

# **Annex A**

CM 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)**

Toulouse 25th September - 4th October 2001

**Agenda Item 6 : PICS and Interoperability**

### **Airborne Context Management Edition 3 PICS/OICS Proforma**

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#### **SUMMARY**

This working paper contains the OPLINKP Profile PICS/OICS proforma tables for CM Airborne Version 2 (Doc 9705 Third 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 (Day Month Year)	
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	
	<b>Implementation Information</b>	<b>Implementation Details</b>
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: CM Protocol Identification

Ref No		OPLINKP	Profile	Implementation
I-3.1	Protocol Standard (Title, reference, date)	ICAO Doc 9705 Edition Three - 2001		
I-3.2	CM Protocol Version	Version 1 Version 2		
I-3.3	Addenda, amendments and corrigenda implemented			
I-3.4	Defect Reports implemented			

Table S-1: CM Protocol Versions and Options - Airborne ASE

Source: Chapter 8 - Subsetting Rules		OPLINK Profile	Profile Status	IMP Support	Associated Predicate	Notes
Ref No	Protocol Option					
S-1.1	CM Protocol Version 1	C.1			V1	
S-1.2	CM Protocol Version 2	C.1			V2	a
S-1.2.1	CM Protocol Version 2 Emulating Version 1	C.2			V2E1	
S-1.3	CM-air-ASE	M			CM/Air	
S-1.4	CM-ground-ASE	Not applicable			CM/Ground	
S-1.5	Air CM update supported	O			A-UP-FU	
S-1.6	Air CM contact supported	O			A-CO-FU	
S-1.7	Air CM server facility query initiation supported	O			A-SF-FU	
S-1.8	Air CM server facility update supported	O			A-SU-FU	
S-1.9	Air CM maintain dialogue supported	M			—	
S-1.10	Ground CM maintain dialogue supported	Not applicable to Airborne Systems			—	
S-1.11	Ground CM update supported				G-UP-FU	
S-1.12	Ground CM contact supported				G-CO-FU	
S-1.13	Ground CM forward receiving user supported				G-FO-FU	
S-1.14	Ground CM forward initiating user supported				G-FO-IN	
S-1.15	Ground CM server facility update initiation supported				G-SF-FU	
S-1.16	Ground CM server facility query supported				G-SQ-FU	
	Security Option					
S-1.17	Security	C.3			SEC	
S-1.18	No security	C.4			NOSEC	

**OPLINKP Profile:**

- C.1 An implementation shall support one and only one of these two options.
- C.2 If Version 2 (V2) supported then **O** else —
- C.3 If Version 2 (V2) supported then **M** else —
- C.4 If Version 2 (V2) supported then **O** else **M**

**Notes:**

- a Support for CM version 2 includes the capability to emulate CM version 1

Table S-2: Supported CM Service Primitives

Source: Chapter 3 - Abstract Service		Sender (req, [cnf])			Receiver (ind, [rsp])			Notes
Ref No	Service Primitives	OPLINKP Status	Profile Status	IMP Support	OPLINKP Status	Profile Status	IMP Support	
S-2.1	CM-logon	M			—	—	—	See Table S-3
S-2.2	CM-server-facility-query	C.1			C.1			See Table S-4
S-2.3	CM-update	—	—	—	M			See Table S-5
S-2.4	CM-server-facility-update	—	—	—	C.2			See Table S-6
S-2.5	CM-contact	—	—	—	M			See Table S-7
S-2.6	CM-end	—	—	—	M			See Table S-8
S-2.7	CM-forward	Not applicable to Airborne Systems						
S-2.8	CM-user-abort	M			M			See Table S-9
S-2.9	CM-provider-abort	—	—	—	M			See Table S-10

**OPLINKP Profile:**

- C.1 If CM Version 2 (V2) and CM Server Facility Query (A-SF-FU) then **M** else —
- C.2 If CM Version 2 (V2) and CM Server Facility Update (A-SU-FU) then **M** else —



Table S-3: CM Logon Service - Airborne User (Request, Confirmation)

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-3.1	Capability of the airborne system to specify a ground system's Facility Designation							
S-3.1.1	ICAO facility designation = IA5 String SIZE(4..8)	M						
S-3.2	Capability of the airborne system to specify its own Aircraft Address							
S-3.2.1	Aircraft Address = Bit String SIZE(24)	M		—		—		
S-3.3	Capability of the airborne system to understand CM ASE Version Number							
S-3.3.1	Version Number = INTEGER (1..255)	M						
S-3.4	Capability of the airborne system to specify a logon request							
S-3.4.1	Logon Request	M					See CMLogonRequest (Table P-1)	
S-3.5	Capability of the airborne system to understand a logon response							
S-3.5.1	Logon Response	C.1					See CMLogonResponse (Table P-1)	
S-3.5.2	Secure Logon Response	C.2					See CMSecureLogonResponse (Table P-2)	
S-3.6	Capability of the airborne system to request a Class of Communication Service							
S-3.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	O						
S-3.7	Capability of the airborne system to understand a maintain dialogue indication							
S-3.7.1	'Maintain'	M						
S-3.8	Capability of the airborne system to specify security							
S-3.8.1	One of the abstract values 'Exchange supporting key management' or 'No security'	C.2						
S-3.9	Capability of the airborne system to specify an emulated version							
S-3.9.1	CM Air ASE Version Number = INTEGER (1..255)	C.2						

**OPLINKP Profile:**

- C.1 If CM Version 1 (V1) or Version 2 Emulating Version 1 (V2E1) then **M** else —
- C.2 If CM Version 2 (V2) then **M** else —

Table S-4: CM Server Facility Query Service - Airborne User (Request, Confirmation) (Version 2)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
Ref No	Operational Elements	OPLINKP Profile	Operational Use		Implementation			
			Status	Profile Cons	Status	Cons		
S-4.1	Capability of the airborne system to specify a ground system's Facility Designation							
S-4.1.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1						a
S-4.2	Capability of the airborne system to specify its own Aircraft Address							
S-4.2.1	Aircraft Address = Bit String SIZE(24)	C.1		—		—		a
S-4.3	Capability of the airborne system to specify a Server Facility Request							
S-4.3.1	Server Facility Query Request	C.1					See CMServerFacilityQueryRequest (Table P-2)	
S-4.4	Capability of the airborne system to understand a Server Facility Response							
S-4.4.1	Server Facility Query Response	C.1					See CMServerFacilityQueryResponse (Table 2)	
S-4.5	Capability of the airborne system to request a Class of Communication Service							
S-4.5.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.2						
S-4.6	Capability of the airborne system to understand a maintain dialogue indication							
S-4.6.1	'Maintain'	C.1						
S-4.7	Capability of the airborne system to specify security							
S-4.7.1	One of the abstract values 'Exchange supporting key management' or 'No security'	C.1						a

**OPLINKP Profile:**

- C.1 If CM Version 2 and Server Facility Query (A-SF-FU) supported then **M** else —  
 C.2 If CM Version 2 and Server Facility Query (A-SF-FU) supported then **O** else —

**Notes:**

- a This parameter is not present if there is an existing CM dialogue.

Table S-5: CM Update Service - Airborne User (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-5.1	Aircraft Address	Not visible to Airborne User						
S-5.1.1	Aircraft Address = Bit String SIZE(24)							
S-5.2	Capability of the airborne system to recognise and understand a ground system's Facility Designation							
S-5.2.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1					a	
S-5.3	Capability of the airborne system to understand update information							
S-5.3.1	Update Information	C.1					See CMUpdate (Table P-1)	
S-5.4	Class of Communication Service	Not visible to Airborne User						
S-5.4.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'							
S-5.5	Security Required							
S-5.5.1	One of the abstract values 'Exchange supporting key management' or 'No security'							

**OPLINKP Profile:**C.1 If CM Update (A-UP-FU) supported then **M** else —**Notes:**

a This parameter is not present if there is an existing CM dialogue

Table S-6: CM Server Facility Update Service - Airborne User (Indication) (Version 2)

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	Aircraft Address	Not visible to Airborne User											
S-6.1.1	Aircraft Address = Bit String SIZE(24)												
S-6.2	Capability of the airborne system to recognise and understand a ground system's Facility Designation												
S-6.2.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1					a						
S-6.3	Capability of the airborne system to understand server facility update information												
S-6.3.1	Server Facility Update Information	C.1					See CMServerFacilityUpdate (Table P-2)						
S-6.4	Class of Communication Service	Not visible to Airborne User											
S-6.4.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'												
S-6.5	Security Required												
S-6.5.1	One of the abstract values 'Exchange supporting key management' or 'No security'												

**OPLINKP Profile:**C.1 If CM Server Facility Update (A-SU-FU) supported then **M** else —**Notes:**

a This parameter is not present if there is an existing CM dialogue

Table S-7: CM Contact Service - Airborne 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-7.1	Aircraft Address	Not visible to Airborne User						
S-7.1.1	Aircraft Address = Bit String SIZE(24)							
	Capability of the airborne system to recognise and understand a ground system's Facility Designation							
S-7.2.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1						a
	Capability of the airborne system to understand a contact request							
S-7.3.1	Contact Request	C.1					See CMContactRequest (Table P-1)	
	Capability of the airborne system to specify a contact response							
S-7.4.1	Contact Response	C.1					See CMContactResponse (Table P-1)	
	Class of Communication Service	Not visible to Airborne User						
S-7.5.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'							
S-7.6	Security Required							
S-7.6.1	One of the abstract values 'Exchange supporting key management' or 'No security'							

**OPLINKP Profile:**C.1 If Contact (A-CO-FU) supported then **M** else —**Notes:**

a This parameter is not present if there is an existing CM dialogue

Table S-8: CM End Service - Airborne User (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-8.1	Capability of the airborne system to understand an End Indication	M						

Table S-9: CM User Abort Service - 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 request a user abort	M						
S-9.2	Capability of the airborne system to receive a user abort	M						

Table S-10: CM Provider Abort Service - Airborne User (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-10.1	Capability of the airborne system to receive a provider abort							
S-10.1.1	Reason	M					See CMAbortReason (Table P-1)	



Table S-13: CM Technical Timers

Source: Chapter 5 - Protocol Definition			OICS						Notes
			Operational Use						
Ref No	CM Service	Timer	OPLINKP Profile		Profile		Implementation		
			Status	Suggested Value	Status	Suggested Value	Status	Value Used	
S-13.1	CM Logon								
S-13.1.1		t-logon	M	4 minutes					
S-13.2	CM Server Facility Query								
S-13.2.1		t-sv_query	C.1	6 minutes					
S-13.3	CM Update								Not used by Airborne Systems
S-13.3.1		t-update	C.2	4 minutes					
S-13.4	CM Server Facility Update								
S-13.4.1		t-update	C.3	4 minutes					
S-13.5	CM Contact								
S-13.5.1		t-contact	C.4	8 minutes					
S-13.6	CM Forward								
S-13.6.1		t-forward	C.5	4 minutes					
S-13.7	CM End								
S-13.7.1		t-end	C.6	4 minutes					

Not used  
by  
Airborne Systems

**OPLINKP Profile:**

- C.1 If Server Facility Query (A-SF-FU) supported then **M** else —
- C.2 If Update (G-UP-FU) supported then **M** else —
- C.3 If Server Facility Update (G-SF-FU) supported then **M** else —
- C.4 If Contact (G-CO-FU) supported then **M** else —
- C.5 If Forward Initiator (G-FO-IN) supported then **M** else —
- C.6 If Maintain Dialogue supported then **M** else —

Table M-1: CM Messages (top level) (Version 1)

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		
<b>M-1.1</b>	<b>CM Aircraft Messages</b>											<b>CM Aircraft Message ::= CHOICE</b>	
M-1.1.1	CM Logon Request	M					—	—	—	—	—	[0] CMLogonRequest	See P-1
M-1.1.2	CM Contact Response	C.2					—	—	—	—	—	[1] CMContactResponse	See P-1
M-1.1.3	CM Abort Reason	M					—	—	—	—	—	[2] CMAbortReason	See P-1
M-1.1.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	See P-1
<b>M-1.2</b>	<b>CM Ground Messages</b>											<b>CM Ground Message ::= CHOICE</b>	
M-1.2.1	CM Logon Response	—	—	—	—	—	M					[0] CMLogonResponse	See P-1
M-1.2.2	CM Update	—	—	—	—	—	C.1					[1] CMUpdate	See P-1
M-1.2.3	CM Contact Request	—	—	—	—	—	C.2					[2] CMContactRequest	See P-1
M-1.2.4	CM Forward Request		Not used by Airborne Systems					Not used by Airborne Systems				[3] CMForwardRequest	See P-1
M-1.2.5	CMAbortReason	—	—	—	—	—	M					[4] CMAbortReason	See P-1
M-1.2.6	CM Forward Response		Not used by Airborne Systems					Not used by Airborne Systems				[5] CMForwardResponse	See P-1
M-1.2.7	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	See P-1

**OPLINKP Profile:**

- C.1 If CM Update (A-UP-FU) supported then **M** else —  
C.2 If CM Contact (A-CO-FU) supported then **M** else —

Table M-2: CM Messages (top level) (Version 2)

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		
<b>M-2.1</b>	<b>CM Aircraft Messages</b>											<b>CM Aircraft Message ::= CHOICE</b>	
M-2.1.1	CM Logon Request	M					—	—	—	—	—	[0] CMLogonRequest	See P-1
M-2.1.2	CM Contact Response	C.2					—	—	—	—	—	[1] CMContactResponse	See P-1
M-2.1.3	CM Abort Reason	M					—	—	—	—	—	[2] CMAbortReason	See P-1
M-2.1.4	Use of Extensibility	M					—	—	—	—	—	Use of Extensibility	See P-1
M-2.1.5	CM Server Facility Query Request	C.4					—	—	—	—	—	[3] CMServerFacilityQueryRequest	See P-2
<b>M-2.2</b>	<b>CM Ground Messages</b>											<b>CM Ground Message ::= CHOICE</b>	
M-2.2.1	CM Logon Response	—	—	—	—	—	M					[0] CMLogonResponse	See P-1
M-2.2.2	CM Update	—	—	—	—	—	C.1					[1] CMUpdate	See P-1
M-2.2.3	CM Contact Request	—	—	—	—	—	C.2					[2] CMContactRequest	See P-1
M-2.2.4	CM Forward Request	Not used by Airborne Systems					Not used by Airborne Systems					[3] CMForwardRequest	See P-1
M-2.2.5	CMAbortReason	—	—	—	—	—	M					[4] CMAbortReason	See P-1
M-2.2.6	CM Forward Response	Not used by Airborne Systems					Not used by Airborne Systems					[5] CMForwardResponse	See P-1
M-2.2.7	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	See P-1
M-2.2.8	CM Server Facility Query Response	—	—	—	—	—	C.3					[6] CMServerFacilityQueryResponse	See P-2
M-2.2.9	CM Server Facility Update	—	—	—	—	—	C.4					[7] CMServerFacilityUpdate	See P-2
M-2.2.10	CM Secure Logon Response	—	—	—	—	—	M					[8] CMSecureLogonResponse	See P-2
M-2.2.11	CM Secure Update	—	—	—	—	—	C.1					[9] CMSecureUpdate	See P-2
M-2.2.12	CM Enhanced Forward Request	Not used by Airborne Systems					Not used by Airborne Systems					[10] CMEnhancedForwardRequest	See P-2

**OPLINKP Profile:**

- C.1 If CM Update (A-UP-FU) supported then **M** else —
- C.2 If CM Contact (A-CO-FU) supported then **M** else —
- C.3 If Server Facility Query (A-SF-FU) supported then **M** else —
- C.4 If Server Facility Update (A-SU-FU) supported then **M** else —

Table P-1: CM Version 1 Message Components

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
<b>P-1.1</b>	<b>CM Abort Reason</b>											<b>CMAbortReason ::= ENUMERATED</b>	
P-1.1.1	Timer expired	M					M					(0) timer-expired	
P-1.1.2	Undefined error	M					M					(1) undefined-error	
P-1.1.3	Invalid PDU	M					M					(2) invalid-PDU	
P-1.1.4	Protocol Error	M					M					(3) protocol-error	
P-1.1.5	Dialogue acceptance not permitted	M					M					(4) dialogue-acceptance-not-permitted	
P-1.1.6	Dialogue end not accepted	M					M					(5) dialogue-end-not-accepted	
P-1.1.7	Communication service error	M					M					(6) communication-service-error	
P-1.1.8	Communication service failure	M					M					(7) communication-service-failure	
P-1.1.9	Invalid QOS parameter	M					M					(8) invalid-QOS-parameter	
P-1.1.10	Expected PDU missing	M					M					(9) expected-PDU-missing	
P-1.1.11	Use of Extensibility	X					M					Use of Extensibility	
<b>P-1.2</b>	<b>CM Contact Request</b>											<b>CMContactRequest ::= SEQUENCE</b>	
P-1.2.1	Facility Designation	—	—	—	—	—	M					FacilityDesignation	
P-1.2.2	Address	—	—	—	—	—	M					LongTsap	
P-1.2.1	FacilityDesignation											<b>IA5String SIZE(4..8)</b>	
<b>P-1.2.2</b>	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-1.2.2.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-1.2.2.2	Short TSAP	—	—	—	—	—	M					ShortTsap	
<b>P-1.2.2.2</b>	<b>Short TSAP</b>											<b>ShortTsap ::= SEQUENCE</b>	
P-1.2.2.2.1	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-1.2.2.2.2	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	
<b>P-1.3</b>	<b>CM Contact Response</b>	M					—	—	—	—	—	<b>Response</b>	
<b>P-1.3</b>	<b>Response</b>											<b>Response</b>	
P-1.3.1	Contact Successful	M					—	—	—	—	—	(0) contactSuccess	
P-1.3.2	Contact Not Successful	M					—	—	—	—	—	(1) contactNotSuccessful	
<b>P-1.4</b>	<b>CM Forward Request</b>		Not used by Airborne Systems					Not used by Airborne Systems				<b>CMLogonRequest</b>	
<b>P-1.5</b>	<b>CM ForwardResponse</b>											<b>CMForwardResponse ::= ENUMERATED</b>	
P-1.5.1	Success											(0) success	
P-1.5.2	Incompatible version		Not used by Airborne Systems					Not used by Airborne Systems				(1) incompatible-version	
P-1.5.3	Service not supported											(2) service-not-supported	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINK Profile	Profile Status	Cons	Implementation Status	Cons	OPLINK Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-1.6	CM Logon Request											CMLogonRequest ::= SEQUENCE	
P-1.6.1	Aircraft Flight Identification	M					—	—	—	—	—	[0] AircraftFlightIdentification	
P-1.6.2	CM Long TSAP	M					—	—	—	—	—	[1] LongTsap	
P-1.6.3	Ground Initiated Applications	O					—	—	—	—	—	[2] SEQUENCE SIZE(1..256) OF AEQualifierVersionAddress (OPTIONAL)	
P-1.6.4	Air Only Initiated Applications	O					—	—	—	—	—	[3] SEQUENCE SIZE(1..256) OF AEQualifierVersion (OPTIONAL)	
P-1.6.5	Facility Designation	O					—	—	—	—	—	[4] FacilityDesignation (OPTIONAL)	
P-1.6.6	Departure Airport	O					—	—	—	—	—	[5] Airport (OPTIONAL)	
P-1.6.7	Destination Airport	O					—	—	—	—	—	[6] Airport (OPTIONAL)	
P-1.6.8	Departure Date and Time (ETD)	O					—	—	—	—	—	[7] DateTime (OPTIONAL)	
P-1.6.1	AircraftFlightIdentification											IA5String SIZE(2..8)	
P-1.6.2	Long TSAP											LongTsap ::= SEQUENCE	
P-1.6.2.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-1.6.2.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
P-1.6.2.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-1.6.2.2.1	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-1.6.2.2.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
P-1.6.3	AE Qualifier Version Address											AEQualifierVersionAddress ::= SEQUENCE	
P-1.6.3.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-1.6.3.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-1.6.3.3	AP Address	M					—	—	—	—	—	APAddress	
P-1.6.3.3	Application Address											APAddress ::= CHOICE	
P-1.6.3.3.1	Long TSAP	C					—	—	—	—	—	[0] LongTsap	
P-1.6.3.3.2	Short TSAP	C					—	—	—	—	—	[1] ShortTsap	
P-1.6.3.3.1	Long TSAP											LongTsap ::= SEQUENCE	
P-1.6.3.3.1.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-1.6.3.3.1.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
P-1.6.3.3.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-1.6.3.3.2.1	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-1.6.3.3.2.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
P-1.6.4	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-1.6.4.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-1.6.4.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-1.6.5	FacilityDesignation											IA5String SIZE(4..8)	
P-1.6.6/7	Airport											IA5String SIZE(4)	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINK Profile	Profile Status	Cons	Implementation Status	Cons	OPLINK Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-1.6.8	Date and Time											DateTime ::= SEQUENCE	
P-1.6.8.1	Date	M					—	—	—	—	—	Date	
P-1.6.8.2	Time	M					—	—	—	—	—	Time	
P-1.6.8.1	Date											Date ::= SEQUENCE	
P-1.6.8.1.1	Year	M					—	—	—	—	—	Year	
P-1.6.8.1.2	Month	M					—	—	—	—	—	Month	
P-1.6.8.1.3	Day	M					—	—	—	—	—	Day	
P-1.6.8.1.1	Year											INTEGER (1996..2095)	
P-1.6.8.1.2	Month											INTEGER (1..12)	
P-1.6.8.1.3	Day											INTEGER (1..31)	
P-1.6.8.2	Time											Time ::= SEQUENCE	
P-1.6.8.2.1	Time in Hours	M					—	—	—	—	—	Timehours	
P-1.6.8.2.2	Time in Minutes	M					—	—	—	—	—	Timeminutes	
P-1.6.8.2.1	Timehours											INTEGER (0..23)	
P-1.6.8.2.2	Timeminutes											INTEGER (0..59)	
P-1.7	CM Logon Response											CMLogonResponse ::= SEQUENCE	
P-1.7.1	Air Initiated Applications	—	—	—	—	—	M					[0] SEQUENCE SIZE(1..256) OF AEQualifierVersionAddress (OPTIONAL)	
P-1.7.2	Ground Only Initiated Applications	—	—	—	—	—	M					[1] SEQUENCE SIZE(1..256) OF AEQualifierVersion (OPTIONAL)	
P-1.7.1	AE Qualifier Version Address											AEQualifierVersionAddress ::= SEQUENCE	
P-1.7.1.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-1.7.1.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-1.7.1.3	AP Address	—	—	—	—	—	M					APAddress	
P-1.7.1.3	Application Address											APAddress ::= CHOICE	
P-1.7.1.3.1	Long TSAP	—	—	—	—	—	M					[0] LongTsap	
P-1.7.1.3.2	Short TSAP	—	—	—	—	—	M					[1] ShortTsap	
P-1.7.1.3.1	Long TSAP											LongTsap ::= SEQUENCE	
P-1.7.1.3.1.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-1.7.1.3.1.2	Short TSAP	—	—	—	—	—	M					ShortTsap	
P-1.7.1.3.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-1.7.1.3.2.1	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-1.7.1.3.2.2	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	
P-1.7.2	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-1.7.2.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-1.7.2.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-1.8	CM Update	—	—	—	—	—	M					CMLogonResponse	
P-1.9	AE Qualifier											INTEGER (0..255)	
P-1.10	VersionNumber											INTEGER (1..255)	

**Notes:**

- a Although this element is optional in ASN.1, it must be supported

Table P-2: CM Version 2 Message Components

Source: Chapter 4 - ASN.1												PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
<b>P-2.1</b>	<b>CM Enhanced Forward Request</b>											<b>CMEnhancedForwardRequest ::= SEQUENCE</b>	
P-2.1.1	CM Version Number	Not used by Airborne Systems					Not used by Airborne Systems					VersionNumber	
P-2.1.2	CM Forward Request											CMLogonRequest	
P-2.1.3	Use of Extensibility											Use of Extensibility	
<b>P-2.2</b>	<b>CM Secure Logon Response</b>											<b>CMSecureLogonResponse ::= SEQUENCE</b>	
P-2.2.1	Facility Designation	—	—	—	—	—	M					[0] FacilityDesignation (OPTIONAL)	
P-2.2.2	Secure Air Initiated Applications	—	—	—	—	—	M					[1] SEQUENCE SIZE(1..256) OF SecAir (OPTIONAL)	
P-2.2.3	Secure Ground Only Initiated Applications	—	—	—	—	—	M					[2] SEQUENCE SIZE(1..256) OF SecGnd (OPTIONAL)	
P-2.2.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
<b>P-2.2.2</b>	<b>SecAir</b>											<b>SecAir ::= SEQUENCE</b>	
P-2.2.2.1	Application Information	—	—	—	—	—	M					[0] AEQualifierVersionAddress	
P-2.2.2.2	Public Key	—	—	—	—	—	M					[1] PublicKey (OPTIONAL)	a
P-2.2.2.3	Domain Flag	—	—	—	—	—	M					[2] DomainFlag (OPTIONAL)	
P-2.2.2.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
<b>P-2.2.2.1</b>	<b>AE Qualifier Version Address</b>											<b>AEQualifierVersionAddress ::= SEQUENCE</b>	
P-2.2.2.1.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-2.2.2.1.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-2.2.2.1.3	AP Address	—	—	—	—	—	M					APAddress	
<b>P-2.2.2.1.3</b>	<b>Application Address</b>											<b>APAddress ::= CHOICE</b>	
P-2.2.2.1.3.1	Long TSAP	—	—	—	—	—	M					[0] LongTsap	
P-2.2.2.1.3.2	Short TSAP	—	—	—	—	—	M					[1] ShortTsap	
<b>P-2.2.2.1.3.1</b>	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-2.2.2.1.3.1.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-2.2.2.1.3.1.2	Short TSAP	—	—	—	—	—	M					ShortTsap	
<b>P-2.2.2.1.3.1.2</b>	<b>Short TSAP</b>											<b>ShortTsap ::= SEQUENCE</b>	
P-2.2.2.1.3.1.2.1	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.2.2.1.3.1.2.2	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	
<b>P-2.2.2.2</b>	<b>Public Key</b>											<b>PublicKey ::= SEQUENCE</b>	
P-2.2.2.2.1	Sequence Count	—	—	—	—	—	M					SIZE(1,	
P-2.2.2.2.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.2.2.2.3	String Length	—	—	—	—	—	M					OCTET STRING (SIZE(43,	
P-2.2.2.2.4	Use of Extensibility	—	—	—	—	—	M					...)	
<b>P-2.2.2.3</b>	<b>Domain Flag</b>											<b>DomainFlag ::= SEQUENCE</b>	
P-2.2.2.3.1	Sequence Count	—	—	—	—	—	M					SIZE(1, BOOLEAN	



Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.2.2.2.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.2.3	<b>SecGnd</b>											<b>SecGnd ::= SEQUENCE</b>	
P-2.2.3.1	Application Information	—	—	—	—	—	M					[0] AEQualifierVersion	
P-2.2.3.2	Public Key	—	—	—	—	—	M					[1] PublicKey (OPTIONAL)	a
P-2.2.3.3	Domain Flag	—	—	—	—	—	M					[2] DomainFlag (OPTIONAL)	
P-2.2.3.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
P-2.2.3.1	<b>AE Qualifier Version</b>											<b>AEQualifierVersion ::= SEQUENCE</b>	
P-2.2.3.1.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-2.2.3.1.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-2.2.3.2	<b>Public Key</b>											<b>PublicKey ::= SEQUENCE</b>	
P-2.2.3.2.1	Sequence Count	—	—	—	—	—	M					SIZE(1,	
P-2.2.3.2.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.2.3.2.3	String Length	—	—	—	—	—	M					OCTET STRING (SIZE(43,	
P-2.2.3.2.4	Use of Extensibility	—	—	—	—	—	M					...)	
P-2.2.3.3	<b>Domain Flag</b>											<b>DomainFlag ::= SEQUENCE</b>	
P-2.2.3.2.1	Sequence Count	—	—	—	—	—	M					SIZE(1, BOOLEAN	
P-2.2.3.2.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.3	<b>CM Secure Update</b>	—	—	—	—	—	M					<b>CMSecureLogonResponse</b>	
P-2.4	<b>CM Server Facility Query Request</b>											<b>CMServerFacilityQueryRequest ::= SEQUENCE</b>	
P-2.4.1	Aircraft Flight Identification	M					—	—	—	—	—	[0] AircraftFlightIdentification	
P-2.4.2	CM Long TSAP	M					—	—	—	—	—	[1] LongTsap	
P-2.4.3	Ground Initiated Applications	O					—	—	—	—	—	[2] SEQUENCE SIZE(1..256) OF AEQualifierVersionAddress (OPTIONAL)	
P-2.4.4	Air Only Initiated Applications	O					—	—	—	—	—	[3] SEQUENCE SIZE(1..256) OF AEQualifierVersion (OPTIONAL)	
P-2.4.5	Facility Designation	O					—	—	—	—	—	[4] FacilityDesignation (OPTIONAL)	
P-2.4.6	Departure Airport	O					—	—	—	—	—	[5] Airport (OPTIONAL)	
P-2.4.7	Destination Airport	O					—	—	—	—	—	[6] Airport (OPTIONAL)	
P-2.4.8	Departure Date and Time (ETD)	O					—	—	—	—	—	[7] DateTime (OPTIONAL)	
P-2.4.9	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
P-2.4.1	<b>AircraftFlightIdentification</b>											<b>IA5String</b> SIZE(2..8)	
P-2.4.2	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-2.4.2.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-2.4.2.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
P-2.4.2.2	<b>Short TSAP</b>											<b>ShortTsap ::= SEQUENCE</b>	
P-2.4.2.2.1	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.4.2.2.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.4.3	AE Qualifier Version Address											AEQualifierVersionAddress ::= SEQUENCE	
P-2.4.3.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-2.4.3.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-2.4.3.3	AP Address	M					—	—	—	—	—	APAddress	
P-2.4.3.3	Application Address											APAddress ::= CHOICE	
P-2.4.3.3.1	Long TSAP	C					—	—	—	—	—	[0] LongTsap	
P-2.4.3.3.2	Short TSAP	C					—	—	—	—	—	[1] ShortTsap	
P-2.4.3.3.1	Long TSAP											LongTsap ::= SEQUENCE	
P-2.4.3.3.1.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-2.4.3.3.1.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
P-2.4.3.3.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-2.4.3.3.2.1	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.4.3.3.2.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
P-2.4.4	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-2.4.4.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-2.4.4.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-2.4.6/7	Airport											IA5String SIZE(4)	
P-2.4.8	Date and Time											DateTime ::= SEQUENCE	
P-2.4.8.1	Date	M					—	—	—	—	—	Date	
P-2.4.8.2	Time	M					—	—	—	—	—	Time	
P-2.4.8.1	Date											Date ::= SEQUENCE	
P-2.4.8.1.1	Year	M					—	—	—	—	—	Year	
P-2.4.8.1.2	Month	M					—	—	—	—	—	Month	
P-2.4.8.1.3	Day	M					—	—	—	—	—	Day	
P-2.4.8.1.1	Year											INTEGER (1996..2095)	
P-2.4.8.1.2	Month											INTEGER (1..12)	
P-2.4.8.1.3	Day											INTEGER (1..31)	
P-2.4.8.2	Time											Time ::= SEQUENCE	
P-2.4.8.2.1	Time in Hours	M					—	—	—	—	—	Timehours	
P-2.4.8.2.2	Time in Minutes	M					—	—	—	—	—	Timeminutes	
P-2.4.8.2.1	Timehours											INTEGER (0..23)	
P-2.4.8.2.2	Timeminutes											INTEGER (0..59)	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
<b>P-2.5</b>	<b>CM Server Facility Query Response</b>											<b>CMServerFacilityQueryResponse ::= CHOICE</b>	
P-2.5.1	Info Unavailable	—	—	—	—	—	M					[0] InfoUnavailable	
P-2.5.2	Requested Info	—	—	—	—	—	M					[1] SEQUENCE SIZE (1..8) OF RequestedInfo	
P-2.5.3	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
<b>P-2.5.1</b>	<b>Info Unavailable</b>											<b>InfoUnavailable ::= ENUMERATED</b>	
P-2.5.1.1	Server Not Supported	—	—	—	—	—	M					(0) serverNotSupported	
P-2.5.1.2	Server Unavailable	—	—	—	—	—	M					(1) serverUnavailable	
P-2.5.1.3	Service Interrupted	—	—	—	—	—	M					(2) serviceInterrupted	
P-2.5.1.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
<b>P-2.5.2</b>	<b>Requested Info</b>											<b>RequestedInfo ::= SEQUENCE</b>	
P-2.5.2.1	Facility Designation	—	—	—	—	—	M					[0] FacilityDesignation	
P-2.5.2.2	CM Long TSAP	—	—	—	—	—	M					[1] LongTsap (OPTIONAL)	
P-2.5.2.3	Air Initiated Applications	—	—	—	—	—	M					[1] SEQUENCE SIZE(1..256) OF SecAir (OPTIONAL)	
P-2.5.2.4	Ground Only Initiated Applications	—	—	—	—	—	M					[2] SEQUENCE SIZE(1..256) OF SecGnd (OPTIONAL)	
P-2.5.2.5	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
<b>P-2.5.2.2</b>	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-2.5.2.2.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-2.5.2.2.2	Short TSAP	—	—	—	—	—	M					ShortTsap	
P-2.5.2.2.3													
<b>P-2.5.2.2.4</b>	<b>Short TSAP</b>											<b>ShortTsap ::= SEQUENCE</b>	
P-2.5.2.2.5	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.5.2.2.6	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	
<b>P-2.5.2.3</b>	<b>SecAir</b>											<b>SecAir ::= SEQUENCE</b>	
P-2.5.2.3.1	Application Information	—	—	—	—	—	M					[0] AEQualifierVersionAddress	
P-2.5.2.3.2	Public Key	—	—	—	—	—	M					[1] PublicKey (OPTIONAL)	a
P-2.5.2.3.3	Domain Flag	—	—	—	—	—	M					[2] DomainFlag (OPTIONAL)	
P-2.5.2.3.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
<b>P-2.5.2.3.1</b>	<b>AE Qualifier Version Address</b>											<b>AEQualifierVersionAddress ::= SEQUENCE</b>	
P-2.5.2.3.1.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-2.5.2.3.1.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-2.5.2.3.1.3	AP Address	—	—	—	—	—	M					APAddress	
<b>P-2.5.2.3.1.3</b>	<b>Application Address</b>											<b>APAddress ::= CHOICE</b>	
P-2.5.2.3.1.3.1	Long TSAP	—	—	—	—	—	M					[0] LongTsap	
P-2.5.2.3.1.3.2	Short TSAP	—	—	—	—	—	M					[1] ShortTsap	
<b>P-2.5.2.3.1.3.1</b>	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-2.5.2.3.1.3.1.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-2.5.2.3.1.3.1.3	Short TSAP	—	—	—	—	—	M					ShortTsap	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.5.2.3.1.3.1.3	Short TSAP											ShortTsap ::= SEQUENCE	
P-2.5.2.3.1.3.1.3.1	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.5.2.3.1.3.1.3.2	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	
P-2.5.2.3.2	Public Key											PublicKey ::= SEQUENCE	
P-2.5.2.3.2.1	Sequence Count	—	—	—	—	—	M					SIZE(1,	
P-2.5.2.3.2.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.5.2.3.2.3	String Length	—	—	—	—	—	M					OCTET STRING (SIZE(43,	
P-2.5.2.3.2.4	Use of Extensibility	—	—	—	—	—	M					...)	
P-2.5.2.3.3	Domain Flag											DomainFlag ::= SEQUENCE	
P-2.5.2.3.3.1	Sequence Count	—	—	—	—	—	M					SIZE(1, BOOLEAN	
P-2.5.2.3.3.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.5.2.4	SecGnd											SecGnd ::= SEQUENCE	
P-2.5.2.4.1	Application Information	—	—	—	—	—	M					[0] AEQualifierVersion	
P-2.5.2.4.2	Public Key	—	—	—	—	—	M					[1] PublicKey (OPTIONAL)	a
P-2.5.2.4.3	Domain Flag	—	—	—	—	—	M					[2] DomainFlag (OPTIONAL)	
P-2.5.2.4.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
P-2.5.2.4.1	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-2.5.2.4.1.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-2.5.2.4.1.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-2.5.2.4.2	Public Key											PublicKey ::= SEQUENCE	
P-2.5.2.4.2.1	Sequence Count	—	—	—	—	—	M					SIZE(1,	
P-2.5.2.4.2.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.5.2.4.2.3	String Length	—	—	—	—	—	M					OCTET STRING (SIZE(43,	
P-2.5.2.4.2.4	Use of Extensibility	—	—	—	—	—	M					...)	
P-2.5.2.4.3	Domain Flag											DomainFlag ::= SEQUENCE	
P-2.5.2.4.3.1	Sequence Count	—	—	—	—	—	M					SIZE(1, BOOLEAN	
P-2.5.2.4.3.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.6	CM Server Facility Update	—	—	—	—	—	M					SEQUENCE SIZE (1..8) OF RequestedInfo	
P-2.6	Requested Info											RequestedInfo ::= SEQUENCE	
P-2.6.1	Facility Designation	—	—	—	—	—	M					[0] FacilityDesignation	
P-2.6.2	CM Long TSAP	—	—	—	—	—	M					[1] LongTsap (OPTIONAL)	
P-2.6.3	Air Initiated Applications	—	—	—	—	—	M					[1] SEQUENCE SIZE(1..256) OF SecAir (OPTIONAL)	
P-2.6.4	Ground Only Initiated Applications	—	—	—	—	—	M					[2] SEQUENCE SIZE(1..256) OF SecGnd (OPTIONAL)	
P-2.6.5	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
P-2.6.2	Long TSAP											LongTsap ::= SEQUENCE	
P-2.6.2.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-2.6.2.2	Short TSAP	—	—	—	—	—	M					ShortTsap	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.6.2.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-2.6.2.2.1	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.6.2.2.2	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	
P-2.6.3	SecAir											SecAir ::= SEQUENCE	
P-2.6.3.1	Application Information	—	—	—	—	—	M					[0] AEQualifierVersionAddress	
P-2.6.3.2	Public Key	—	—	—	—	—	M					[1] PublicKey (OPTIONAL)	a
P-2.6.3.3	Domain Flag	—	—	—	—	—	M					[2] DomainFlag (OPTIONAL)	
P-2.6.3.3	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
P-2.6.3.1	AE Qualifier Version Address											AEQualifierVersionAddress ::= SEQUENCE	
P-2.6.3.1.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-2.6.3.1.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-2.6.3.1.3	AP Address	—	—	—	—	—	M					APAddress	
P-2.6.3.1.3	Application Address											APAddress ::= CHOICE	
P-2.6.3.1.3.1	Long TSAP	—	—	—	—	—	M					[0] LongTsap	
P-2.6.3.1.3.2	Short TSAP	—	—	—	—	—	M					[1] ShortTsap	
P-2.6.3.1.3.1	Long TSAP											LongTsap ::= SEQUENCE	
P-2.6.3.1.3.1.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-2.6.3.1.3.1.2	Short TSAP	—	—	—	—	—	M					ShortTsap	
P-2.6.3.1.3.1.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-2.6.3.1.3.1.2.1	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.6.3.1.3.1.2.2	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	
P-2.6.3.2	Public Key											PublicKey ::= SEQUENCE	
P-2.6.3.2.1	Sequence Count	—	—	—	—	—	M					SIZE(1,	
P-2.6.3.2.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.6.3.2.3	String Length	—	—	—	—	—	M					OCTET STRING (SIZE(43,	
P-2.6.3.2.4	Use of Extensibility	—	—	—	—	—	M					...)	
P-2.6.3.3	Domain Flag											DomainFlag ::= SEQUENCE	
P-2.6.3.3.1	Sequence Count	—	—	—	—	—	M					SIZE(1, BOOLEAN	
P-2.6.3.3.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.6.4	SecGnd											SecGnd ::= SEQUENCE	
P-2.6.4.1	Application Information	—	—	—	—	—	M					[0] AEQualifierVersion	
P-2.6.4.2	Public Key	—	—	—	—	—	M					[1] PublicKey (OPTIONAL)	a
P-2.6.4.3	Domain Flag	—	—	—	—	—	M					[2] DomainFlag (OPTIONAL)	
P-2.6.4.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
P-2.6.4.1	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-2.6.4.1.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-2.6.4.1.2	AP Version	—	—	—	—	—	M					VersionNumber	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.6.4.2	Public Key											PublicKey ::= SEQUENCE	
P-2.6.4.2.1	Sequence Count	—	—	—	—	—	M					SIZE(1,	
P-2.6.4.2.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.6.4.2.3	String Length	—	—	—	—	—	M					OCTET STRING (SIZE(43,	
P-2.6.4.2.4	Use of Extensibility	—	—	—	—	—	M					...)	
P-2.6.4.3	Domain Flag											DomainFlag ::= SEQUENCE	
P-2.6.4.3.1	Sequence Count	—	—	—	—	—	M					SIZE(1, BOOLEAN	
P-2.6.4.3.2	Use of Extensibility	—	—	—	—	—	M					...)	a
P-2.7	AE Qualifier											INTEGER (0..255)	
P-2.8	FacilityDesignation											IA5String SIZE(4..8)	
P-2.9	VersionNumber											INTEGER (1..255)	

## Notes:

- a Although this element is optional in ASN.1, it must be supported



ATNP/WGA/WP A2/3/XX

12 September 2001

## **AERONAUTICAL TELECOMMUNICATION NETWORK PANEL**

### **WORKING GROUP A SUBGROUP A2 (AIR/GROUND APPLICATIONS)**

Toulouse 25th September - 4th October 2001

**Agenda Item 6 : PICS and Interoperability**

### **Ground Context Management Edition 3 PICS/OICS Proforma**

Prepared by: Mike Harcourt

#### **SUMMARY**

This working paper contains the OPLINKP Profile PICS/OICS proforma tables for CM Ground Version 2 (Doc 9705 Third Edition).

Worksheet	Tables
WGA Front Sheet	
Contents	
I-1 Identification	Table I-1: PICS/OICS Identification
I-2 Supplier	Table I-2: Supplier and Implementation Identification
I-3 Protocol	Table I-3: CM Protocol Identification
S-1 Protocol Opts	Table S-1: CM Protocol Versions and Options - Airborne ASE
S-2 Services	Table S-2: Supported CM Service Primitives - Ground User
S-3 Logon Service	Table S-3: CM Logon Service - Ground User (Indication, Response)
S-4 V2 Server Query Service	Table S-4: CM Server Facility Query Service - Ground User (Indication, Response) (Version 2)
S-5 Update Service	Table S-5: CM Update Service - Ground User (Request)
S-6 V2 Facility Update Service	Table S-6: CM Server Facility Update Service - Ground User (Request) (Version 2)
S-7 Contact Service	Table S-7: CM Contact Service - Ground User (Request, Confirmation)
S-8 End Service	Table S-8: CM End Service - Ground User (Request)
S-9 User Abort	Table S-9: CM User Abort Service - Ground User (Request, Indication)
S-10 Provider Abort	Table S-10: CM Provider Abort Service - Ground User (Indication)
S-11 Forward (Init) Service	Table S-11: CM Forward Service (Initiator) - Ground User (Request, Confirmation)
S-12 Forward (Resp) Service	Table S-12: CM Forward Service (Responder) - Ground User (Indication, Response)
S-13 Timers	Table S-13: CM ASE Technical Timers
M-1 V1 Top Level Msg	Table M-1: CM Messages (top level) (Version 1)
M-2 V2 Top Level Msg	Table M-2: CM Messages (top level) (Version 2)
P-1 V1 Msg Components	Table P-1: CM Version 1 Message Components
P-2 V2 Msg Components	Table P-2: CM Version 2 Message Components



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	
	<b>Implementation Information</b>	<b>Implementation Details</b>
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: CM Protocol Identification

Ref No		OPLINKP	Profile	Implementation
I-3.1	Protocol Standard (Title, reference, date)	ICAO Doc 9705 Edition Three - 2001		
I-3.2	CM Protocol Version	Version 1 Version 2		
I-3.3	Addenda, amendments and corrigenda implemented			
I-3.4	Defect Reports implemented			

Table S-1: CM Protocol Versions and Options - Airborne ASE

Source: Chapter 8 - Subsetting Rules		OPLINKP Profile	Profile Status	IMP Support	Associated Predicate	Notes
Ref No	Protocol Option					
S-1.1	CM Protocol Version 1	C.1			V1	
S-1.2	CM Protocol Version 2	C.1			V2	a
S-1.2.1	CM Protocol Version 2 Emulating Version 1	C.2			V2E1	
S-1.3	CM-air-ASE	Not applicable			CM/Air	
S-1.4	CM-ground-ASE	M			CM/Ground	
S-1.5	Air CM update supported	Not applicable to Ground Systems			A-UP-FU	
S-1.6	Air CM contact supported				A-CO-FU	
S-1.7	Air CM server facility query initiation supported				A-SF-FU	
S-1.8	Air CM server facility update supported				A-SU-FU	
S-1.9	Air CM maintain dialogue supported				—	
S-1.10	Ground CM maintain dialogue supported	O			—	
S-1.11	Ground CM update supported	O			G-UP-FU	
S-1.12	Ground CM contact supported	O			G-CO-FU	
S-1.13	Ground CM forward receiving user supported	O			G-FO-FU	
S-1.14	Ground CM forward initiating user supported	O			G-FO-IN	
S-1.15	Ground CM server facility update initiation supported	O			G-SF-FU	
S-1.16	Ground CM server facility query supported	O			G-SQ-FU	
	Security Option					
S-1.17	Security	C.3			SEC	
S-1.18	No security	C.4			NOSEC	

**OPLINKP Profile:**

- C.1 An implementation shall support one and only one of these two options.
- C.2 If Version 2 (V2) supported then **O** else —
- C.3 If Version 2 (V2) supported then **M** else —
- C.4 If Version 2 (V2) supported then **O** else **M**

**Notes:**

- a Support for CM version 2 includes the capability to emulate CM version 1

Table S-2: Supported CM Service Primitives

Source: Chapter 3 - Abstract Services		Sender (req, [cnf])			Receiver (ind, [rsp])			Notes
Ref No	Service Primitives	OPLINKP Profile	Profile Status	IMP Support	OPLINKP Profile	Profile Status	IMP Support	
S-2.1	CM-login	—	—	—	M			See Table S-3
S-2.2	CM-server-facility-query	C.1			C.1			See Table S-4
S-2.3	CM-update	C.2			—	—	—	See Table S-5
S-2.4	CM-server-facility-update	C.3			—	—	—	See Table S-6
S-2.5	CM-contact	C.4			—	—	—	See Table S-7
S-2.6	CM-end	C.5			—	—	—	See Table S-8
S-2.7	CM-forward	C.6			C.7			See Tables S-11 & S-12
S-2.8	CM-user-abort	M			M			See Table S-9
S-2.9	CM-provider-abort	—	—	—	M			See Table S-10

**OPLINKP Profile:**

- C.1 If Version 2 (V2) and Server Facility Query (G-SQ-FU) supported **M** else —
- C.2 If Update (G-UP-FU) supported then **M** else —
- C.3 If Version 2 (V2) and Server Facility Update (G-SF-FU) supported **M** else —
- C.4 If Contact (G-CO-FU) supported then **M** else —
- C.5 If Maintain Dialogue feature is supported then **M** else —
- C.6 If Forward Initiator (G-FO-IN) supported then **M** else —
- C.7 If Forward Receiver (G-FO-FU) supported then **M** else —

Table S-3: CM Logon Service - 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-3.1	Facility Designation	Not visible to Ground User						
S-3.1.1	ICAO facility designation = IA5 String SIZE(4..8)							
S-3.2	Capability of the ground system to understand an Aircraft Address							
S-3.2.1	Aircraft Address = Bit String SIZE(24)	M		—		—		
S-3.3	Capability of the ground system to understand CM ASE Version Number							
S-3.3.1	Version Number = INTEGER (1..255)	M						
S-3.4	Capability of the ground system to understand a logon request							
S-3.4.1	Logon Request	M					See CMLogonRequest (Table P-1)	
S-3.5	Capability of the ground system to specify a logon response							
S-3.5.1	Logon Response	C.1					See CMLogonResponse (Table P-1)	
S-3.5.2	Secure Logon Response	C.2					See CMSecureLogonResponse (Table P-2)	
S-3.6	Class of Communication Service	Not visible to Ground User						
S-3.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'							
S-3.7	Capability of the ground system to specify a maintain dialogue request							
S-3.7.1	'Maintain'	C.3						
S-3.8	Capability of the ground system to understand security							
S-3.8.1	One of the abstract values 'Exchange supporting key management' or 'No security'	C.2						
S-3.9	ASE Version Number	Not visible to Ground User						
S-3.9.1	CM Air ASE Version Number = INTEGER (1..255)							

**OPLINKP Profile:**

- C.1 If CM Version 1 (V1) or Version 2 Emulating Version 1 (V2E1) then **M** else —
- C.2 If CM Version 2 then **M** else —
- C.3 If Maintain Dialogue supported then **M** else —

Table S-4: CM Server Facility Query Service - Ground User (Indication, Response) (Version 2)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
Ref No	Operational Elements	OPLINKP Profile	Operational Use					
			Status	Profile Cons	Implementation Status	Cons		
S-4.1	Facility Designation	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 an Aircraft Address							
S-4.2.1	Aircraft Address = Bit String SIZE(24)	C.1		—		—		a
S-4.3	Capability of the ground system to understand a Server Facility Request							
S-4.3.1	Server Facility Query Request	C.1					See CMServerFacilityQueryRequest (Table P-2)	
S-4.4	Capability of the ground system to specify a Server Facility Response							
S-4.4.1	Server Facility Query Response	C.1					See CMServerFacilityQueryResponse (Table 2)	
S-4.5	Class of Communication Service	Not visible to Ground User						
S-4.5.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'							
S-4.6	Capability of the ground system to specify a maintain dialogue request							
S-4.6.1	'Maintain'	C.2						
S-4.7	ability of the ground system to understand security							
S-4.7.1	One of the abstract values 'Exchange supporting key management' or 'No security'	C.1						a

**OPLINKP Profile:**

- C.1 If CM Version 2 and Server Facility Query (A-SF-FU) supported then **M** else —  
C.2 If CM Version 2 and Maintain Dialogue supported then **M** else —

**Notes:**

- a This parameter is not present if there is an existing CM dialogue.

Table S-5: CM Update Service - Ground User (Request)

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-5.1	Capability of the ground system to specify an Aircraft Address							
S-5.1.1	Aircraft Address = Bit String SIZE(24)	C.2		—		—		
S-5.2	Capability of the ground system to specify its own Facility Designation							
S-5.2.1	ICAO facility designation = IA5 String SIZE(4..8)	C.2						
S-5.3	Capability of the ground system to specify update information							
S-5.3.1	Update Information	C.1					See CMUpdate (Table P-1)	
S-5.4	Capability of the ground system to request a Class of Communication Service							
S-5.4.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.3						
S-5.5	Capability of the ground system to specify security							
S-5.5.1	One of the abstract values 'Exchange supporting key management' or 'No security'	C.4						

**OPLINKP Profile:**

- C.1 If Update (G-UP-FU) supported then **M** else —
- C.2 If Update (G-UP-FU) supported and there is not an existing CM dialogue then **M** else —
- C.3 If Update (G-UP-FU) supported then **O** else —
- C.4 If (Version 2 and Update (G-UP-FU) are supported) and there is not an existing CM dialogue then **M** else —



Table S-6: CM Server Facility Update Service - Ground User (Request) (Version 2)

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 specify an Aircraft Address							
S-6.1.1	Aircraft Address = Bit String SIZE(24)	C.2		—		—		
S-6.2	Capability of the ground system to specify its own Facility Designation							
S-6.2.1	ICAO facility designation = IA5 String SIZE(4..8)	C.2						
S-6.3	Capability of the ground system to specify server facility update information							
S-6.3.1	Server Facility Update Information	C.1					See CMServerFacilityUpdate (Table P-2)	
S-6.4	Capability of the ground system to request a Class of Communication Service							
S-6.4.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.3						
S-6.5	Capability of the ground system to specify security							
S-6.5.1	One of the abstract values 'Exchange supporting key management' or 'No security'	C.2						

**OPLINKP Profile:**

- C.1 If CM Version 2 and Server Facility Update (G-SF-FU) supported then **M** else —
- C.2 If CM Version 2 and Server Facility Update (G-SF-FU) supported and there is not an existing CM dialogue then **M** else —
- C.3 If CM Version 2 and Server Facility Update (G-SF-FU) supported then **O** else —

Table S-7: CM Contact Service - 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-7.1	Capability of the ground system to specify an Aircraft Address							
S-7.1.1	Aircraft Address = Bit String SIZE(24)	C.2		—		—		
S-7.2	Capability of the ground system to specify its own Facility Designation							
S-7.2.1	ICAO facility designation = IA5 String SIZE(4..8)	C.2						
S-7.3	Capability of the ground system to specify a contact request							
S-7.3.1	Contact Request	C.1					See CMContactRequest (Table P-1)	
S-7.4	Capability of the ground system to understand a contact response							
S-7.4.1	Contact Response	C.1					See CMContactResponse (Table P-1)	
S-7.5	Capability of the ground system to request a Class of Communication Service							
S-7.5.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.3						
S-7.6	Capability of the ground system to specify security							
S-7.6.1	One of the abstract values 'Exchange supporting key management' or 'No security'	C.4						

**OPLINKP Profile:**

- C.1 If Contact (G-CO-FU) supported then **M** else —
- C.2 If Contact (G-CO-FU) supported and there is not an existing CM dialogue then **M** else —
- C.3 If Contact (G-CO-FU) supported then **O** else —
- C.4 If (CM Version 2 and Contact (G-CO-FU) are supported) and there is not an existing CM dialogue then **M** else —

Table S-8: CM End Service - Ground User (Request)

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-8.1	Capability of the ground system to specify an End Indication	C.1						a

OPLINKP Profile:  
C.1 If maintain dialogue feature is supported then **M** else —

Table S-9: CM User Abort Service - 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-9.1	Capability of the ground system to request a user abort	M						
S-9.2	Capability of the ground system to receive a user abort	M						

Table S-10: CM Provider Abort Service - Ground User (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-10.1	Capability of the ground system to receive a provider abort							
S-10.1.1	Reason	M					See CMAbortReason (Table P-1)	

Table S-11: CM Forward Service (Initiator) - Ground 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		
<b>S-11.1</b>	<b>Capability of the initiating ground system to specify a ground system Facility Designation for the receiving system</b>							
S-11.1.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1						
<b>S-11.2</b>	<b>Capability of the initiating ground system to specify its own Facility Designation</b>							
S-11.2.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1						
<b>S-11.3</b>	<b>Capability of the initiating ground system to specify a forward request</b>							
S-11.3.1	Forward Request	C.1					See CMForwardRequest (Table P-1)	
S-11.3.2	Enhanced Forward Request	C.3					See CMEnhancedForwardRequest (Table P-2)	
<b>S-11.4</b>	<b>Capability of the initiating ground system to request a Class of Communication Service</b>							
S-11.4.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.2						
<b>S-11.5</b>	<b>Capability of the initiating ground system to understand a the result of a forward request</b>							
S-11.5.1	Result	C.1					See CMForwardResponse (Table P-1)	
<b>S-11.6</b>	<b>Capability of the ground system to specify security</b>							
S-11.6.1	One of the abstract values 'Exchange supporting key management' or 'No security'	C.3						
<b>S-11.7</b>	<b>Capability of the ground system to specify an emulated version</b>							
S-11.7.1	CM Ground ASE Version Number = INTEGER (1..255)	C.4						

**OPLINKP Profile:**

- C.1 If Forward Initiator (G-FO-IN) supported then **M** else —
- C.2 If Forward Initiator (G-FO-IN) supported then **O** else —
- C.3 If CM Version 2 and Forward Initiator (G-FO-IN) supported then **M** else —
- C.4 If CM Version 2 and Forward Initiator (G-FO-IN) supported then **O** else —

Table S-12: CM Forward Service (Responder) - Ground User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
Ref No	Operational Elements	ATN Profile	Operational Use		Implementation Status	Cons		
			Status	Cons				
S-12.1	Capability of the responding ground system to understand a Facility Designation for the initiating system							
S-12.1.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1						
S-12.2	Capability of the airborne system to understand CM ASE Version Number							
S-12.2.1	Version Number = INTEGER (1..255)	C.1						
S-12.3	Capability of the responding ground system to understand a forward request							
S-12.3.1	Forward Request	C.1					See CMForwardRequest (Table P-1)	
S-12.3.2	Enhanced Forward Request	C.2					See CMEnhancedForwardRequest (Table P-2)	
S-12.4	Capability of the responding ground system to specify the result of a forward request							
S-12.4.1	Result	C.1					See CMForwardResponse (Table P-1)	

**OPLINKP Profile:**

- C.1 If Forward Receiver (G-FO-FU) supported then M else —
- C.2 If CM Version 2 and Forward Responder (G-FO-FU) supported then **M** else —

Table S-13: CM ASE Technical Timers

Source: Chapter 5 - Protocol Definition			OICS						Notes
			Operational Use						
Ref No	CM Service	Timer	OPLINKP Profile		Status	Profile Suggested Value	Implementation		
			Status	Suggested Value			Status	Value Used	
S-13.1	CM Logon				Not used by Ground Systems				
S-13.1.1		t-logon	M	4 minutes					
S-13.2	CM Server Facility Query								
S-13.2.1		t-sv_query	C.1	6 minutes					
S-13.3	CM Update								
S-13.3.1		t-update	C.2	4 minutes					
S-13.4	CM Server Facility Update								
S-13.4.1		t-update	C.3	4 minutes					
S-13.5	CM Contact								
S-13.5.1		t-contact	C.4	8 minutes					
S-13.6	CM Forward								
S-13.6.1		t-forward	C.5	4 minutes					
S-13.7	CM End								
S-13.7.1		t-end	C.6	4 minutes					

**OPLINKP Profile:**

- C.1 If Server Facility Query (A-SF-FU) supported then **M** else —
- C.2 If Update (G-UP-FU) supported then **M** else —
- C.3 If Server Facility Update (G-SF-FU) supported then **M** else —
- C.4 If Contact (G-CO-FU) supported then **M** else —
- C.5 If Forward Initiator (G-FO-IN) supported then **M** else —
- C.6 If Maintain Dialogue supported then **M** else —



Table M-1: CM Messages (top level) (Version 1)

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		
<b>M-1.1</b>	<b>CM Aircraft Messages</b>											<b>CM Aircraft Message ::= CHOICE</b>	
M-1.1.1	CM Logon Request	—	—	—	—	—	M					[0] CMLogonRequest	See P-1
M-1.1.2	CM Contact Response	—	—	—	—	—	C.2					[1] CMContactResponse	See P-1
M-1.1.3	CM Abort Reason	—	—	—	—	—	M					[2] CMAbortReason	See P-1
M-1.1.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
<b>M-1.2</b>	<b>CM Ground Messages</b>											<b>CM Ground Message ::= CHOICE</b>	
M-1.2.1	CM Logon Response	M					—	—	—	—	—	[0] CMLogonResponse	See P-1
M-1.2.2	CM Update	C.1					—	—	—	—	—	[1] CMUpdate	See P-1
M-1.2.3	CM Contact Request	C.2					—	—	—	—	—	[2] CMContactRequest	See P-1
M-1.2.4	CM Forward Request	C.3					C.4					[3] CMForwardRequest	See P-1
M-1.2.5	CMAbortReason	M					M					[4] CMAbortReason	See P-1
M-1.2.6	CM Forward Response	M					C.3					[5] CMForwardResponse	See P-1
M-1.2.7	Use of Extensibility	X					M					Use of Extensibility	

**OPLINKP Profile:**

- C.1 If Update (G-UP-FU) supported then M else —
- C.2 If Contact (G-CO-FU) supported then M else —
- C.3 If Forward Initiator (G-FO-IN) supported then M else —
- C.4 If Forward Receiver (G-FO-FU) supported then M else —

Table M-2: CM Messages (top level) (Version 2)

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		
<b>M-2.1</b>	<b>CM Aircraft Messages</b>											<b>CM Aircraft Message ::= CHOICE</b>	
M-2.1.1	CM Logon Request	—	—	—	—	—	M					[0] CMLogonRequest	See P-1
M-2.1.2	CM Contact Response	—	—	—	—	—	C.2					[1] CMContactResponse	See P-1
M-2.1.3	CM Abort Reason	—	—	—	—	—	M					[2] CMAbortReason	See P-1
M-2.1.4	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
M-2.1.5	CM Server Facility Query Request	—	—	—	—	—	C.5					[3] CMServerFacilityQueryRequest	See P-2
<b>M-2.2</b>	<b>CM Ground Messages</b>											<b>CM Ground Message ::= CHOICE</b>	
M-2.2.1	CM Logon Response	M					—	—	—	—	—	[0] CMLogonResponse	See P-1
M-2.2.2	CM Update	C.1					—	—	—	—	—	[1] CMUpdate	See P-1
M-2.2.3	CM Contact Request	C.2					—	—	—	—	—	[2] CMContactRequest	See P-1
M-2.2.4	CM Forward Request	C.3					C.4					[3] CMForwardRequest	See P-1
M-2.2.5	CMAbortReason	M					M					[4] CMAbortReason	See P-1
M-2.2.6	CM Forward Response	M					C.3					[5] CMForwardResponse	See P-1
M-2.2.7	Use of Extensibility	M					M					Use of Extensibility	
M-2.2.8	CM Server Facility Query Response	C.5					—	—	—	—	—	[6] CMServerFacilityQueryResponse	See P-2
M-2.2.9	CM Server Facility Update	C.6					—	—	—	—	—	[7] CMServerFacilityUpdate	See P-2
M-2.2.10	CM Secure Logon Response	M					—	—	—	—	—	[8] CMSecureLogonResponse	See P-2
M-2.2.11	CM Secure Update	C.1					—	—	—	—	—	[9] CMSecureUpdate	See P-2
M-2.2.12	CM Enhanced Forward Request	C.3					—	—	—	—	—	[10] CMEnhancedForwardRequest	See P-2

**OPLINKP Profile:**

- C.1 If Update (G-UP-FU) supported then M else —
- C.2 If Contact (G-CO-FU) supported then M else —
- C.3 If Forward Initiator (G-FO-IN) supported then M else —
- C.4 If Forward Receiver (G-FO-FU) supported then M else —
- C.5 If Server Facility Query (G-SQ-FU) supported then **M** else —
- C.6 If Server Facility Update (G-SF-FU) supported then **M** else —

Table P-1: CM Version 1 Message Components

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
<b>P-1.1</b>	<b>CM Abort Reason</b>											<b>CMAbortReason ::= ENUMERATED</b>	
P-1.1.1	Timer expired	M					M					(0) timer-expired	
P-1.1.2	Undefined error	M					M					(1) undefined-error	
P-1.1.3	Invalid PDU	M					M					(2) invalid-PDU	
P-1.1.4	Protocol Error	M					M					(3) protocol-error	
P-1.1.5	Dialogue acceptance not permitted	M					M					(4) dialogue-acceptance-not-permitted	
P-1.1.6	Dialogue end not accepted	M					M					(5) dialogue-end-not-accepted	
P-1.1.7	Communication service error	M					M					(6) communication-service-error	
P-1.1.8	Communication service failure	M					M					(7) communication-service-failure	
P-1.1.9	Invalid QOS parameter	M					M					(8) invalid-QOS-parameter	
P-1.1.10	Expected PDU missing	M					M					(9) expected-PDU-missing	
P-1.1.11	Use of Extensibility	X					M					Use of Extensibility	
<b>P-1.2</b>	<b>CM Contact Request</b>											<b>CMContactRequest ::= SEQUENCE</b>	
P-1.2.1	Facility Designation	C.1					—	—	—	—	—	FacilityDesignation	
P-1.2.2	Address	C.1					—	—	—	—	—	LongTsap	
<b>P-1.2.1</b>	<b>FacilityDesignation</b>											<b>IA5String SIZE(4..8)</b>	
<b>P-1.2.2</b>	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-1.2.2.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-1.2.2.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
<b>P-1.2.2.2</b>	<b>Short TSAP</b>											<b>ShortTsap ::= SEQUENCE</b>	
P-1.2.2.2.1	ARS	O					—	—	—	—	—	[0] OCTET STRING SIZE(3) (Optional)	b
P-1.2.2.2.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
<b>P-1.3</b>	<b>CM Contact Response</b>		—	—	—	—	C.1					<b>Response</b>	
<b>P-1.3.1</b>	<b>Response</b>											<b>Response</b>	
P-1.3.1.1	Contact Successful	—	—	—	—	—	M					(0) contactSuccess	
P-1.3.1.2	Contact Not Successful	—	—	—	—	—	M					(1) contactNotSuccessful	
<b>P-1.4</b>	<b>CM Forward Request</b>	C.2					M					<b>CMLogonRequest</b>	
<b>P-1.5</b>	<b>CM ForwardResponse</b>											<b>CMForwardResponse ::= ENUMERATED</b>	
P-1.5.1	Success	C.2					C.2					(0) success	
P-1.5.2	Incompatible version	C.2					C.2					(1) incompatible-version	
P-1.5.3	Service not supported	C.3					C.2					(2) service-not-supported	
<b>P-1.6</b>	<b>CM Logon Request</b>											<b>CMLogonRequest ::= SEQUENCE</b>	a
P-1.6.1	Aircraft Flight Identification	C.2					M					[0] AircraftFlightIdentification	
P-1.6.2	CM Long TSAP	C.2					M					[1] LongTsap	
P-1.6.3	Ground Initiated Applications	C.2					M					[2] SEQUENCE SIZE(1..256) OF AEQualifierVersionAddress (Optional)	
P-1.6.4	Air Only Initiated Applications	C.2					M					[3] SEQUENCE SIZE(1..256) OF AEQualifierVersion (Optional)	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-1.6.5	Facility Designation	C.2					M					[4] FacilityDesignation (Optional)	
P-1.6.6	Departure Airport	C.2					M					[5] Airport (Optional)	
P-1.6.7	Destination Airport	C.2					M					[6] Airport (Optional)	
P-1.6.8	Departure Date and Time (ETD)	C.2					M					[7] DateTime (Optional)	
P-1.6.1	AircraftFlightIdentification											IA5String SIZE(2..8)	
P-1.6.2	Long TSAP											LongTsap ::= SEQUENCE	
P-1.6.2.1	RDP	M					M					OCTET STRING SIZE(5)	
P-1.6.2.2	Short TSAP	M					M					ShortTsap	
P-1.6.2.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-1.6.2.2.1	ARS	O					M					[0] OCTET STRING SIZE(3) (Optional)	b
P-1.6.2.2.2	Local System NSEL and TSEL	M					M					[1] OCTET STRING SIZE(10..11)	
P-1.6.3	AE Qualifier Version Address											AEQualifierVersionAddress ::= SEQUENCE	
P-1.6.3.1	AE Qualifier	M					M					AEQualifier	
P-1.6.3.2	AP Version	M					M					VersionNumber	
P-1.6.3.3	AP Address	M					M					APAddress	
P-1.6.3.3	Application Address											APAddress ::= CHOICE	
P-1.6.3.3.1	Long TSAP	M					M					[0] LongTsap	
P-1.6.3.3.2	Short TSAP	M					M					[1] ShortTsap	
P-1.6.3.3.1	Long TSAP											LongTsap ::= SEQUENCE	
P-1.6.3.3.1.1	RDP	M					M					OCTET STRING SIZE(5)	
P-1.6.3.3.1.2	Short TSAP	M					M					ShortTsap	
P-1.6.3.3.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-1.6.3.3.2.1	ARS	O					M					[0] OCTET STRING SIZE(3) (Optional)	b
P-1.6.3.3.2.2	Local System NSEL and TSEL	M					M					[1] OCTET STRING SIZE(10..11)	
P-1.6.4	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-1.6.4.1	AE Qualifier	M					M					AEQualifier	
P-1.6.4.2	AP Version	M					M					VersionNumber	
P-1.6.5	FacilityDesignation											IA5String SIZE(4..8)	
P-1.6.6/7	Airport											IA5String SIZE(4)	
P-1.6.8	Date and Time											DateTime ::= SEQUENCE	
P-1.6.8.1	Date	C.2					M					Date	
P-1.6.8.2	Time	C.2					M					Time	
P-1.6.8.1	Date											Date ::= SEQUENCE	
P-1.6.8.1.1	Year	C.2					M					Year	
P-1.6.8.1.2	Month	C.2					M					Month	
P-1.6.8.1.3	Day	C.2					M					Day	
P-1.6.8.1.1	Year											INTEGER (1996..2095)	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-1.6.8.1.2	Month											INTEGER (1..12)	
P-1.6.8.1.3	Day											INTEGER (1..31)	
P-1.6.8.2	Time											Time ::= SEQUENCE	
P-1.6.8.2.1	Time in Hours	C.2					M					Timehours	
P-1.6.8.2.2	Time in Minutes	C.2					M					Timeminutes	
P-1.6.8.2.1	Timehours											INTEGER (0..23)	
P-1.6.8.2.2	Timeminutes											INTEGER (0..59)	
P-1.7	CM Logon Response											CMLogonResponse ::= SEQUENCE	
P-1.7.1	Air Initiated Applications	O					—	—	—	—	—	[0] SEQUENCE SIZE(1..256) OF AEQualifierVersionAddress (Optional)	
P-1.7.2	Ground Only Initiated Applications	O					—	—	—	—	—	[1] SEQUENCE SIZE(1..256) OF AEQualifierVersion (Optional)	
P-1.7.1	AE Qualifier Version Address											AEQualifierVersionAddress ::= SEQUENCE	
P-1.7.1.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-1.7.1.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-1.7.1.3	AP Address	M					—	—	—	—	—	APAddress	
P-1.7.1.3	Application Address											APAddress ::= CHOICE	
P-1.7.1.3.1	Long TSAP	M					—	—	—	—	—	[0] LongTsap	
P-1.7.1.3.2	Short TSAP	M					—	—	—	—	—	[1] ShortTsap	
P-1.7.1.3.1	Long TSAP											LongTsap ::= SEQUENCE	
P-1.7.1.3.1.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-1.7.1.3.1.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
P-1.7.1.3.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-1.7.1.3.2.1	ARS	O					—	—	—	—	—	[0] OCTET STRING SIZE(3) (Optional)	b
P-1.7.1.3.2.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
P-1.7.2	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-1.7.2.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-1.7.2.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-1.8	CM Update	C.4					—	—	—	—	—	CMLogonResponse	
P-1.9	AE Qualifier											INTEGER (0..255)	
P-1.10	VersionNumber											INTEGER (1..255)	

## OPLINKP Profile:

- C.1 If Contact (G-CO-FU) supported then M else —
- C.2 If Forward Initiator (G-FO-IN) supported then M else —
- C.3 If **Not** a Forward User (Responder) (G-FO-FU) then **M** else —

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

C.4 If Update (G-UP-FU) supported then M else —

**Notes:**

- a The ground system must forward what ever the aircraft sends
- b Although this element is optional in ASN.1, it must be supported

Table P-2: CM Version 2 Message Components

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
<b>P-2.1</b>	<b>CM Enhanced Forward Request</b>											<b>CMEnhancedForwardRequest ::= SEQUENCE</b>	
P-2.1.1	CM Version Number	M					M					VersionNumber	
P-2.1.2	CM Forward Request	M					M					CMLogonRequest	See P-1
P-2.1.3	Use of Extensibility	X					M					Use of Extensibility	
<b>P-2.2</b>	<b>CM Secure Logon Response</b>											<b>CMSecureLogonResponse ::= SEQUENCE</b>	
P-2.2.1	Facility Designation	M					—	—	—	—	—	[0] FacilityDesignation (OPTIONAL)	
P-2.2.2	Secure Air Initiated Applications	O					—	—	—	—	—	[1] SEQUENCE SIZE(1..256) OF SecAir (OPTIONAL)	
P-2.2.3	Secure Ground Only Initiated Applications	O					—	—	—	—	—	[2] SEQUENCE SIZE(1..256) OF SecGnd (OPTIONAL)	
P-2.2.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
<b>P-2.2.2</b>	<b>SecAir</b>											<b>SecAir ::= SEQUENCE</b>	
P-2.2.2.1	Application Information	M					—	—	—	—	—	[0] AEQualifierVersionAddress	
P-2.2.2.2	Public Key	O					—	—	—	—	—	[1] PublicKey (OPTIONAL)	a
P-2.2.2.3	Domain Flag	O					—	—	—	—	—	[2] DomainFlag (OPTIONAL)	
P-2.2.2.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
<b>P-2.2.2.1</b>	<b>AE Qualifier Version Address</b>											<b>AEQualifierVersionAddress ::= SEQUENCE</b>	
P-2.2.2.1.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-2.2.2.1.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-2.2.2.1.3	AP Address	M					—	—	—	—	—	APAddress	
<b>P-2.2.2.1.3</b>	<b>Application Address</b>											<b>APAddress ::= CHOICE</b>	
P-2.2.2.1.3.1	Long TSAP	C					—	—	—	—	—	[0] LongTsap	
P-2.2.2.1.3.2	Short TSAP	C					—	—	—	—	—	[1] ShortTsap	
<b>P-2.2.2.1.3.1</b>	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-2.2.2.1.3.1.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-2.2.2.1.3.1.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
<b>P-2.2.2.1.3.2</b>	<b>Short TSAP</b>											<b>ShortTsap ::= SEQUENCE</b>	
P-2.2.2.1.3.2.1	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.2.2.1.3.2.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
<b>P-2.2.2.2</b>	<b>Public Key</b>											<b>PublicKey ::= SEQUENCE</b>	
P-2.2.2.2.1	Sequence Count	M					—	—	—	—	—	SIZE(1,	
P-2.2.2.2.2	Use of Extensibility	M					—	—	—	—	—	...)	a
P-2.2.2.2.3	String Length	M					—	—	—	—	—	OCTET STRING (SIZE(43,	
P-2.2.2.2.4	Use of Extensibility	M					—	—	—	—	—	...)	
<b>P-2.2.2.3</b>	<b>Domain Flag</b>											<b>DomainFlag ::= SEQUENCE</b>	
P-2.2.2.3.1	Sequence Count	M					—	—	—	—	—	SIZE(1, BOOLEAN	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.2.2.2.2	Use of Extensibility	M					—	—	—	—	—	...	a
P-2.2.3	<b>SecGnd</b>											<b>SecGnd ::= SEQUENCE</b>	
P-2.2.3.1	Application Information	M					—	—	—	—	—	[0] AEQualifierVersion	
P-2.2.3.2	Public Key	O					—	—	—	—	—	[1] PublicKey (OPTIONAL)	a
P-2.2.3.3	Domain Flag	O					—	—	—	—	—	[2] DomainFlag (OPTIONAL)	
P-2.2.3.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
P-2.2.3.1	<b>AE Qualifier Version</b>											<b>AEQualifierVersion ::= SEQUENCE</b>	
P-2.2.3.1.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-2.2.3.1.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-2.2.3.2	<b>Public Key</b>											<b>PublicKey ::= SEQUENCE</b>	
P-2.2.3.2.1	Sequence Count	M					—	—	—	—	—	SIZE(1,	
P-2.2.3.2.2	Use of Extensibility	M					—	—	—	—	—	...)	a
P-2.2.3.2.3	String Length	M					—	—	—	—	—	OCTET STRING (SIZE(43,	
P-2.2.3.2.4	Use of Extensibility	M					—	—	—	—	—	...)	
P-2.2.3.3	<b>Domain Flag</b>											<b>DomainFlag ::= SEQUENCE</b>	
P-2.2.3.2.1	Sequence Count	M					—	—	—	—	—	SIZE(1, BOOLEAN	
P-2.2.3.2.2	Use of Extensibility	M					—	—	—	—	—	...)	a
P-2.3	<b>CM Secure Update</b>	C.1					—	—	—	—	—	<b>CMSecureLogonResponse</b>	
P-2.4	<b>CM Server Facility Query Request</b>											<b>CMServerFacilityQueryRequest ::= SEQUENCE</b>	
P-2.4.1	Aircraft Flight Identification	—	—	—	—	—	M					[0] AircraftFlightIdentification	
P-2.4.2	CM Long TSAP	—	—	—	—	—	M					[1] LongTsap	
P-2.4.3	Ground Initiated Applications	—	—	—	—	—	M					[2] SEQUENCE SIZE(1..256) OF AEQualifierVersionAddress (OPTIONAL)	
P-2.4.4	Air Only Initiated Applications	—	—	—	—	—	M					[3] SEQUENCE SIZE(1..256) OF AEQualifierVersion (OPTIONAL)	
P-2.4.5	Facility Designation	—	—	—	—	—	M					[4] FacilityDesignation (OPTIONAL)	
P-2.4.6	Departure Airport	—	—	—	—	—	M					[5] Airport (OPTIONAL)	
P-2.4.7	Destination Airport	—	—	—	—	—	M					[6] Airport (OPTIONAL)	
P-2.4.8	Departure Date and Time (ETD)	—	—	—	—	—	M					[7] DateTime (OPTIONAL)	
P-2.4.9	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	
P-2.4.1	<b>AircraftFlightIdentification</b>											<b>IA5String</b> SIZE(2..8)	
P-2.4.2	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-2.4.2.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-2.4.2.2	Short TSAP	—	—	—	—	—	M					ShortTsap	
P-2.4.2.2	<b>Short TSAP</b>											<b>ShortTsap ::= SEQUENCE</b>	
P-2.4.2.2.1	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.4.2.2.2	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	



Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.4.3	AE Qualifier Version Address											AEQualifierVersionAddress ::= SEQUENCE	
P-2.4.3.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-2.4.3.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-2.4.3.3	AP Address	—	—	—	—	—	M					APAddress	
P-2.4.3.3	Application Address											APAddress ::= CHOICE	
P-2.4.3.3.1	Long TSAP	—	—	—	—	—	M					[0] LongTsap	
P-2.4.3.3.2	Short TSAP	—	—	—	—	—	M					[1] ShortTsap	
P-2.4.3.3.1	Long TSAP											LongTsap ::= SEQUENCE	
P-2.4.3.3.1.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-2.4.3.3.1.2	Short TSAP	—	—	—	—	—	M					ShortTsap	
P-2.4.3.3.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-2.4.3.3.2.1	ARS	—	—	—	—	—	M					[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.4.3.3.2.2	Local System NSEL and TSEL	—	—	—	—	—	M					[1] OCTET STRING SIZE(10..11)	
P-2.4.4	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-2.4.4.1	AE Qualifier	—	—	—	—	—	M					AEQualifier	
P-2.4.4.2	AP Version	—	—	—	—	—	M					VersionNumber	
P-2.4.6/7	Airport											IA5String SIZE(4)	
P-2.4.8	Date and Time											DateTime ::= SEQUENCE	
P-2.4.8.1	Date	—	—	—	—	—	M					Date	
P-2.4.8.2	Time	—	—	—	—	—	M					Time	
P-2.4.8.1	Date											Date ::= SEQUENCE	
P-2.4.8.1.1	Year	—	—	—	—	—	M					Year	
P-2.4.8.1.2	Month	—	—	—	—	—	M					Month	
P-2.4.8.1.3	Day	—	—	—	—	—	M					Day	
P-2.4.8.1.1	Year											INTEGER (1996..2095)	
P-2.4.8.1.2	Month											INTEGER (1..12)	
P-2.4.8.1.3	Day											INTEGER (1..31)	
P-2.4.8.2	Time											Time ::= SEQUENCE	
P-2.4.8.2.1	Time in Hours	—	—	—	—	—	M					Timehours	
P-2.4.8.2.2	Time in Minutes	—	—	—	—	—	M					Timeminutes	
P-2.4.8.2.1	Timehours											INTEGER (0..23)	
P-2.4.8.2.2	Timeminutes											INTEGER (0..59)	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
<b>P-2.5</b>	<b>CM Server Facility Query Response</b>											<b>CMServerFacilityQueryResponse ::= CHOICE</b>	
P-2.5.1	Info Unavailable	C.2					—	—	—	—	—	[0] InfoUnavailable	
P-2.5.2	Requested Info	C.2					—	—	—	—	—	[1] SEQUENCE SIZE (1..8) OF RequestedInfo	
P-2.5.3	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
<b>P-2.5.1</b>	<b>Info Unavailable</b>											<b>InfoUnavailable ::= ENUMERATED</b>	
P-2.5.1.1	Server Not Supported	M					—	—	—	—	—	(0) serverNotSupported	
P-2.5.1.2	Server Unavailable	M					—	—	—	—	—	(1) serverUnavailable	
P-2.5.1.3	Service Interrupted	M					—	—	—	—	—	(2) serviceInterrupted	
P-2.5.1.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
<b>P-2.5.2</b>	<b>Requested Info</b>											<b>RequestedInfo ::= SEQUENCE</b>	
P-2.5.2.1	Facility Designation	M					—	—	—	—	—	[0] FacilityDesignation	
P-2.5.2.2	CM Long TSAP	M					—	—	—	—	—	[1] LongTsap (OPTIONAL)	
P-2.5.2.3	Air Initiated Applications	M					—	—	—	—	—	[1] SEQUENCE SIZE(1..256) OF SecAir (OPTIONAL)	
P-2.5.2.4	Ground Only Initiated Applications	M					—	—	—	—	—	[2] SEQUENCE SIZE(1..256) OF SecGnd (OPTIONAL)	
P-2.5.2.5	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
<b>P-2.5.2.2</b>	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-2.5.2.2.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-2.5.2.2.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
P-2.5.2.2.3													
<b>P-2.5.2.2.4</b>	<b>Short TSAP</b>											<b>ShortTsap ::= SEQUENCE</b>	
P-2.5.2.2.5	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.5.2.2.6	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
<b>P-2.5.2.3</b>	<b>SecAir</b>											<b>SecAir ::= SEQUENCE</b>	
P-2.5.2.3.1	Application Information	M					—	—	—	—	—	[0] AQualifierVersionAddress	
P-2.5.2.3.2	Public Key	O					—	—	—	—	—	[1] PublicKey (OPTIONAL)	a
P-2.5.2.3.3	Domain Flag	O					—	—	—	—	—	[2] DomainFlag (OPTIONAL)	
P-2.5.2.3.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
<b>P-2.5.2.3.1</b>	<b>AE Qualifier Version Address</b>											<b>AEQualifierVersionAddress ::= SEQUENCE</b>	
P-2.5.2.3.1.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-2.5.2.3.1.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-2.5.2.3.1.3	AP Address	M					—	—	—	—	—	APAddress	
<b>P-2.5.2.3.1.3</b>	<b>Application Address</b>											<b>APAddress ::= CHOICE</b>	
P-2.5.2.3.1.3.1	Long TSAP	M					—	—	—	—	—	[0] LongTsap	
P-2.5.2.3.1.3.2	Short TSAP	M					—	—	—	—	—	[1] ShortTsap	
<b>P-2.5.2.3.1.3.3</b>	<b>Long TSAP</b>											<b>LongTsap ::= SEQUENCE</b>	
P-2.5.2.3.1.3.3.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-2.5.2.3.1.3.3.2	Short TSAP	M					—	—	—	—	—	ShortTsap	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.5.2.3.1.3	Short TSAP											ShortTsap ::= SEQUENCE	
P-2.5.2.3.1.3	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.5.2.3.1.3	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
P-2.5.2.3.2	Public Key											PublicKey ::= SEQUENCE	
P-2.5.2.3.2.1	Sequence Count	M					—	—	—	—	—	SIZE(1,	
P-2.5.2.3.2.2	Use of Extensibility	X					—	—	—	—	—	...)	a
P-2.5.2.3.2.3	String Length	M					—	—	—	—	—	OCTET STRING (SIZE(43,	
P-2.5.2.3.2.4	Use of Extensibility	X					—	—	—	—	—	...)	
P-2.5.2.3.3	Domain Flag											DomainFlag ::= SEQUENCE	
P-2.5.2.3.3.1	Sequence Count	M					—	—	—	—	—	SIZE(1, BOOLEAN	
P-2.5.2.3.3.2	Use of Extensibility	X					—	—	—	—	—	...)	a
P-2.5.2.4	SecGnd											SecGnd ::= SEQUENCE	
P-2.5.2.4.1	Application Information	M					—	—	—	—	—	[0] AEqualifierVersion	
P-2.5.2.4.2	Public Key	O					—	—	—	—	—	[1] PublicKey (OPTIONAL)	a
P-2.5.2.4.3	Domain Flag	O					—	—	—	—	—	[2] DomainFlag (OPTIONAL)	
P-2.5.2.4.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
P-2.5.2.4.1	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-2.5.2.4.1.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-2.5.2.4.1.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-2.5.2.4.2	Public Key											PublicKey ::= SEQUENCE	
P-2.5.2.4.2.1	Sequence Count	M					—	—	—	—	—	SIZE(1,	
P-2.5.2.4.2.2	Use of Extensibility	X					—	—	—	—	—	...)	a
P-2.5.2.4.2.3	String Length	M					—	—	—	—	—	OCTET STRING (SIZE(43,	
P-2.5.2.4.2.4	Use of Extensibility	X					—	—	—	—	—	...)	
P-2.5.2.4.3	Domain Flag											DomainFlag ::= SEQUENCE	
P-2.5.2.4.3.1	Sequence Count	M					—	—	—	—	—	SIZE(1, BOOLEAN	
P-2.5.2.4.3.2	Use of Extensibility	M					—	—	—	—	—	...)	a
P-2.6	CM Server Facility Update	C.3					—	—	—	—	—	SEQUENCE SIZE (1..8) OF RequestedInfo	
P-2.6	Requested Info											RequestedInfo ::= SEQUENCE	
P-2.6.1	Facility Designation	M					—	—	—	—	—	[0] FacilityDesignation	
P-2.6.2	CM Long TSAP	O					—	—	—	—	—	[1] LongTsap (OPTIONAL)	
P-2.6.3	Air Initiated Applications	O					—	—	—	—	—	[1] SEQUENCE SIZE(1..256) OF SecAir (OPTIONAL)	
P-2.6.4	Ground Only Initiated Applications	O					—	—	—	—	—	[2] SEQUENCE SIZE(1..256) OF SecGnd (OPTIONAL)	
P-2.6.5	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
P-2.6.2	Long TSAP											LongTsap ::= SEQUENCE	
P-2.6.2.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-2.6.2.2	Short TSAP	M					—	—	—	—	—	ShortTsap	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.6.2.2	Short TSAP											ShortTsap ::= SEQUENCE	
P-2.6.2.2.1	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.6.2.2.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
P-2.6.3	SecAir											SecAir ::= SEQUENCE	
P-2.6.3.1	Application Information	M					—	—	—	—	—	[0] AEQualifierVersionAddress	
P-2.6.3.2	Public Key	O					—	—	—	—	—	[1] PublicKey (OPTIONAL)	a
P-2.6.3.3	Domain Flag	O					—	—	—	—	—	[2] DomainFlag (OPTIONAL)	
P-2.6.3.3	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
P-2.6.3.1	AE Qualifier Version Address											AEQualifierVersionAddress ::= SEQUENCE	
P-2.6.3.1.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-2.6.3.1.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-2.6.3.1.3	AP Address	M					—	—	—	—	—	APAddress	
P-2.6.3.1.3	Application Address											APAddress ::= CHOICE	
P-2.6.3.1.3.1	Long TSAP	M					—	—	—	—	—	[0] LongTsap	
P-2.6.3.1.3.2	Short TSAP	M					—	—	—	—	—	[1] ShortTsap	
P-2.6.3.1.3	Long TSAP											LongTsap ::= SEQUENCE	
P-2.6.3.1.3.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-2.6.3.1.3.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
P-2.6.3.1.3	Short TSAP											ShortTsap ::= SEQUENCE	
P-2.6.3.1.3.1	ARS	M					—	—	—	—	—	[0] OCTET STRING SIZE(3) (OPTIONAL)	a
P-2.6.3.1.3.2	Local System NSEL and TSEL	M					—	—	—	—	—	[1] OCTET STRING SIZE(10..11)	
P-2.6.3.2	Public Key											PublicKey ::= SEQUENCE	
P-2.6.3.2.1	Sequence Count	M					—	—	—	—	—	SIZE(1,	
P-2.6.3.2.2	Use of Extensibility	X					—	—	—	—	—	...)	a
P-2.6.3.2.3	String Length	M					—	—	—	—	—	OCTET STRING (SIZE(43,	
P-2.6.3.2.4	Use of Extensibility	X					—	—	—	—	—	...)	
P-2.6.3.3	Domain Flag											DomainFlag ::= SEQUENCE	
P-2.6.3.3.1	Sequence Count	M					—	—	—	—	—	SIZE(1, BOOLEAN	
P-2.6.3.3.2	Use of Extensibility	X					—	—	—	—	—	...)	a
P-2.6.4	SecGnd											SecGnd ::= SEQUENCE	
P-2.6.4.1	Application Information	M					—	—	—	—	—	[0] AEQualifierVersion	
P-2.6.4.2	Public Key	O					—	—	—	—	—	[1] PublicKey (OPTIONAL)	a
P-2.6.4.3	Domain Flag	O					—	—	—	—	—	[2] DomainFlag (OPTIONAL)	
P-2.6.4.4	Use of Extensibility	X					—	—	—	—	—	Use of Extensibility	
P-2.6.4.1	AE Qualifier Version											AEQualifierVersion ::= SEQUENCE	
P-2.6.4.1.1	AE Qualifier	M					—	—	—	—	—	AEQualifier	
P-2.6.4.1.2	AP Version	M					—	—	—	—	—	VersionNumber	
P-2.6.4.2	Public Key											PublicKey ::= SEQUENCE	

Source: Chapter 4 - ASN.1		Send					Receive					PICS	Notes
Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Protocol Elements	
P-2.6.4.2.1	Sequence Count	M					—	—	—	—	—	SIZE(1,	
P-2.6.4.2.2	Use of Extensibility	X					—	—	—	—	—	...)	a
P-2.6.4.2.3	String Length	M					—	—	—	—	—	OCTET STRING (SIZE(43,	
P-2.6.4.2.4	Use of Extensibility	X					—	—	—	—	—	...)	
P-2.6.4.3	Domain Flag											DomainFlag ::= SEQUENCE	
P-2.6.4.3.1	Sequence Count	M					—	—	—	—	—	SIZE(1, BOOLEAN	
P-2.6.4.3.2	Use of Extensibility	X					—	—	—	—	—	...)	a
P-2.7	AE Qualifier											INTEGER (0..255)	
P-2.8	FacilityDesignation											IA5String SIZE(4..8)	
P-2.9	VersionNumber											INTEGER (1..255)	

**OPLINKP Profile:**

- C.1 If Update (G-UP-FU) supported then **M** else —
- C.2 If Server Facility Query (G-SQ-FU) supported then **M** else —
- C.3 If Server Facility Update (G-SF-FU) supported then **M** else —

**Notes:**

- a Imported from the ATNPKIVersion2 module