Annex A

CM Air/Ground PICS/OICS

EUROCONTROL

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 2 PICS/OICS Proforma

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SUMMARY

This working paper contains the OPLINKP Profile PICS/OICS proforma tables for CM 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	**Implementation Details**
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 Two - 1999		
I-3.2	CM Protocol Version	Version 1		
I-3.3	Addenda, amendments and corrigenda implemented			
I-3.4	Defect Reports implemented			

Table S-1: CM Protocol 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-air-ASE	M			CM/Air	
S-1.2	CM-ground-ASE	Not applicable			CM/Ground	
S-1.3	Air CM update supported	O			A-UP-FU	
S-1.4	Air CM contact supported	O			A-CO-FU	
S-1.5	Air CM maintain dialogue supported	M			—	
S-1.6	Ground CM maintain dialogue supported	Not applicable to Airborne Systems			—	
S-1.7	Ground CM update supported				G-UP-FU	
S-1.8	Ground CM contact supported				G-CO-FU	
S-1.9	Ground CM forward receiving user supported				G-FO-FU	
S-1.10	Ground CM forward initiating user supported				G-FO-IN	

Table S-2: CM-ASE Conformant Configurations

Source: Chapter 8 - Subsetting Rules		OPLINKP Profile	Profile Status	IMP Support	Notes
Ref No	List of Predicates: Ground ASE				
S-2.1	I. CM/ground				
S-2.2	II. CM/ground + G-FO-IN				
S-2.3	III. CM/ground + G-FO-FU				
S-2.4	IV. CM/ground + G-FO-FU + G-FO-IN				
S-2.5	V. CM/ground + G-UP-FU				
S-2.6	VI. CM/ground + G-UP-FU + G-FO-IN		Not Applicable		
S-2.7	VII. CM/ground + G-UP-FU + G-FO-FU		to		
S-2.8	VIII. CM/ground + G-UP-FU + G-FO-FU + G-FO-IN		Airborne Systems		
S-2.9	IX. CM/ground + G-CO-FU				
S-2.10	X. CM/ground + G-CO-FU + G-FO-IN				
S-2.11	XI. CM/ground + G-CO-FU + G-FO-FU				
S-2.12	XII. CM/ground + G-CO-FU + G-FO-FU + G-FO-IN				
S-2.13	XIII. CM/ground + G-UP-FU + G-CO-FU				
S-2.14	XIV. CM/ground + G-UP-FU + G-CO-FU + G-FO-IN				
S-2.15	XV. CM/ground + G-UP-FU + G-CO-FU + G-FO-FU				
S-2.16	XVI CM/ground + G-CO-FU + G-UP-FU + G-FO-FU + G-FO-IN				
	List of Predicates: Air ASE				
S-2.17	I. CM/Air	C.1			
S-2.18	II. CM/Air + A-UP-FU	C.1			
S-2.19	III. CM/Air + A-CO-FU	C.1			
S-2.20	IV. CM/Air + A-UP-FU + A-CO-FU	C.1			

OPLINKP Profile:

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

Table S-3: Supported CM Service Primitives

Source: Chapter 3 - Abstract Service		Sender (req, [cnf])			Receiver (ind, [rsp])			
Ref No	Service Primitives	OPLINKP Status	Profile Status	IMP Support	OPLINKP Status	Profile Status	IMP Support	Notes
S-3.1	CM-logon	M			—	—	—	See S-4
S-3.2	CM-update	—	—	—	M			See S-5
S-3.3	CM-contact	—	—	—	M			See S-6
S-3.4	CM-end	—	—	—	M			See S-7
S-3.5	CM-forward	Not applicable to Airborne Systems						
S-3.6	CM-user-abort	M			M			See S-8
S-3.7	CM-provider-abort	—	—	—	M			See S-9

Table S-4: CM Logon Service - Airborne User (Request, Confirmation)

Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons	ASN.1 Description	Notes
	Source: Chapter 3 - Abstract Service							
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)	M						
S-4.2	**Capability of the airborne system to specify its own Aircraft Address**							
S-4.2.1	Aircraft Address = Bit String SIZE(24)	M		—		—		
S-4.3	**Capability of the airborne system to understand CM ASE Version Number**							
S-4.3.1	Version Number = INTEGER (1..255)	M						
S-4.4	**Capability of the airborne system to specify a logon request**							
S-4.4.1	Logon Request	M					See CMLogonRequest (Table P-1)	
S-4.5	**Capability of the airborne system to understand a logon response**							
S-4.5.1	Logon Response	M					See CMLogonResponse (Table P-1)	
S-4.6	**Capability of the airborne system to request a Class of Communication Service**							
S-4.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	O						
S-4.7	**Capability of the airborne system to understand a maintain dialogue indication**							
S-4.7.1	'Maintain'	M						

Table S-5: CM Update Service - Airborne User (Indication)

Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons	ASN.1 Description	Notes
Source: Chapter 3 - Abstract Service		**OICS** Operational Use						
S-5.1	**Aircraft Address**	Not visible to						
S-5.1.1	Aircraft Address = Bit String SIZE(24)	Airborne User						
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						
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						
S-5.4.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	Airborne User						

OPLINKP Profile:

C.1　　If Update (A-UP-FU, in configurations II or IV) supported then **M** else **—**

Table S-6: CM Contact Service - Airborne User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
			Operational Use					
		OPLINKP Profile	Profile		Implementation			
Ref No	Operational Elements		Status	Cons	Status	Cons		
S-6.1	**Aircraft Address**		Not visible to					
S-6.1.1	Aircraft Address = Bit String SIZE(24)		Airborne User					
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						
S-6.3	**Capability of the airborne system to understand a contact request**							
S-6.3.1	Contact Request	C.1					See CMContactRequest (Table P-1)	
S-6.4	**Capability of the airborne system to specify a contact response**							
S-6.4.1	Contact Response	C.1					See CMContactResponse (Table P-1)	
S-6.5	Class of Communication Service		Not visible to					
S-6.5.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'		Airborne User					

OPLINKP Profile:

    C.1   If Contact (A-CO-FU, in configurations III or IV) supported then **M** else **—**

Table S-7: CM End Service - Airborne User (Indication)

Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Description	Notes
Source: Chapter 3 - Abstract Service		\<OICS\>	\<Operational Use\>					
S-7.1	Capability of the airborne system to understand an End indication	M						

Table S-8: CM User Abort Service - Airborne User (Request, Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	
		Operational Use						
		OPLINKP Profile	Profile		Implementation			
Ref No	Operational Elements		Status	Cons	Status	Cons		Notes
S-8.1	Capability of the airborne system to request a user abort	M						
S-8.2	Capability of the airborne system to receive a user abort	M						

Table S-9: CM Provider Abort Service - Airborne User (Indication)

Ref No	Operational Elements	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	ASN.1 Description	Notes
Source: Chapter 3 - Abstract Service		OICS						
			Operational Use				ASN.1 Description	
S-9.1	**Capability of the airborne system to receive a provider abort**							
S-9.1.1	Reason	M					See CMAbortReason (Table P-1)	

Table S-12: CM Technical Timers

Source: Chapter 5 - Protocol Definition			OICS						Notes
			Operational Use						
			OPLINKP Profile		Profile		Implementation		
Ref No	CM Service	Timer	Status	Suggested Value	Status	Suggested Value	Status	Value Used	Notes
S-12.1	CM Logon								
S-12.1.1		t-logon	M	4 minutes					
S-12.2	CM Update								
S-12.2.1		t-update	C.1	4 minutes					
S-12.3	CM Contact				Not used				
S-12.3.1		t-contact	C.2	8 minutes	by				
					Airborne Systems				
S-12.4	CM Forward								
S-12.4.1		t-forward	C.3	4 minutes					
S-12.5	CM End								
S-12.5.1		t-end	C.4	4 minutes					

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 Maintain Dialogue supported then **M** else **—**

Table M-1: CM Messages (top level)

		Send					Receive						
Source: Chapter 4 - ASN.1		OPLINKP Profile	Profile		Implementation		OPLINKP Profile	Profile		Implementation		**ASN.1 Protocol Elements**	
Ref No	Operational Elements	OPLINKP Profile	Status	Cons	Status	Cons	OPLINKP Profile	Status	Cons	Status	Cons		Notes
M-1.1	**CM Aircraft Messages**											**CMAircraftMessage ::= CHOICE**	
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	
M-1.2	**CM Ground Messages**											**CMGroundMessage ::= CHOICE**	
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	
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	
M-1.2.7	Use of Extensibility	—	—	—	—	—	M					Use of Extensibility	

OPLINKP Profile:

C.1　　If Update (A-UP-FU, in configurations II or IV) supported then M else —

C.2　　If Contact (A-CO-FU, in configurations III or IV) supported then M else —

Table P-1: CM Message Components

Ref No	Operational Elements	Send OPLINKP Profile	Send Profile Status	Send Profile Cons	Send Implementation Status	Send Implementation Cons	Receive OPLINKP Profile	Receive Profile Status	Receive Profile Cons	Receive Implementation Status	Receive Implementation Cons	PICS ASN.1 Protocol Elements	Notes
Source: Chapter 4 - ASN.1													
P-1.1	**CM Abort Reason**											**CMAbortReason ::= ENUMERATED**	
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	
P-1.2	**CM Contact Request**											**CMContactRequest ::= SEQUENCE**	
P-1.2.1	Facility Designation	—	—	—	—	—	M					FacilityDesignation	
P-1.2.2	Address	—	—	—	—	—	M					LongTsap	
P-1.2.1	**FacilityDesignation**											**IA5String** SIZE(4..8)	
P-1.2.2	**Long TSAP**											**LongTsap ::= SEQUENCE**	
P-1.2.2.1	RDP	—	—	—	—	—	M					OCTET STRING SIZE(5)	
P-1.2.2.2	Short TSAP	—	—	—	—	—	M					ShortTsap	
P-1.2.2.2	**Short TSAP**											**ShortTsap ::= SEQUENCE**	
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)	
P-1.3	**CM Contact Response**	M					—	—	—	—	—	**Response**	
P-1.3	**Response**											**Response**	
P-1.3.1	Contact Successful	M					—	—	—	—	—	(0) *contactSuccess*	
P-1.3.2	Contact Not Successful	M					—	—	—	—	—	(1) *contactNotSuccessful*	
P-1.4	**CM Forward Request**	Not used by Airborne Systems					Not used by Airborne Systems					**CMLogonRequest**	
P-1.5	**CM ForwardResponse**											**CMForwardResponse ::= ENUMERATED**	
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*	
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)	

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

EUROCONTROL

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 2 PICS/OICS Proforma

Prepared by: Mike Harcourt

SUMMARY

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

Worksheet	**Tables**
WGA Front Sheet	
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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 Options
S-2 Configs	Table S-2: CM-ASE Conformant Configurations
S-3 Services	Table S-3: Supported CM Service Primitives - Ground User
S-4 Logon Service	Table S-4: CM Logon Service - Ground User (Indication, Response)
S-5 Update Service	Table S-5: CM Update Service - Ground User (Request)
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M-1 Top Level Msg	Table M-1: CM Messages (top level)
P-1 Msg Components	Table P-1: CM 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	
	Implementation Information	Implementation Details
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 Two - 1999		
I-3.2	CM Protocol Version	Version 1		
I-3.3	Addenda, amendments and corrigenda implemented			
I-3.4	Defect Reports implemented			

Table S-1: CM Protocol Options

Ref No	Source: Chapter 8 - Subsetting Rules Protocol Option	OPLINKP Profile	Profile Status	IMP Support	Associated Predicate	Notes
S-1.1	CM-air-ASE		Not applicable		CM/Air	
S-1.2	CM-ground-ASE	M			CM/Ground	
S-1.3	Air CM update supported		Not applicable		A-UP-FU	
S-1.4	Air CM contact supported		to		A-CO-FU	
S-1.5	Air CM maintain dialogue supported		Ground Systems		—	
S-1.6	Ground CM maintain dialogue supported	O			—	
S-1.7	Ground CM update supported	O			G-UP-FU	
S-1.8	Ground CM contact supported	O			G-CO-FU	
S-1.9	Ground CM forward receiving user supported	O			G-FO-FU	
S-1.10	Ground CM forward initiating user supported	O			G-FO-IN	

Table S-2: CM-ASE Conformant Configurations

Source: Chapter 8 - Subsetting Rules		OPLINKP Profile	Profile Status	IMP Support	Notes
Ref No	**List of Predicates: Ground ASE**				
S-2.1	I. CM/ground	C.1			
S-2.2	II. CM/ground + G-FO-IN	C.1			
S-2.3	III. CM/ground + G-FO-FU	C.1			
S-2.4	IV. CM/ground + G-FO-FU + G-FO-IN	C.1			
S-2.5	V. CM/ground + G-UP-FU	C.1			
S-2.6	VI. CM/ground + G-UP-FU + G-FO-IN	C.1			
S-2.7	VII. CM/ground + G-UP-FU + G-FO-FU	C.1			
S-2.8	VIII. CM/ground + G-UP-FU + G-FO-FU + G-FO-IN	C.1			
S-2.9	IX. CM/ground + G-CO-FU	C.1			
S-2.10	X. CM/ground + G-CO-FU + G-FO-IN	C.1			
S-2.11	XI. CM/ground + G-CO-FU + G-FO-FU	C.1			
S-2.12	XII. CM/ground + G-CO-FU + G-FO-FU + G-FO-IN	C.1			
S-2.13	XIII. CM/ground + G-UP-FU + G-CO-FU	C.1			
S-2.14	XIV. CM/ground + G-UP-FU + G-CO-FU + G-FO-IN	C.1			
S-2.15	XV. CM/ground + G-UP-FU + G-CO-FU + G-FO-FU	C.1			
S-2.16	XVI CM/ground + G-CO-FU + G-UP-FU + G-FO-FU + G-FO-IN	C.1			
	List of Predicates: Air ASE				
S-2.17	I. CM/Air				
S-2.18	II. CM.air + A-UP-FU	Not applicable to Ground Systems			
S-2.19	III. CM/air + A-CO-FU				
S-2.20	IV. CM/air + A-UP-FU + A-CO-FU				

OPLINKP Profile:

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

Table S-3: Supported CM Service Primitives

		Sender (req, [cnf])			Receiver (ind, [rsp])			
Source: Chapter 3 - Abstract Service		**OPLINKP Profile**	**Profile Status**	**IMP Support**	**OPLINKP Profile**	**Profile Status**	**IMP Support**	
Ref No	**Service Primitives**							**Notes**
S-3.1	CM-logon	—	—	—	M			See S-4
S-3.2	CM-update	C.1			—	—	—	See S-5
S-3.3	CM-contact	C.2			—	—	—	See S-6
S-3.4	CM-end	C.3			—	—	—	See S-7
S-3.5	CM-forward	C.4			C.5			See S-10 & S-11
S-3.6	CM-user-abort	M			M			See S-8
S-3.7	CM-provider-abort	—	—	—	M			See S-9

OPLINKP Profile:

    C.1   If Update (G-UP-FU, in any of configurations V, VI, VII, VIII, XIII, XIV, XV or XVI) supported then **M** else **—**

    C.2   If Contact (G-CO-FU, in any of configurations IX, X, XI, XII, XIII, XIV, XV or XVI) supported then **M** else **—**

    C.3   If Maintain Dialogue feature is supported then **M** else —

    C.4   If Forward Initiator (G-FO-IN, in any of configurations II, IV, VI, VIII, X, XII, XIV or XVI) supported then **M** else **—**

    C.5   If Forward Receiver (G-FO-FU, in any of configurations III, IV, VII, VIII, XI, XV or XVI) supported then **M** else **—**

Table S-4: CM Logon Service - Ground User (Indication, Response)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
			Operational Use					
		OPLINKP Profile	Profile		Implementation			
Ref No	Operational Elements		Status	Cons	Status	Cons		
S-4.1	**Facility Designation**		Not visible to					
S-4.1.1	ICAO facility designation = IA5 String SIZE(4..8)		Ground User					
S-4.2	**Capability of the ground system to understand an Aircraft Address**							
S-4.2.1	Aircraft Address = Bit String SIZE(24)	M		—		—		
S-4.3	**Capability of the ground system to understand CM ASE Version Number**							
S-4.3.1	Version Number = INTEGER (1..255)	M						
S-4.4	**Capability of the ground system to understand a logon request**							
S-4.4.1	Logon Request	M					See CMLogonRequest (Table P-1)	
S-4.5	**Capability of the ground system to specify a logon response**							
S-4.5.1	Logon Response	M					See CMLogonResponse (Table P-1)	
S-4.6	**Class of Communication Service**		Not visible to					
S-4.6.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'		Ground User					
S-4.7	**Capability of the ground system to specify a maintain dialogue request**							
S-4.7.1	'Maintain'	C.1						

OPLINKP Profile:

C.1   If Maintain Dialogue supported then **M** else **—**

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

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
			Operational Use					
		OPLINKP Profile	Profile		Implementation			
Ref No	Operational Elements		Status	Cons	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						

OPLINKP Profile:

C.1　　If Update (G-UP-FU, in any of configurations V, VI, VII, VIII, XIII, XIV, XV or XVI) supported then **M** else **—**

C.2　　If Update (G-UP-FU, in any of configurations V, VI, VII, VIII, XIII, XIV, XV or XVI) supported and there is not an existing CM dialogue then **M** else —

C.3　　If Update (G-UP-FU, in any of configurations V, VI, VII, VIII, XIII, XIV, XV or XVI) supported then **O** else **—**

Table S-6: CM Contact Service - Ground 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	ASN.1 Description	Notes
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 a contact request**							
S-6.3.1	Contact Request	C.1					See CMContactRequest (Table P-1)	
S-6.4	**Capability of the ground system to understand a contact response**							
S-6.4.1	Contact Response	C.1					See CMContactResponse (Table P-1)	
S-6.5	**Capability of the ground system to request a Class of Communication Service**							
S-6.5.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.3						

OPLINKP Profile:

C.1   If Contact (G-CO-FU, in any of configurations IX, X, XI, XII, XIII, XIV, XV or XVI) supported then M else —

C.2   If Contact (G-CO-FU, in any of configurations IX, X, XI, XII, XIII, XIV, XV or XVI) supported and there is not an existing CM dialogue then **M** else —

C.3   If Contact (G-CO-FU, in any of configurations IX, X, XI, XII, XIII, XIV, XV or XVI) supported then **O** else **—**

Table S-7: CM End Service - Ground User (Request)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description		
			Operational Use						
		OPLINKP Profile	Profile		Implementation				
Ref No	**Operational Elements**		**Status**	**Cons**	**Status**	**Cons**			**Notes**
S-7.1	**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-8: CM User Abort Service - Ground User (Request, Indication)

Ref No	Operational Elements	OPLINKP Profile	OICS Operational Use Profile Status	Cons	Implementation Status	Cons	ASN.1 Description	Notes
Source: Chapter 3 - Abstract Service								
S-8.1	**Capability of the ground system to request a user abort**	M						
S-8.2	**Capability of the ground system to receive a user abort**	M						

Table S-9: CM Provider Abort Service - Ground User (Indication)

Source: Chapter 3 - Abstract Service		OICS					ASN.1 Description	Notes
			Operational Use					
		OPLINKP Profile	Profile		Implementation			
Ref No	Operational Elements		Status	Cons	Status	Cons		
S-9.1	Capability of the ground system to receive a provider abort							
S-9.1.1	Reason	M					See CMAbortReason (Table P-1)	

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

Ref No	Operational Elements	OPLINKP Profile	Profile Status	Profile Cons	Implementation Status	Implementation Cons	ASN.1 Description	Notes
	Source: Chapter 3 - Abstract Service		**OICS**					
			Operational Use					
							ASN.1 Description	
S-10.1	**Capability of the initiating ground system to specify a ground system Facility Designation for the receiving system**							
S-10.1.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1						
S-10.2	**Capability of the initiating ground system to specify its own Facility Designation**							
S-10.2.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1						
S-10.3	**Capability of the initiating ground system to specify a forward request**							
S-10.3.1	Forward Request	C.1					See CMForwardRequest (Table P-1)	
S-10.4	**Capability of the initiating ground system to request a Class of Communication Service**							
S-10.4.1	One from the abstract values: 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'	C.2						
S-10.5	**Capability of the initiating ground system to understand a the result of a forward request**							
S-10.5.1	Result	C.1					See CMForwardResponse (Table P-1)	

OPLINKP Profile:

    C.1   If Forward Initiator (G-FO-IN, in any of configurations II, IV, VI, VIII, X, XII, XIV or XVI) supported then M else —

    C.2   If Forward Initiator (G-FO-IN, in any of configurations II, IV, VI, VIII, X, XII, XIV or XVI) supported then **O** else **—**

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

Ref No	Operational Elements	OICS OPLINKP Profile	Operational Use Profile Status	Cons	Implementation Status	Cons	ASN.1 Description	Notes
S-11.1	**Capability of the responding ground system to understand a Facility Designation for the initiating system**							
S-11.1.1	ICAO facility designation = IA5 String SIZE(4..8)	C.1						
S-11.2	**Capability of the airborne system to understand CM ASE Version Number**							
S-11.2.1	Version Number = INTEGER (1..255)	C.1						
S-11.3	**Capability of the responding ground system to understand a forward request**							
S-11.3.1	Forward Request	C.1					See CMForwardRequest (Table P-1)	
S-11.4	**Capability of the responding ground system to specify the result of a forward request**							
S-11.4.1	Result	C.1					See CMForwardResponse (Table P-1)	

OPLINKP Profile:

    C.1   If Forward Receiver (G-FO-FU, in any of configurations III, IV, VII, VIII, XI, XV or XVI) supported then M else —

Table S-12: CM ASE Technical Timers

Ref No	CM Service	Timer	OICS Operational Use — OPLINKP Profile Status	OPLINKP Profile Suggested Value	Profile Status	Profile Suggested Value	Implementation Status	Implementation Value Used	Notes
S-12.1	CM Logon								
S-12.1.1		t-logon	M	4 minutes		Not used by Ground Systems			
S-12.2	**CM Update**								
S-12.2.1		t-update	C.1	4 minutes					
S-12.3	**CM Contact**								
S-12.3.1		t-contact	C.2	8 minutes					
S-12.4	**CM Forward**								
S-12.4.1		t-forward	C.3	4 minutes					
S-12.5	**CM End**								
S-12.5.1		t-end	C.4	4 minutes					

OPLINKP Profile:

    C.1   If Update (G-UP-FU, in any of configurations V, VI, VII, VIII, XIII, XIV, XV or XVI) supported then M else —

    C.2   If Contact (G-CO-FU, in any of configurations IX, X, XI, XII, XIII, XIV, XV or XVI) supported then M else —

    C.3   If Forward Initiator (G-FO-IN, in any of configurations II, IV, VI, VIII, X, XII, XIV or XVI) supported then M else —

    C.4   If Maintain Dialogue supported then **M** else **—**

Table M-1: CM Messages (top level)

Source: Chapter 4 - ASN.1		Send					Receive					ASN.1 Protocol Elements	Notes
		OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons	OPLINKP Profile	Profile Status	Cons	Implementation Status	Cons		
Ref No	**Operational Elements**												
M-1.1	**CM Aircraft Messages**											**CMAircraftMessage ::= CHOICE**	
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	
M-1.2	**CM Ground Messages**											**CMGroundMessage ::= CHOICE**	
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, in any of configurations V, VI, VII, VIII, XIII, XIV, XV or XVI) supported then M else —

C.2   If Contact (G-CO-FU, in any of configurations IX, X, XI, XII, XIII, XIV, XV or XVI) supported then M else —

C.3   If Forward Initiator (G-FO-IN, in any of configurations II, IV, VI, VIII, X, XII, XIV or XVI) supported then M else —

C.4   If Forward Receiver (G-FO-FU, in any of configurations III, IV, VII, VIII, XI, XV or XVI) supported then M else —

Table P-1: CM Message Components

		Send					Receive					PICS	
Source: Chapter 4 - ASN.1		OPLINKP	Profile		Implementation		OPLINKP	Profile		Implementation			
Ref No	**Operational Elements**	**Profile**	**Status**	**Cons**	**Status**	**Cons**	**Profile**	**Status**	**Cons**	**Status**	**Cons**	**ASN.1 Protocol Elements**	**Notes**
P-1.1	**CM Abort Reason**											**CMAbortReason ::= ENUMERATED**	
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	
P-1.2	**CM Contact Request**											**CMContactRequest ::= SEQUENCE**	
P-1.2.1	Facility Designation	C.1					—	—	—	—	—	FacilityDesignation	
P-1.2.2	Address	C.1					—	—	—	—	—	LongTsap	
P-1.2.1	**FacilityDesignation**											**IA5String** SIZE(4..8)	
P-1.2.2	**Long TSAP**											**LongTsap ::= SEQUENCE**	
P-1.2.2.1	RDP	M					—	—	—	—	—	OCTET STRING SIZE(5)	
P-1.2.2.2	Short TSAP	M					—	—	—	—	—	ShortTsap	
P-1.2.2.2	**Short TSAP**											**ShortTsap ::= SEQUENCE**	
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)	
P-1.3	**CM Contact Response**	—	—	—	—	—	C.1					**Response**	
P-1.3.1	**Response**											**Response**	
P-1.3.1.1	Contact Successful	—	—	—	—	—	M					(0) *contactSuccess*	
P-1.3.1.2	Contact Not Successful	—	—	—	—	—	M					(1) *contactNotSuccessful*	
P-1.4	**CM Forward Request**	C.2					M					**CMLogonRequest**	
P-1.5	**CM ForwardResponse**											**CMForwardResponse ::= ENUMERATED**	
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*	
P-1.6	**CM Logon Request**											**CMLogonRequest ::= SEQUENCE**	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)	

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

		Send					Receive					PICS	
Source: Chapter 4 - ASN.1		OPLINKP	Profile		Implementation		OPLINKP	Profile		Implementation		**ASN.1 Protocol Elements**	
Ref No	**Operational Elements**	**Profile**	**Status**	**Cons**	**Status**	**Cons**	**Profile**	**Status**	**Cons**	**Status**	**Cons**		**Notes**
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, in any of configurations IX, X, XI, XII, XIII, XIV, XV or XVI) supported then M else —

C.2   If Forward Initiator (G-FO-IN, in any of configurations II, IV, VI, VIII, X, XII, XIV or XVI) 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	
		OPLINKP	Profile		Implementation		OPLINKP	Profile		Implementation		ASN.1 Protocol Elements	
Ref No	Operational Elements	Profile	Status	Cons	Status	Cons	Profile	Status	Cons	Status	Cons		Notes

C.4   If Update (G-UP-FU, in any of configurations V, VI, VII, VIII, XIII, XIV, XV or XVI) 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