	CPDLC User Abort Reason											CPDLCUserAbortReason ::= ENUMERATED
M-9.3.1	Undefined	M					M					(0) Undefined
M-9.3.2	No message identification numbers available	M					M					(1) no-message-identification-numbers-available
M-9.3.3	Duplicate message identification numbers	M					M					(2) duplicate-message-identification-numbers
M-9.3.4	No longer next data authority	—	—	—	—	—	M					(3) no-longer-next-data-authority
M-9.3.5	Current data authority abort	M					M					(4) current-data-authority-abort
M-9.3.6	Commanded termination	O					M					(5) commanded-termination
M-9.3.7	Invalid response	M					M					(6) invalid-response
M-9.3.8	Use of Extensibility	X					M					Use of Extensibility
M-9.4	CPDLC Provider Abort Reason											CPDLCProviderAbortReason ::= ENUMERATED
M-9.4.1	Timer expired	M					M					(0) timer-expired
M-9.4.2	Undefined error	M					M					(1) undefined-error
M-9.4.3	Invalid PDU	M					M					(2) invalid-PDU
M-9.4.4	Protocol Error	M					M					(3) protocol-error
M-9.4.5	Communication service error	M					M					(4) communication-service-error
M-9.4.6	Communication service failure	M					M					(5) communication-service-failure
M-9.4.7	Invalid QOS parameter	M					M					(6) invalid-QOS-parameter
M-9.4.8	Expected PDU missing	M					M					(7) expected-PDU-missing
M-9.4.9	Use of Extensibility	X					M					Use of Extensibility

Table M-10: Ground Forward Responder

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
M-10.1	ATC Forward Message											ATCForwardMessage ::= SEQUENCE	
M-10.1.1	Forward Header	—	—	—	—	—	M					ForwardHeader	
M-10.1.2	Forward Message	—	—	—	—	—	M					ForwardMessage	
M-10.1.1	Forward Header											ForwardHeader ::= SEQUENCE	
M-10.1.1.1	Date Time Group	—	—	—	—	—	M					DateTimeGroup	
M-10.1.1.2	Aircraft Flight Identification	—	—	—	—	—	M					AircraftFlightIdentification	
M-10.1.1.3	Aircraft Address	—	—	—	—	—	M					AircraftAddress	
P-10.1.1.2	AircraftFlightIdentification											IA5String SIZE(2..8)	
M-10.1.1.3	AircraftAddress											BIT STRING SIZE(24)	
M-10.1.2	Forward Message											ForwardMessage ::= CHOICE	
M-10.1.2.1	Uplink Message Elements	—	—	—	—	—	M					ATCUplinkMessageData	See M-1
M-10.1.2.2	Downlink Message Elements	—	—	—	—	—	M					ATCDownlinkMessageData	See M-2
M-10.2	ATC Forward Response											ATCForwardResponse ::= ENUMERATED	
M-10.2.1	Success	C.1					—	—	—	—	—	(0) success	
M-10.2.2	Service not supported	C.2					—	—	—	—	—	(1) service-not-supported	
M-10.2.3	Version not equal	C.1					—	—	—	—	—	(2) version-not-equal	
M-10.2.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
M-10.3	CPDLC User Abort Reason											CPDLCUserAbortReason ::= ENUMERATED	
M-10.3.1	Undefined	M					M					(0) Undefined	
M-10.3.2	No message identification numbers available	M					M					(1) no-message-identification-numbers-available	
M-10.3.3	Duplicate message identification numbers	M					M					(2) duplicate-message-identification-numbers	
M-10.3.4	No longer next data authority	—	—	—	—	—	M					(3) no-longer-next-data-authority	
M-10.3.5	Current data authority abort	M					M					(4) current-data-authority-abort	
M-10.3.6	Commanded termination	O					M					(5) commanded-termination	
M-10.3.7	Invalid response	M					M					(6) invalid-response	
M-10.3.8	Use of Extensibility	X					M					Use of Extensibility	
M-10.4	CPDLC Provider Abort Reason											CPDLCProviderAbortReason ::= ENUMERATED	
M-10.4.1	Timer expired	M					M					(0) timer-expired	
M-10.4.2	Undefined error	M					M					(1) undefined-error	
M-10.4.3	Invalid PDU	M					M					(2) invalid-PDU	
M-10.4.4	Protocol Error	M					M					(3) protocol-error	
M-10.4.5	Communication service error	M					M					(4) communication-service-error	
M-10.4.6	Communication service failure	M					M					(5) communication-service-failure	
M-10.4.7	Invalid QOS parameter	M					M					(6) invalid-QOS-parameter	
M-10.4.8	Expected PDU missing	M					M					(7) expected-PDU-missing	
M-10.4.9	Use of Extensibility	X					M					Use of Extensibility	

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		

OPLINKP Status:

- C.1 If FWD-User then M, else X
 C.2 If not FWD-User then M, else X

Table P-1: Airport Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 209, 210, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 105, 110, 111

Source: Chapter 4 - ASN.1													Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	
		OPLINKP Profile	Profile		Implementation Status	Cons	OPLINKP Profile	Profile		Implementation Status	Cons		
			Status	Cons				Status	Cons				
P-1.1	Airport											IA5String SIZE(4)	

Table P-2: Altimeter Parameter Uplink

Used in the following messages: UM: 153, 213

DM: None

Source: Chapter 4 - ASN.1														
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons			
P-2.1	Altimeter											Altimeter ::= CHOICE		
P-2.1.1	Altimeter English	C					—	—	—	—	—	[0] AltimeterEnglish		
P-2.1.2	Altimeter Metric	C					—	—	—	—	—	[1] AltimeterMetric		
P-2.1.1	Altimeter English in Inches of Mercury											AltimeterEnglish INTEGER (2200..3200)		
P-2.1.2	Altimeter Metric in Hectopascal											AltimeterMetric INTEGER (7500..12500)		

Table P-3: Clearance Type Parameter - Downlinked

Used in the following messages: UM: None

DM: 25

Source: Chapter 4 - ASN.1															Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements			
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons				
P-3.1	ClearanceType											ClearanceType ::= ENUMERATED			
P-3.1.1	None Specified	—	—	—	—	—	C			—		(0) noneSpecified			
P-3.1.2	Approach	—	—	—	—	—	C			—		(1) approach			
P-3.1.3	Departure	—	—	—	—	—	C			—		(2) departure			
P-3.1.4	Further	—	—	—	—	—	C			—		(3) further			
P-3.1.5	Start-up	—	—	—	—	—	C			—		(4) start-up			
P-3.1.6	Pushback	—	—	—	—	—	C			—		(5) pushback			
P-3.1.7	Taxi	—	—	—	—	—	C			—		(6) taxi			
P-3.1.8	Take-off	—	—	—	—	—	C			—		(7) take-off			
P-3.1.9	Landing	—	—	—	—	—	C			—		(8) landing			
P-3.1.10	Oceanic	—	—	—	—	—	C			—		(9) oceanic			
P-3.1.11	En-route	—	—	—	—	—	C			—		(10) en-route			
P-3.1.12	Downstream	—	—	—	—	—	C			—		(11) downstream			
P-3.1.13	Use of Extensibility	—	—	—	—	—	M			—		Use of Extensibility			

Table P-4: Degrees Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 94, 95, 97, 98, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 190, 209, 210, 215, 221, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 35, 36, 30, 42, 44, 45, 48, 59, 70, 71, 78, 104, 110, 111

Source: Chapter 4 - ASN.1											
Ref No	Operational Elements	Send					Receive				
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons
P-4.1	Degrees										
P-4.1.1	Degrees Magnetic	C					C				
P-4.1.2	Degrees True	C					C				
P-4.1.1	Degrees Magnetic (1-360)/1										
P-4.1.2	DegreesTrue (1-360)/1										

Table P-5: Departure Clearance Parameter

Used in the following messages: UM: 73
DM: none

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Status	Cons	Implementation Status	Cons	OPLINKP Profile	Status	Cons	Implementation Status	Cons		
P-5.1	Departure Clearance											DepartureClearance ::= SEQUENCE	
P-5.1.1	Aircraft Flight Identification	M					—	—	—	—	—	[0] AircraftFlightIdentification	
P-5.1.2	Clearance Limit	M					—	—	—	—	—	[1] Position	See P-15
P-5.1.3	Flight Information	O					—	—	—	—	—	[2] FlightInformation (OPTIONAL)	
P-5.1.4	Further Instructions	M					—	—	—	—	—	[3] FurtherInstructions (OPTIONAL)	
P-5.1.1	AircraftFlightIdentification											IA5String SIZE(2..8)	
P-5.1.3	Flight Information											FlightInformation ::= CHOICE	
P-5.1.3.1	Route of Flight	C					—	—	—	—	—	[0] RouteInformation	See P-20
P-5.1.3.2	Levels of Flight	C					—	—	—	—	—	[1] LevelsOfFlight	
P-5.1.3.3	Route and Levels	C					—	—	—	—	—	[2] RouteAndLevels	
P-5.1.3.2	Levels Of Flight											LevelsOfFlight ::= CHOICE	
P-5.1.3.2.1	Level	C					—	—	—	—	—	[0] Level	See P-14
P-5.1.3.2.2	Procedure Name	C					—	—	—	—	—	[1] ProcedureName	See P-17
P-5.1.3.2.3	Level Procedure Name	C					—	—	—	—	—	[2] LevelProcedureName	
P-5.1.3.2.3	Level Procedure Name											LevelProcedureName ::= SEQUENCE	
P-5.1.3.2.3.1	Level	M					—	—	—	—	—	Level	See P-14
P-5.1.3.2.3.2	Procedure Name	M					—	—	—	—	—	ProcedureName	See P-17
P-5.1.3.3	Route And Levels											RouteAndLevels ::= SEQUENCE	
P-5.1.3.3.1	Route Information	M					—	—	—	—	—	RouteInformation	See P-20
P-5.1.3.3.2	Levels Of Flight	M					—	—	—	—	—	LevelsOfFlight	
P-5.1.3.3.2	Levels Of Flight											LevelsOfFlight ::= CHOICE	
P-5.1.3.3.2.1	Level	C					—	—	—	—	—	[0] Level	See P-14
P-5.1.3.3.2.2	Procedure Name	C					—	—	—	—	—	[1] ProcedureName	See P-17
P-5.1.3.3.2.3	Level Procedure Name	C					—	—	—	—	—	[2] LevelProcedureName	
P-5.1.3.3.2.3	Level Procedure Name											LevelProcedureName ::= SEQUENCE	
P-5.1.3.3.2.3.1	Level	M					—	—	—	—	—	Level	See P-14
P-5.1.3.3.2.3.2	Procedure Name	M					—	—	—	—	—	ProcedureName	See P-17
P-5.1.4	Further Instructions											FurtherInstructions ::= SEQUENCE	
P-5.1.4.1	Code	O					—	—	—	—	—	[0] Code (OPTIONAL)	
P-5.1.4.2	Departure Frequency	M					—	—	—	—	—	[1] UnitNameFrequency (OPTIONAL)	See M-8
P-5.1.4.3	Clearance Expiry Time	O					—	—	—	—	—	[2] Time (OPTIONAL)	See P-24
P-5.1.4.4	Departure Airport	O					—	—	—	—	—	[3] Airport (OPTIONAL)	See P-1
P-5.1.4.5	Destination Airport	O					—	—	—	—	—	[4] Airport (OPTIONAL)	See P-1
P-5.1.4.6	Departure Time	O					—	—	—	—	—	[5] TimeDeparture (OPTIONAL)	
P-5.1.4.7	Departure Runway	O					—	—	—	—	—	[6] Runway (OPTIONAL)	See P-21
P-5.1.4.8	RevisionNumber	O					—	—	—	—	—	[7] RevisionNumber (OPTIONAL)	
P-5.1.4.9	ATIS Code	O					—	—	—	—	—	[8] ATISCode (OPTIONAL)	

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-5.1.4.1	Code											SEQUENCE SIZE(4) OF CodeOctalDigit	
P-5.1.4.1.1	CodeOctalDigit											INTEGER (0..7)	
P-5.1.4.6	Time Departure											TimeDeparture ::= SEQUENCE	
P-5.1.4.6.1	Time Departure Allocated	C					—	—	—	—	—	[0] Time (OPTIONAL)	See P-24
P-5.1.4.6.2	Time Departure Controlled	C					—	—	—	—	—	[1] ControlledTime (OPTIONAL)	
P-5.1.4.6.3	Time Departure Clearance Expected	C					—	—	—	—	—	[2] Time (OPTIONAL)	See P-24
P-5.1.4.6.4	Departure Minimum Interval	C					—	—	—	—	—	[3] DepartureMinimumInterval (OPTIONAL)	
P-5.1.4.6.2	Controlled Time											ControlledTime ::= SEQUENCE	
P-5.1.4.6.2.1	Time	M					—	—	—	—	—	Time	See P-24
P-5.1.4.6.2.2	Time Tolerance	M					—	—	—	—	—	TimeTolerance	
P-5.1.4.6.2.2	Time Tolerance											TimeTolerance ::= ENUMERATED	
P-5.1.4.6.2.2.1	At	C					—	—	—	—	—	(0) at	
P-5.1.4.6.2.2.2	At or After	C					—	—	—	—	—	(1) atorafter	
P-5.1.4.6.2.2.3	At or Before	C					—	—	—	—	—	(2) atorbefore	
P-5.1.4.6.4	Departure Minimum Interval in minutes (0.1-15.0)/0.1											INTEGER (1..150)	
P-5.1.4.8	RevisionNumber											INTEGER (1..16)	
P-5.1.4.9	ATISCode											IA5String SIZE(1)	

Table P-6: Direction Parameter

Used in the following messages: UM: 64-66, 79, 80, 82, 83, 85, 86, 91, 94, 95, 98, 152, 215

DM: 15-17, 24, 26, 27, 40, 59, 60, 80, 85, 86

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-6.1	Direction											Direction ::= ENUMERATED	
P-6.1.1	Left	M					M					(0) left	
P-6.1.2	Right	M					M					(1) right	
P-6.1.3	Either Side	O					O					(2) eitherSide	
P-6.1.4	North	O					O					(3) north	
P-6.1.5	South	O					O					(4) south	
P-6.1.6	East	O					O					(5) east	
P-6.1.7	West	O					O					(6) west	
P-6.1.8	North East	O					O					(7) northEast	
P-6.1.9	North West	O					O					(8) northWest	
P-6.1.10	South East	O					O					(9) southEast	
P-6.1.11	South West	O					O					(10) southWest	

Table P-7: Distance Parameter

Used in the following messages:

UM:	8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 94, 95, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 190, 209, 210, 228
DM:	11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 110, 111

Source: Chapter 4 - ASN.1													Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-7.1	Distance											Distance ::= CHOICE	
P-7.1.1	Distance in Nautical Miles	C					C					[0] DistanceNm	
P-7.1.2	Distance in Kilometres	C					C					[1] DistanceKm	
P-7.1.1	DistanceNm (0-999.9)/0.1											INTEGER (0..9999)	
P-7.1.2	DistanceKm (0-2000)/0.25											INTEGER (0..8000)	

Table P-8: Distance Specified Direction Parameter

Used in the following messages: UM: 64, 65, 66, 82, 152

DM: 15, 16, 17, 27, 60, 80, 85, 86

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-8.1	Distance Specified Direction											DistanceSpecifiedDirection ::= SEQUENCE
P-8.1.1	Distance Specified	M					M					DistanceSpecified
P-8.1.2	Direction	M					M					Direction
												See P-6
P-8.1.1	Distance Specified											DistanceSpecified ::= CHOICE
P-8.1.1.1	Distance Specified in Nautical Miles	C					C					[0] DistanceSpecifiedNm
P-8.1.1.2	Distance Specified in Kilometres	C					C					[1] DistanceSpecifiedKm
P-8.1.1.1	DistanceSpecifiedNm (1-250)/1											INTEGER (1..250)
P-8.1.1.2	DistanceSpecifiedKm (1-500)/1											INTEGER (1..500)

Table P-9: Error Information Parameter

Used in the following messages: UM: 159

 DM: 62

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-9.1	Error Information											ErrorInformation ::= ENUMERATED	
P-9.1.1	Unrecognized Msg Reference Number	M					M					(0) unrecognizedMsgReferenceNumber	
P-9.1.2	Logical Acknowledgment Not Accepted	O					M					(1) logicalAcknowledgmentNotAccepted	
P-9.1.3	Insufficient Resources	M					M					(2) insufficientResources	
P-9.1.4	Invalid Message Element Combination	M					M					(3) invalidMessageElementCombination	
P-9.1.5	Invalid Message Element	M					M					(4) invalidMessageElement	
P-9.1.6	Use of Extensibility	X					M					Use of Extensibility	

Table P-10: Frequency Parameter

Used in the following messages: UM: 73, 117-122, 157

DM: 21, 89

Source: Chapter 4 - ASN.1														Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements		
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons			
P-10.1	Frequency											Frequency ::= CHOICE		
P-10.1.1	Frequency HF	O					O					[0] Frequencyhf		
P-10.1.2	Frequency VHF	M					M					[1] Frequencyvhf		
P-10.1.3	Frequency UHF	O					O					[2] Frequencyuhf		
P-10.1.4	Frequency Sat Channel	O					O					[3] Frequencysatchannel		
P-10.1.1	Frequencyhf KHz (2850-28000)/1											INTEGER (2850..28000)		
P-10.1.2	Frequencyvhf MHz (118-136.990)/0.005											INTEGER (23600..27398)		
P-10.1.3	Frequencyuhf MHz (225-399.975)/0.025											INTEGER (9000..15999)		
P-10.1.4	Frequencysatchannel Telephone No											NumericString SIZE(12)		

Table P-11: Hold Clearance Parameter

Used in the following messages: UM: 91

DM: None

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-11.1	Hold Clearance											HoldClearance ::= SEQUENCE
P-11.1.1	Position	M					—	—	—	—	—	[0] Position See P-15
P-11.1.2	Level	M					—	—	—	—	—	[1] Level See P-14
P-11.1.3	Degrees	M					—	—	—	—	—	[2] Degrees See P-4
P-11.1.4	Direction	M					—	—	—	—	—	[3] Direction See P-6
P-11.1.5	Leg Type	O					—	—	—	—	—	[4] LegType (OPTIONAL) See P-13

Table P-12: Latitude Longitude Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 209, 210, 228
 DM: 11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 110, 111

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-12.1	Latitude Longitude											LatitudeLongitude ::= SEQUENCE
P-12.1.1	Latitude	M					M					[0] Latitude (OPTIONAL) a
P-12.1.2	Longitude	M					M					[1] Longitude (OPTIONAL) a
P-12.1.1	Latitude											Latitude ::= SEQUENCE
P-12.1.1.1	Latitude Type	M					M					LatitudeType
P-12.1.1.2	Latitude Direction	M					M					LatitudeDirection
P-12.1.1.1	Latitude Type											LatitudeType ::= CHOICE
P-12.1.1.1.1	Latitude Degrees	C					C					[0] LatitudeDegrees
P-12.1.1.1.2	Latitude Degrees Minutes	C					C					[1] LatitudeDegreesMinutes
P-12.1.1.1.3	Latitude Degrees Minutes Seconds	C					C					[2] LatitudeDegreesMinutesSeconds
P-12.1.1.1.1	Latitude Degrees (0-90)/0.001											INTEGER (0.90000)
P-12.1.1.1.2	Latitude Degrees Minutes											LatitudeDegreesMinutes ::= SEQUENCE
P-12.1.1.1.2.1	Latitude Whole Degrees	M					M					LatitudeWholeDegrees
P-12.1.1.1.2.2	Minutes Lat Lon	M					M					MinutesLatLon
P-12.1.1.1.2.1	LatitudeWholeDegrees (0-89)/1											INTEGER (0..89)
P-12.1.1.1.2.2	MinutesLatLon (0-59.99)/0.01											INTEGER (0..5999)
P-12.1.1.1.3	Latitude Degrees Minutes Seconds											LatitudeDegreesMinutesSeconds ::= SEQUENCE
P-12.1.1.1.3.1	Latitude Whole Degrees	M					M					LatitudeWholeDegrees
P-12.1.1.1.3.2	Lat Lon Whole Minutes	M					M					LatLonWholeMinutes
P-12.1.1.1.3.3	Seconds Lat Lon	M					M					SecondsLatLon
P-12.1.1.1.3.1	LatitudeWholeDegrees (0-89)/1											INTEGER (0..89)
P-12.1.1.1.3.2	LatLonWholeMinutes (0-59)/1											INTEGER (0..59)
P-12.1.1.1.3.3	SecondsLatLon											INTEGER (0..59)
P-12.1.1.2	Latitude Direction											LatitudeDirection ::= ENUMERATED
P-12.1.1.2.1	North	M					M					(0) north
P-12.1.1.2.2	South	M					M					(1) south

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-12.1.2	Longitude											Longitude ::= SEQUENCE	
P-12.1.2.1	LongitudeType	M					M					LongitudeType	
P-12.1.2.2	LongitudeDirection	M					M					LongitudeDirection	
P-12.1.2.1	Longitude Type											LongitudeType ::= CHOICE	
P-12.1.2.1.1	Longitude Degrees	C					C					[0] LongitudeDegrees	a
P-12.1.2.1.2	Longitude Degrees Minutes	C					C					[1] LongitudeDegreesMinutes	a
P-12.1.2.1.3	Longitude Degrees Minutes Seconds	C					C					[2] LongitudeDegreesMinutesSeconds	a
P-12.1.2.1.1	LongitudeDegrees (0-180)/0.001											INTEGER (0..180000)	
P-12.1.2.1.2	Longitude Degrees Minutes											LongitudeDegreesMinutes ::= SEQUENCE	
P-12.1.2.1.2.1	Longitude Whole Degrees	M					M					LongitudeWholeDegrees	
P-12.1.2.1.2.2	Minutes Lat Lon	M					M					MinutesLatLon	
P-12.1.2.1.2.1	LongitudeWholeDegrees (0-179)/1											INTEGER (0..179)	
P-12.1.2.1.2.2	MinutesLatLon (0-59.99)/0.01											INTEGER (0..5999)	
P-12.1.2.1.3	Longitude Degrees Minutes Seconds											LongitudeDegreesMinutesSeconds ::= SEQUENCE	
P-12.1.2.1.3.1	LongitudeWholeDegrees	M					M					LongitudeWholeDegrees	
P-12.1.2.1.3.2	LatLonWholeMinutes	M					M					LatLonWholeMinutes	
P-12.1.2.1.3.3	SecondsLatLon	M					M					SecondsLatLon	
P-12.1.2.1.3.1	LongitudeWholeDegrees (0-179)/1											INTEGER (0..179)	
P-12.1.2.1.3.2	LatLonWholeMinutes (0-59)/1											INTEGER (0..59)	
P-12.1.2.1.3.3	SecondsLatLon											INTEGER (0..59)	
P-12.1.2.2	Longitude Direction											LongitudeDirection ::= ENUMERATED	
P-12.1.2.2.1	East	C					M					(0) east	
P-12.1.2.2.2	West	C					M					(1) west	

Notes:

- a The elements are optional in ASN.1, but an implementation must be capable of supporting all types

Table P-13: Leg Type Parameter

Used in the following messages: UM: 79, 80, 83, 85, 86, 91

DM: 24, 26, 40, 59

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-13.1	Leg Type											LegType ::= CHOICE
P-13.1.1	Leg Distance	C					C					[0] LegDistance
P-13.1.2	Leg Time	C					C					[1] LegTime
P-13.1.1	Leg Distance											LegDistance ::= CHOICE
P-13.1.1.1	Leg Distance English	C					C					[0] LegDistanceEnglish
P-13.1.1.2	Leg Distance Metric	C					C					[1] LegDistanceMetric
P-13.1.1.1	Leg Distance English Nm (0-50)/1											INTEGER (0..50)
P-13.1.1.2	Leg Distance Metric Km (1-128)/1											INTEGER (1..128)
P-13.1.2	Leg Time Minutes (0-10)/1											INTEGER (0..10)

Table P-14: Level Parameter

Used in the following messages: UM: 6, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34-39, 42-50, 58-63, 73, 78, 79, 80, 83, 85, 86, 90-92, 102, 105, 128, 129, 148, 149, 150, 175, 180, 185, 186, 192, 209, 219, 220

DM: 6-14, 24, 26, 28-30, 32, 37, 38, 40, 48, 54, 59, 61, 72, 76, 77, 81, 82, 87, 88, 106

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-14.1	Level											Level ::= CHOICE	
P-14.1.1	Single Level	M					M					[0] LevelType	
P-14.1.2	Block Level	O					O					[1] SEQUENCE SIZE(2) OF LevelType	
P.14.1&2	Level Type											LevelType ::= CHOICE	
P.14.1&2.1	Level Feet	C					C					[0] LevelFeet	
P.14.1&2.2	Level Meters	C					C					[1] LevelMeters	
P.14.1&2.3	Level Flight Level	C					C					[2] LevelFlightLevel	
P.14.1&2.4	Level Flight Level Metric	C					C					[3] LevelFlightLevelMetric	
P.14.1&2.1	LevelFeet (-600-70000)/10											INTEGER (-60..7000)	
P.14.1&2.2	LevelMeters (-30-25000)/1											INTEGER (-30..25000)	
P.14.1&2.3	LevelFlightLevel 100's ft (30-700)/1											INTEGER (30..700)	
P.14.1&2.4	LevelFlightLevelMetric 10's m (100-2500)/1											INTEGER (100..2500)	

Table P-15: Position Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-79, 80, 83-92, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 209, 210, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 110, 111

Source: Chapter 4 - ASN.1											
Ref No	Operational Elements	Send					Receive				
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons
P-15.1	Position										
P-15.1.1	Fix Name	C					M				
P-15.1.2	Navaid	C					M				
P-15.1.3	Airport	C					M				
P-15.1.4	Latitude and Longitude	C					M				
P-15.1.5	Place Bearing Distance	C					M				
P-15.1.1	Fix Name										
P-15.1.1.1	Fix	M					M				
P-15.1.1.2	Latitude and Longitude	M					M				
P-15.1.1.1	Fix										
P-15.1.2	Navaid										
P-15.1.2.1	Navaid Name	M					M				
P-15.1.2.2	Latitude and Longitude	M					M				
P-15.1.2.1	NavaidName										
P-15.1.3	Airport										
P-15.1.5	Place Bearing Distance										
P-15.1.5.1	Published Identifier	M					M				
P-15.1.5.2	Degrees	M					M				
P-15.1.5.3	Distance	M					M				

Table P-16: Position Report Parameter

Used in the following messages: UM: None

DM: 48

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-16.1	Position Report											PositionReport ::= SEQUENCE
P-16.1.1	Position current	—	—	—	—	—	M					[0] Position See P-15
P-16.1.2	Time at position current	—	—	—	—	—	M					[1] Time See P-24
P-16.1.3	Level	—	—	—	—	—	M					[2] Level See P-14
P-16.1.4	Fix next	—	—	—	—	—	O					[3] Position (Optional) See P-15
P-16.1.5	Time eta at fix next	—	—	—	—	—	O					[4] Time (Optional) See P-24
P-16.1.6	Fix next plus one	—	—	—	—	—	O					[5] Position (Optional) See P-15
P-16.1.7	Time eta at destination	—	—	—	—	—	O					[6] Time (Optional) See P-24
P-16.1.8	Remaining Fuel	—	—	—	—	—	O					[7] RemainingFuel (Optional)
P-16.1.9	Temperature	—	—	—	—	—	O					[8] Temperature (Optional)
P-16.1.10	Winds	—	—	—	—	—	O					[9] Winds (Optional)
P-16.1.11	Turbulence	—	—	—	—	—	O					[10] Turbulence (Optional)
P-16.1.12	Icing	—	—	—	—	—	O					[11] Icing (Optional)
P-16.1.13	Speed	—	—	—	—	—	O					[12] Speed (Optional) See P-22
P-16.1.14	Speed Ground	—	—	—	—	—	O					[13] SpeedGround (Optional)
P-16.1.15	Vertical Change	—	—	—	—	—	O					[14] VerticalChange (Optional)
P-16.1.16	Track angle	—	—	—	—	—	O					[15] Degrees (Optional) See P-4
P-16.1.17	Heading	—	—	—	—	—	O					[16] Degrees (Optional) See P-4
P-16.1.18	Distance	—	—	—	—	—	O					[17] Distance (Optional) See P-7
P-16.1.19	Humidity	—	—	—	—	—	O					[18] Humidity (Optional)
P-16.1.20	Reported Waypoint Position	—	—	—	—	—	O					[19] Position (Optional) See P-15
P-16.1.21	Reported Waypoint Time	—	—	—	—	—	O					[20] Time (Optional) See P-24
P-16.1.22	Reported Waypoint Level	—	—	—	—	—	O					[21] Level (Optional) See P-14
P-16.1.8	RemainingFuel											Time See P-24
P-16.1.9	Temperature											INTEGER (-100..100)
P-16.1.10	Winds											Winds ::= SEQUENCE
P-16.1.10.1	Wind Direction	—	—	—	—	—	M					WindDirection
P-16.1.10.2	Wind Speed	—	—	—	—	—	M					WindSpeed
P-16.1.10.1	WindDirection Degrees (1-360)/1											INTEGER (1..360)
P-16.1.10.2	Wind Speed											WindSpeed ::= CHOICE
P-16.1.10.2.1	Wind Speed English	—	—	—	—	—	C					[0] WindSpeedEnglish
P-16.1.10.2.2	Wind Speed Metric	—	—	—	—	—	C					[1] WindSpeedMetric
P-16.1.10.2.1	WindSpeedEnglish Knots (0-255)/1											INTEGER (0..255)
P-16.1.10.2.2	WindSpeedMetric Km/hour (0-511)/1											INTEGER (0..511)
P-16.1.11	Turbulence											Turbulence

Source: Chapter 4 - ASN.1														
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons			
P-16.1.11.1	Light	—	—	—	—	—	M					(0) light		
P-16.1.11.2	Moderate	—	—	—	—	—	M					(1) moderate		
P-16.1.11.3	Severe	—	—	—	—	—	M					(2) severe		
P-16.1.11.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility		
P-16.1.12	Icing											Icing ::= ENUMERATED		
P-16.1.12.1	Trace	—	—	—	—	—	M					(0) trace		
P-16.1.12.2	Light	—	—	—	—	—	M					(1) light		
P-16.1.12.3	Moderate	—	—	—	—	—	M					(2) moderate		
P-16.1.12.4	Severe	—	—	—	—	—	M					(3) severe		
P-16.1.14	SpeedGround (-50 to 2000 Knots)											INTEGER (-50..2000)		
P-16.1.15	Vertical Change											VerticalChange ::= SEQUENCE		
P-16.1.15.1	Vertical Direction	—	—	—	—	—	M					VerticalDirection		
P-16.1.15.2	Vertical Rate	—	—	—	—	—	M					VerticalRate	See P-26	
P-16.1.15.1	Vertical Direction											VerticalDirection ::= ENUMERATED		
P-16.1.15.1.1	Up	—	—	—	—	—	M					(0) up		
P-16.1.15.1.2	Down	—	—	—	—	—	M					(1) down		
P-16.1.15.2	Vertical Rate											VerticalRate ::= CHOICE		
P-16.1.15.2	Vertical Rate English	—	—	—	—	—	C					[0] VerticalRateEnglish		
P-16.1.15.2.2	Vertical Rate Metric	—	—	—	—	—	C					[1] VerticalRateMetric		
P-16.1.15.2.1	VerticalRateEnglish ft/min (0-30000)/10											INTEGER (0..3000)		
P-16.1.15.2.2	VerticalRateMetric m/min (0-10000)/10											INTEGER (0..1000)		
P-16.1.19	Humidity 0-100%											INTEGER (0..100)		

Table P-17: Procedure Name Parameters

Used in the following messages: UM: 73, 79, 80, 81, 83-86, 99

DM: 23, 24, 26, 40, 59

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-17.1	Procedure Name											ProcedureName ::= SEQUENCE
P-17.1.1	Procedure Type	M					M					[0] ProcedureType
P-17.1.2	Procedure	M					M					[1] Procedure
P-17.1.3	Procedure Transition	O					O					[2] ProcedureTransition (OPTIONAL)
P-17.1.1	Procedure Type											ProcedureType ::= ENUMERATED
P-17.1.1.1	Arrival	C					C					(0) arrival
P-17.1.1.2	Approach	C					C					(1) approach
P-17.1.1.3	Departure	C					C					(2) departure
P-17.1.2	Procedure											IA5String SIZE(1..20)
P-17.1.3	ProcedureTransition											IA5String SIZE(1..5)

Table P-18: Published Identifier Parameter

Used in the following messages:

UM: 8, 10, 12, 14, 16, 18, 22, 25, 27, 29, 42-63, 65, 68, 70, 73-80, 83-92, 97, 101, 104, 118, 121, 130, 149, 155, 181, 184-186, 188, 209, 210, 228

DM: 11, 12, 16, 22, 24, 26, 31, 33, 40, 42, 44, 45, 48, 59, 78, 104, 110, 111

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-18.1	Published Identifier											PublishedIdentifier ::= CHOICE	
P-18.1.1	Fix Name	M					M					[0] FixName	
P-18.1.2	Navaid	O					O					[1] Navaid	
P-18.1.1	Fix Name											FixName ::= SEQUENCE	
P-18.1.1.1	Fix	M					M					[0] Fix	
P-18.1.1.2	Latitude and Longitude	M					M					[1] LatitudeLongitude (OPTIONAL)	See P-12
P-18.1.1.1	Fix											IA5String SIZE(1..5)	
P-18.1.2	Navaid											Navaid ::= SEQUENCE	
P-18.1.2.1	Navaid Name	M					M					[0] NavaidName	
P-18.1.2.2	Latitude and Longitude	M					M					[1] LatitudeLongitude (OPTIONAL)	See P-12
P-18.1.2.1	NavaidName											IA5String SIZE(1..4)	

Table P-19: Route Clearance Index and Route Clearance Parameters

Used in the following messages: UM: 79, 80, 83, 85, 86

DM: 24, 26, 40, 59

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-19.1	RouteClearanceIndex											INTEGER (1..2)	
P-19.2	Route Clearance											RouteClearance ::= SEQUENCE	
P-19.2.1	Departure Airport	C					C					[0] Airport (OPTIONAL)	See P-1
P-19.2.2	Destination Airport	C					C					[1] Airport (OPTIONAL)	See P-1
P-19.2.3	Departure Runway	C					C					[2] Runway (OPTIONAL)	See P-21
P-19.2.4	Departure Procedure	C					C					[3] ProcedureName (OPTIONAL)	See P-17
P-19.2.5	Arrival Runway	C					C					[4] Runway (OPTIONAL)	See P-21
P-19.2.6	Approach Procedure	C					C					[5] ProcedureName (OPTIONAL)	See P-17
P-19.2.7	Arrival Procedure	C					C					[6] ProcedureName (OPTIONAL)	See P-17
P-19.2.8	Route Information	C					C					[7] SEQUENCE SIZE (1..128) OF RouteInformation (OPTIONAL)	See P-20
P-19.2.9	Additional Route Information	C					C					[8] RouteInformationAdditional (OPTIONAL)	
P-19.2.9	Route Information Additional											RouteInformationAdditional ::= SEQUENCE	
P-19.2.9.1	ATW Along Track Waypoint	C					C					[0] SEQUENCE SIZE (1..8) OF ATWAlongTrackWaypoint (OPTIONAL)	
P-19.2.9.2	Reporting Points	C					C					[1] ReportingPoints (OPTIONAL)	
P-19.2.9.3	Intercept Course From	C					C					[2] SEQUENCE SIZE (1..4) OF InterceptCourseFrom (OPTIONAL)	
P-19.2.9.4	Hold at waypoint	C					C					[3] SEQUENCE SIZE (1..8) OF Holdatwaypoint (OPTIONAL)	
P-19.2.9.5	Waypoint Speed Level	C					C					[4] SEQUENCE SIZE (1..32) OF WaypointSpeedLevel (OPTIONAL)	
P-19.2.9.6	RTA Required Time Arrival	C					C					[5] SEQUENCE SIZE (1..32) OF RTARequiredTimeArrival (OPTIONAL)	
P-19.2.9.1	ATW Along Track Waypoint											ATWAlongTrackWaypoint ::= SEQUENCE	
P-19.2.9.1.1	Position	M					M					[0] Position	See P-15
P-19.2.9.1.2	ATW Distance	M					M					[1] ATWDistance	
P-19.2.9.1.3	Speed	O					M					[2] Speed (OPTIONAL)	See P-22
P-19.2.9.1.4	ATW Level Sequence	O					M					[3] ATWLevelSequence (OPTIONAL)	
P-19.2.9.1.2	ATW Distance											ATWDistance ::= SEQUENCE	
P-19.2.9.1.2.1	ATW Distance Tolerance	M					M					ATWDistanceTolerance	
P-19.2.9.1.2.2	Distance	M					M					Distance	See P-7

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-19.2.9.1.2.1	ATW Distance Tolerance											ATWDistanceTolerance ::= ENUMERATED	
P-19.2.9.1.2.1.1	Plus	M					M					(0) plus	
P-19.2.9.1.2.1.2	Minus	M					M					(1) minus	
P-19.2.9.1.4	ATWLevelSequence											SEQUENCE SIZE (1..2) OF ATWLevel	
P-19.2.9.1.4.1	ATW Level											ATWLevel ::= SEQUENCE	
P-19.2.9.1.4.1.1	ATW Level Tolerance	M					M					ATWLevelTolerance	
P-19.2.9.1.4.1.2	Level	M					M					Level	See P-14
P-19.2.9.1.4.1.1	ATW Level Tolerance											ATWLevelTolerance ::= ENUMERATED	
P-19.2.9.1.4.1.1.1	At	C					M					(0) at	
P-19.2.9.1.4.1.1.2	At or above	C					M					(1) atorabove	
P-19.2.9.1.4.1.1.3	At or below	C					M					(2) atorbelow	
P-19.2.9.2	Reporting Points											ReportingPoints ::= SEQUENCE	
P-19.2.9.2.1	Lat Lon Reporting Points	M					M					[0] LatLonReportingPoints	
P-19.2.9.2.2	Degree Increment	O					O					[1] DegreeIncrement (OPTIONAL)	
P-19.2.9.2.1	Lat Lon Reporting Points											LatLonReportingPoints ::= CHOICE	
P-19.2.9.2.1.1	Latitude Reporting Points	M					M					[0] LatitudeReportingPoints	
P-19.2.9.2.1.2	Longitude Reporting Points	M					M					[1] LongitudeReportingPoints	
P-19.2.9.2.1.1	Latitude Reporting Points											LatitudeReportingPoints ::= SEQUENCE	
P-19.2.9.2.1.1.1	Latitude Direction	M					M					LatitudeDirection	
P-19.2.9.2.1.1.2	Latitude Degrees	M					M					LatitudeDegrees	
P-19.2.9.2.1.1.1	Latitude Direction											LatitudeDirection ::= ENUMERATED	
P-19.2.9.2.1.1.1.1	North	C					C					(0) north	
P-19.2.9.2.1.1.1.2	South	C					C					(1) south	
P-19.2.9.2.1.1.2	Latitude Degrees (0-90)/0.001											INTEGER (0..90000)	
P-19.2.9.2.1.2	Longitude Reporting Points											LongitudeReportingPoints ::= SEQUENCE	
P-19.2.9.2.1.2.1	Longitude Direction	M					M					LongitudeDirection	
P-19.2.9.2.1.2.2	Longitude Degrees	M					M					LongitudeDegrees	
P-19.2.9.2.1.2.1	Longitude Direction											LongitudeDirection ::= ENUMERATED	
P-19.2.9.2.1.2.1.1	East	C					C					(0) east	
P-19.2.9.2.1.2.1.1	West	C					C					(1) west	
P-19.2.9.2.1.2.2	LongitudeDegrees (0-180)/0.001											INTEGER (0..180000)	
P-19.2.9.2.2	DegreeIncrement (1-20)/1											INTEGER (1..20)	

Source: Chapter 4 - ASN.1													
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-19.2.9.3	Intercept Course From											InterceptCourseFrom ::= SEQUENCE	
P-19.2.9.3.1	From Selection	M					M					InterceptCourseFromSelection	
P-19.2.9.3.2	Degrees	M					M					Degrees	See P-4
P-19.2.9.3.1	Intercept Course From Selection											InterceptCourseFromSelection ::= CHOICE	
P-19.2.9.3.1.1	Published Identifier	C					C					[0] PublishedIdentifier	See P-18
P-19.2.9.3.1.2	Latitude and Longitude	C					C					[1] LatitudeLongitude	See P-18
P-19.2.9.3.1.3	Place Bearing Place Bearing	C					C					[2] PlaceBearingPlaceBearing	See P-26
P-19.2.9.3.1.4	Place Bearing Distance	C					C					[3] PlaceBearingDistance	See P-26
P-19.2.9.3.1.3	Place Bearing Place Bearing											SEQUENCE SIZE(2) OF PlaceBearing	
P-19.2.9.3.1.3.1	Place Bearing											PlaceBearing ::= SEQUENCE	
P-19.2.9.3.1.3.1.1	Published Identifier	M					M					PublishedIdentifier	See P-18
P-19.2.9.3.1.3.1.2	Degrees	M					M					Degrees	See P-4
P-19.2.9.3.1.4	Place Bearing Distance											PlaceBearingDistance ::= SEQUENCE	
P-19.2.9.3.1.4.1	Published Identifier	M					M					PublishedIdentifier	See P-18
P-19.2.9.3.1.4.2	Degrees	M					M					Degrees	See P-4
P-19.2.9.3.1.4.3	Distance	M					M					Distance	See P-7
P-19.2.9.4	Hold at Way Point											Holdatwaypoint ::= SEQUENCE	
P-19.2.9.4.1	Position	M					M					[0] Position	See P-15
P-19.2.9.4.2	Hold at way point speed low	O					O					[1] Speed (OPTIONAL)	See P-22
P-19.2.9.4.3	ATW Level	O					O					[2] ATWLevel (OPTIONAL)	
P-19.2.9.4.4	Hold at way point speed high	O					O					[3] Speed (OPTIONAL)	See P-22
P-19.2.9.4.5	Direction	O					O					[4] Direction (OPTIONAL)	See P-6
P-19.2.9.4.6	Degrees	O					O					[5] Degrees (OPTIONAL)	See P-4
P-19.2.9.4.7	Expect Further Clearance time	O					O					[6] Time (OPTIONAL)	See P-24
P-19.2.9.4.8	Leg Type	O					O					[7] LegType (OPTIONAL)	See P-13
P-19.2.9.4.3	ATW Level											ATWLevel ::= SEQUENCE	
P-19.2.9.4.3.1	ATW Level Tolerance	M					M					ATWLevelTolerance	
P-19.2.9.4.3.2	Level	M					M					Level	See P-14
P-19.2.9.4.3.1	ATW Level Tolerance											ATWLevelTolerance ::= ENUMERATED	
P-19.2.9.4.3.1.1	At	C					M					(0) at	
P-19.2.9.4.3.1.2	At or above	C					M					(1) atorabove	
P-19.2.9.4.3.1.3	At or below	C					M					(2) atorbelow	
P-19.2.9.5	Waypoint Speed Level											WaypointSpeedLevel ::= SEQUENCE	
P-19.2.9.5.1	Position	M					M					[0] Position	See P-14
P-19.2.9.5.2	Speed	O					O					[1] Speed (OPTIONAL)	See P-22
P-19.2.9.5.3	ATW Level Sequence	O					O					[2] ATWLevelSequence (OPTIONAL)	
P-19.2.9.5.3	ATWLevelSequence											SEQUENCE SIZE (1..2) OF ATWLevel	

Source: Chapter 4 - ASN.1														
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	Notes	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons			
P-19.2.9.5.3	ATW Level											ATWLevel ::= SEQUENCE		
P-19.2.9.5.3.1	ATW Level Tolerance	M					M					ATWLevelTolerance		
P-19.2.9.5.3.2	Level	M					M					Level	See P-14	
P-19.2.9.5.3.1	ATW Level Tolerance											ATWLevelTolerance ::= ENUMERATED		
P-19.2.9.5.3.1.1	At	M					M					(0) at		
P-19.2.9.5.3.1.2	At or above	M					M					(1) atorabove		
P-19.2.9.5.3.1.3	At or below	M					M					(2) atorbelow		
P-19.2.9.6	RTA Required Time Arrival											RTARequiredTimeArrival ::= SEQUENCE		
P-19.2.9.6.1	Position	M					M					[0] Position	See P-15	
P-19.2.9.6.2	RTA Time	M					M					[1] RTATime		
P-19.2.9.6.3	RTA Tolerance	O					M					[2] RTATolerance (OPTIONAL)		
P-19.2.9.6.2	RTA Time											RTATime ::= SEQUENCE		
P-19.2.9.6.2.1	Time	M					M					Time	See P-24	
P-19.2.9.6.2.2	Time Tolerance	M					M					TimeTolerance		
P-19.2.9.6.2.2	Time Tolerance											TimeTolerance ::= ENUMERATED		
P-19.2.9.6.2.2.1	At	C					M					(0) at		
P-19.2.9.6.2.2.2	At or After	C					M					(1) atorafter		
P-19.2.9.6.2.2.3	At or Before	C					M					(2) atorbefore		
P-19.2.9.6.3	RTATolerance Minutes (0.1-15.0)/0.1											INTEGER (1..150)		

Table P-20: Route Information Parameter

Used in the following messages: UM: 73, 79, 80, 83, 85, 86

DM: 24, 26, 40, 59

Source: Chapter 4 - ASN.1											
Ref No	Operational Elements	Send				Receive				ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons
P-20.1	Route Information										RouteInformation ::= CHOICE
P-20.1.1	Published Identifier	C					M				[0] PublishedIdentifier See P-18
P-20.1.2	Latitude and Longitude	C					M				[1] LatitudeLongitude See P-12
P-20.1.3	Place Bearing Place Bearing	C					M				[2] PlaceBearingPlaceBearing
P-20.1.4	Place Bearing Distance	C					M				[3] PlaceBearingDistance
P-20.1.5	ATS Route Designator	C					M				[4] ATSRouteDesignator
P-20.1.3	Place Bearing Place Bearing										SEQUENCE SIZE(2) OF PlaceBearing
P-20.1.3.1	Place Bearing										PlaceBearing ::= SEQUENCE
P-20.1.3.1.1	Published Identifier	M					M				PublishedIdentifier See P-18
P-20.1.3.1.2	Degrees	M					M				Degrees See P-6
P-20.1.4	Place Bearing Distance										PlaceBearingDistance ::= SEQUENCE
P-20.1.4.1	Published Identifier	M					M				PublishedIdentifier See P-18
P-20.1.4.2	Degrees	M					M				Degrees See P-6
P-20.1.4.3	Distance	M					M				Distance See P-7
P-20.1.5	ATSRouteDesignator										IA5String SIZE(2..7)

Table P-21: Runway Parameter

Used in the following messages: UM: 73, 79, 80, 83, 85, 86, 214

DM: 23, 24, 26, 40, 59

Source: Chapter 4 - ASN.1														Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements		
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons			
P-21.1	Runway											Runway ::= SEQUENCE		
P-21.1.1	Runway Direction	M					M					RunwayDirection		
P-21.1.2	Runway Configuration	M					M					RunwayConfiguration		
P-21.1.1	RunwayDirection											INTEGER (1.36)		
P-21.1.2	Runway Configuration											RunwayConfiguration ::= ENUMERATED		
P-21.1.2.1	Left	C					C					(0) left		
P-21.1.2.2	Right	C					C					(1) right		
P-21.1.2.3	Center	C					C					(2) centre		
P-21.1.2.4	None	C					C					(3) none		

Table P-22: Speed Parameter

Used in the following messages: UM: 55-57, 61, 63, 79, 80, 83, 85, 86, 100-106, 108-115, 151, 188, 189

DM: 18, 19, 24, 26, 34, 39, 40, 49, 50, 59, 83, 84, 113

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-22.1	Speed											Speed ::= CHOICE
P-22.1.1	Speed Indicated	C					C					[0] SpeedIndicated
P-22.1.2	Speed Indicated Metric	C					C					[1] SpeedIndicatedMetric
P-22.1.3	Speed True	C					C					[2] SpeedTrue
P-22.1.4	Speed True Metric	C					C					[3] SpeedTrueMetric
P-22.1.5	Speed Ground	C					C					[4] SpeedGround
P-22.1.6	Speed Ground Metric	C					C					[5] SpeedGroundMetric
P-22.1.7	Speed Mach	C					C					[6] SpeedMach
P-22.1.1	Speed Indicated (0 to 400 Knots)											INTEGER (0..400)
P-22.1.2	SpeedIndicatedMetric (0 to 800 Km/h)											INTEGER (0..800)
P-22.1.3	SpeedTrue (0 to 2000 Knots)											INTEGER (0..2000)
P-22.1.4	SpeedTrueMetric (0 to 4000 Km/h)											INTEGER (0..4000)
P-22.1.5	SpeedGround (-50 to 2000 Knots)											INTEGER (-50..2000)
P-22.1.6	SpeedGroundMetric (-100 to 4000 Km/h)											INTEGER (-100..4000)
P-22.1.7	SpeedMach (0.5 to 4.0 Mach in units of 0.001 Mach)											INTEGER (500..4000)

Used in the following messages:	UM:	134
	DM:	113

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Table P-24: Time Parameter

Used in the following messages:

UM:	7, 9, 11, 13, 15, 17, 21, 24, 26, 28, 51-54, 58-60, 62, 63, 66, 69, 71, 73, 76, 79, 80, 83, 85, 86, 89, 93, 100, 103, 119, 122, 150, 184, 192, 226
DM:	13, 14, 17, 24, 26, 40, 43, 46, 48, 57, 59, 78, 81, 83, 85, 104, 109, 111

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-24.1	Time											Time ::= SEQUENCE a
P-24.1.1	Time Hours	M					M					TimeHours
P-24.1.2	Time Minutes	M					M					TimeMinutes
P-24.1.1	TimeHours											INTEGER (0..23)
P-24.1.2	TimeMinutes											INTEGER (0..59)

Notes:

- a In addition to the listed message element, time is a component of ATCMessageHeader

Table P-25: Unit Name Parameter

Used in the following messages: UM: 73, 117-122

DM: 89

Source: Chapter 4 - ASN.1												
Ref No	Operational Elements	Send					Receive					Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	
P-25.1	Unit Name											UnitName ::= SEQUENCE
P-25.1.1	Facility Designation	M					M					[0] FacilityDesignation
P-25.1.2	Facility Name	O					M					[1] FacilityName (Optional)
P-25.1.3	Facility Function	M					M					[2] FacilityFunction
P-25.1.1	Facility Designation											IA5String SIZE(4..8)
P-25.1.2	Facility Name											IA5String SIZE(3..18)
P-25.1.3	Facility Function											FacilityFunction ::= ENUMERATED
P-25.1.3.1	Center	C					M					(0) center
P-25.1.3.2	Approach	C					M					(1) approach
P-25.1.3.3	Tower	C					M					(2) tower
P-25.1.3.4	Final	C					M					(3) final
P-25.1.3.5	Ground Control	C					M					(4) groundControl
P-25.1.3.6	Clearance Delivery	C					M					(5) clearanceDelivery
P-25.1.3.7	Departure	C					M					(6) departure
P-25.1.3.8	Control	C					M					(7) control
P-25.1.3.9	Radio	C					M					(8) radio
P-25.1.3.10	Use of Extensibility	X					X					Use of Extensibility

Table P-26: Vertical Rate Parameter

Used in the following messages: UM: 171-174
DM: 48

Source: Chapter 4 - ASN.1													Notes
Ref No	Operational Elements	Send					Receive					ASN.1 Protocol Elements	
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
P-26.1	Vertical Rate											VerticalRate ::= CHOICE	
P-26.1.1	Vertical Rate English	C					C					[0] VerticalRateEnglish	
P-26.1.2	Vertical Rate Metric	C					C					[1] VerticalRateMetric	
P-26.1.1	VerticalRateEnglish ft/min (0-30000)/10											INTEGER (0..3000)	
P-26.1.2	VerticalRateMetric m/min (0-10000)/10											INTEGER (0..1000)	