

IpConv Protocol Stack

Conformance Statement

TASE.2 Server

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PICS

The following Annex A of IEC 60870-6-702 standard defines the functionality as implemented by the the ipConv TASE.2 Server protocol stack. Implemented functions are marked with .

Annex A (normative)

ISPICS requirements lists

A.1 General

This annex describes the TASE.2, ACSE, presentation and session requirements in terms of tables which reference the base standard PICS proforma. The MMS requirements are also described in terms of tables which were derived from the base standard. The tables are intended to give a precise specification of requirements. In case of arbitration or dispute, this annex takes precedence over clause 6.

In the PICS proforma reference column of the tables in A.3 and A.5 to A.7, and in the lists of conditional expressions underneath the tables, tables within the base standard PICS proformas are referenced. The first letter identifies the specific PICS proforma:

I – TASE.2 – IEC 60870-6-503;

A – ACSE – ISO/IEC 8650-2;

P – Presentation – ISO/IEC 8823-2;

S – Session – ISO/IEC 8327-2.

The characters from the second character to the solidus (/) form a reference to the specific subclause in annex A of that PICS proforma which contains the table in question. The number after the solidus references the row number in the table.

Coupling between layers is accounted for in this standard. Optional "o" items can be chosen without regard to the affect on another layer.

A.2 Classification of requirements

Throughout this annex, to specify the level of support for each feature, the following classification is used.

Client-CR: Client conformance requirement

Server-CR: Server conformance requirement

A.2.1 Base column

The "Base" column reflects the definitions and specifications in the appropriate base standard. Each entry in this column is chosen from the following list:

mandatory; m: this feature shall be supported, i.e. its syntax and procedures shall be implemented as specified in the base standard. However, it is not a requirement that the feature shall be used in all instances of communication, unless mandated by the base standard;

optional; o: any feature denoted by "o" is left to the implementation as to whether that feature is implemented or not. If a parameter is optionally supported, then the syntax shall be implemented, but it is left to each implementation whether the procedures are implemented or not.

A.2.2 F/S column

The "F/S" column reflects the requirements of this Functional Standard. Each entry in this column is chosen from the following terminology:

supported; m: any feature denoted by "m" is mandatory or optional in the base standard. This feature shall be supported, i.e. its syntax and procedures shall be implemented as specified in the base standard or in this ISP by all implementations claiming conformance to this standard. However, it is not a requirement that the feature shall be used in all instances of communication, unless mandated by the base standard or stated otherwise in this profile;

optionally supported; o: any feature denoted by "o" is left to the implementation as to whether that feature is implemented or not. If a parameter is optionally supported, then the syntax shall be implemented, but it is left to each implementation whether the procedures are implemented or not;

conditionally supported; c: any feature denoted by "c" shall be supported under the conditions specified in this standard. If these conditions are not met, the feature is outside the scope of this standard;

excluded; x: any feature denoted by "x" is excluded in this profile, i.e. an implementation shall behave as if the feature were not implemented;

outside of scope; i: any feature denoted by "i" is outside the scope of this standard, i.e. it may be ignored, and will therefore not be subject to a profile conformance test. However, the syntax of all parameters of supported PDUs shall be implemented, even if the procedures are not (i.e. the receiver shall be able to decode the PDU);

not applicable; –: any feature denoted by "–" is not defined in the context where it is mentioned, e.g. a parameter which is not part of the respective PDU. The occurrence of "not applicable" features is mainly due to the format of the tables in the ISPICS requirements list.

Where the F/S entry contains two classifications separated by a comma, these reference the sending and receiving capabilities, respectively.

A.2.3 Status column

The status column reflects the classification to be found in the base standard PICS proforma:

o: optional;

c: conditional;

o. n: optional with at least one of the marked items being selected.

The definitions of conditional items may be found in the respective PICS proformas.

Where the status entry contains two classifications separated by a comma, these reference the sending and receiving capabilities, respectively.

A.2.4 Profile column

The profile column reflects the requirement of this profile. Each entry in this column is chosen from the following list:

- m: mandatory support;
- c: conditional support;
- o.n: optional with at least one of the marked items being selected;
- i outside the scope;
- : not applicable.

Where the profile entry contains two classifications, separated by a comma, these reference the sending and receiving capabilities, respectively.

A.3 TASE.2

Throughout this clause, the entry m^n denotes that the item is mandatory for conformance to block n.

Table A.1 – Client/Server capability

PICS proforma reference	Capability	Base	F/S
I. /1	Client control centre		o.1
I. /2	Server control centre		o.1 <input checked="" type="checkbox"/>

Table A.2 – TASE.2 CBBs

PICS proforma reference	Conformance building block	Base	F/S	
			Client-CR	Server-CR
I. /1	Basic Services	m	m	m <input checked="" type="checkbox"/>
I. /2	Extended Conditions	o	o	o <input checked="" type="checkbox"/>
I. /3	Blocked Transfers	o	o	O
I. /4	Information Message	o	o	O <input checked="" type="checkbox"/>
I. /5	SBO Device Control	o	o	O <input checked="" type="checkbox"/>
I. /6	Programs	o	o	O
I. /7	Events	o	o	o <input checked="" type="checkbox"/>
I. /8	Accounts	o	o	O
I. /9	Time Series	o	o	O

Table A.3 – Association management

PICS proforma reference	Association management	Base	F/S	
			Client-CR	Server-CR
I. /1	Supported Features	m^1	m^1	m^1 <input checked="" type="checkbox"/>
I. /2	QOS	o	o	o
I. /3	Associate Operation	m^1	m^1	m^1 <input checked="" type="checkbox"/>
I. /4	Conclude Operation	m^1	m^1	m^1 <input checked="" type="checkbox"/>
I. /5	Abort Operation	m^1	m^1	m^1 <input checked="" type="checkbox"/>

Table A.4 – Data value

PICS proforma reference	Data values	Base	F/S	
			Client-CR	Server-CR
I. /1	Data Value Model	m^1	m^1	m^1 <input checked="" type="checkbox"/>
I. /2	VCC-specific scope (see note)	o	m^1	o <input checked="" type="checkbox"/>
I. /3	ICC-specific scope (see note)	o	m^1	o
I. /4	Get Data Value Operation	o, m^1	o	m^1 <input checked="" type="checkbox"/>
I. /5	Set Data Value Operation	o, m^1	o	m^1 <input checked="" type="checkbox"/>
I. /6	Get Data Value Names Operation	o, m^1	o	m^1 <input checked="" type="checkbox"/>

I. /7	Get Data Value Type Operation	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /8	IndicationPoint Object	m ¹ , m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>
I. /9	ControlPoint Object	m ⁵ , m ⁵	m ⁵	m ⁵ <input checked="" type="checkbox"/>
I. /10	ProtectionEquipmentEvent Object	o, o	o	o
NOTE – Either VCC-specific or ICC-specific scope must be supported by servers for block 1.				

Table A.5 – Data sets

PICS proforma reference	Data sets	Base	F/S	
			Client-CR	Server-CR
I. /1	Data Set Model	m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>
I. /2	VCC-specific scope (see note)	o	m ¹	o <input checked="" type="checkbox"/>
I. /3	ICC-specific scope (see note)	o	m ¹	o <input checked="" type="checkbox"/>
I. /4	Create Data Set Operation	o	o	o <input checked="" type="checkbox"/>
I. /5	Delete Data Set Operation	o	o	o <input checked="" type="checkbox"/>
I. /6	Get Data Set Element Values Operation	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /7	Set Data Set Element Values Operation	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /8	Get Data Set Names Operation	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /9	Get Data Set Element Names Operation	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
NOTE – Either VCC-specific or ICC-specific scope must be supported by servers for block 1.				

Table A.6 – Accounts

PICS proforma reference	Accounts	Base	F/S	
			Client-CR	Server-CR
I. /1	Account Model	m ⁸	m ⁸	m ⁸
I. /2	Query Operation	m ⁸	m ⁸	m ⁸
I. /3	TransferAccount Object	m ⁸	m ⁸	m ⁸
I. /4	TransmissionSegment Object	m ⁸	m ⁸	m ⁸
I. /5	ProfileValue Object	m ⁸	m ⁸	m ⁸
I. /6	AccountRequest Object	o	o	o
I. /7	DeviceOutage Object	o	o	o
I. /8	AvailabilityReport Object	o	o	o
I. /9	RealTimeStatus Object	o	o	o
I. /10	ForecastSchedule Object	o	o	o
I. /12	Curve Object	o	o	o
I. /13	Power System Dynamic Objects	o	o	o

Table A.7 – DS transfer sets

PICS proforma reference	DS transfer sets	Base	F/S	
			Client-CR	Server-CR
I. /1	Data Set Transfer Set Model	m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>
I. /2	Start Transfer Operation	m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>

I. /3	Stop Transfer Operation	m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>
I. /4	Get Next DSTransfer Set Operation	m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>
I. /5	IntervalTimeOut	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /6	ObjectChange	o, m ²	o	m ² <input checked="" type="checkbox"/>
I. /7	OperatorRequest (see note)	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /8	IntegrityTimeout	o, m ²	o	m ² <input checked="" type="checkbox"/>
I. /9	OtherExternalEvent (see note)	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /10	EventCodeRequested (see note)	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /11	Start Time	m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>
I. /12	Interval	m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>
I. /13	TLE	o, m ²	o	m ² <input checked="" type="checkbox"/>
I. /14	Buffer Time	o, m ²	o	m ² <input checked="" type="checkbox"/>
I. /15	Integrity Check	o, m ²	o	m ² <input checked="" type="checkbox"/>
I. /16	DSConditions Requested	o, m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /17	Block Data	o, m ³	o	m ³
I. /18	Critical	o, m ²	o	m ² <input checked="" type="checkbox"/>
I. /19	RBE	o, m ²	o	m ² <input checked="" type="checkbox"/>
NOTE – Servers must support the processing of these parameters. This does not imply the presence of the application.				

Table A.8 – Time series transfer set objects

PICS proforma reference	Time series transfer set objects	Base	F/S	
			Client-CR	Server-CR
I. /1	Time Series Transfer Set Model	m ⁹	m ⁹	m ⁹
I. /2	Get Next TSTransfer Set Operation	m ⁹	m ⁹	m ⁹
I. /3	EndTimeArrived	o,m ⁹	o	m ⁹
I. /4	ReportIntervalTimeOut	o,m ⁹	o	m ⁹
I. /5	OperatorRequest	o,m ⁹	o	m ⁹

Table A.9 – Transfer account transfer set objects

PICS proforma reference	Transfer account transfer set objects	Base	F/S	
			Client-CR	Server-CR
I. /1	Transfer Account Transfer Set Model	m ⁸	m ⁸	m ⁸
I. /2	BeforeTheHour	o,m ⁸	o	m ⁸
I. /3	DispatchUpdate	o,m ⁸	o	m ⁸
I. /4	DuringTheHour	o,m ⁸	o	m ⁸
I. /5	AfterTheHour	o,m ⁸	o	m ⁸
I. /6	ActualDataUpdate	o,m ⁸	o	m ⁸
I. /7	PastHours	o,m ⁸	o	m ⁸
I. /8	ObjectChange	o,m ⁸	o	m ⁸
I. /9	OperatorRequest	o,m ⁸	o	m ⁸

Table A.10 – Information message objects

PICS proforma reference	Information message objects	Base	F/S	
			Client-CR	Server-CR
I. /1	Information Message Transfer Set Model	m ⁴	m ⁴	m ⁴ <input checked="" type="checkbox"/>
I. /1	InformationBuffer Object	m ⁴	m ⁴	m ⁴ <input checked="" type="checkbox"/>

Table A.11 – Special transfer set objects

PICS proforma reference	Special transfer set objects	Base	F/S	
			Client-CR	Server-CR
I. /1	Transfer Set Name	o,m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /2	Next DSTransfer Set	o	o	o
I. /3	Next TSTransfer Set	o	o	o
I. /4	Event Code	o,m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /5	DS ConditionsDetected	o,m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /6	TS ConditionsDetected	o,m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /7	TA ConditionsDetected	o,m ¹	o	m ¹ <input checked="" type="checkbox"/>
I. /8	Transfer Set Time Stamp	o,m ¹	o	m ¹ <input checked="" type="checkbox"/>

Table A.12 – SBO devices

PICS proforma reference	Devices	Base	F/S	
			Client-CR	Server-CR
I. /1	Device Model	m ⁵	m ⁵	m ⁵ <input checked="" type="checkbox"/>
I. /2	Select Operation	m ⁵	m ⁵	m ⁵ <input checked="" type="checkbox"/>
I. /3	Operate Operation	m ⁵	m ⁵	m ⁵ <input checked="" type="checkbox"/>
I. /4	Get Tag	o	o	o
I. /5	Set Tag	o	o	o
I. /6	Timeout Action	o,m ⁷	o	m ⁷ <input checked="" type="checkbox"/>
I. /7	Local Reset Action	o	o	o
I. /8	Success Action	o, m ⁷	o	m ⁷ <input checked="" type="checkbox"/>
I. /9	Failure Action	o, m ⁷	o	m ⁷ <input checked="" type="checkbox"/>

Table A.13 – Programs

PICS proforma reference	Programs	Base	F/S	
			Client-CR	Server-CR
I. /1	Program Model	m ⁶	m ⁶	m ⁶
I. /2	Start Operation	m ⁶	m ⁶	m ⁶
I. /3	Stop Operation	m ⁶	m ⁶	m ⁶
I. /4	Resume Operation	m ⁶	m ⁶	m ⁶
I. /5	Reset Operation	m ⁶	m ⁶	m ⁶
I. /6	Reset Operation	m ⁶	m ⁶	m ⁶
I. /7	Kill Operation	m ⁶	m ⁶	m ⁶
I. /8	Get Program Attributes Operation	o, m ⁶	o	m ⁶

Table A.14 – Event enrollments

PICS proforma reference	Event enrollments	Base	F/S	
			Client-CR	Server-CR
I. /1	Event Enrollment Model	m ⁷	m ⁷	m ⁷ <input checked="" type="checkbox"/>
I. /2	Create Event Enrollment Operation	m ⁷	m ⁷	m ⁷ <input checked="" type="checkbox"/>
I. /3	Delete Event Enrollment Operation	o, m ⁷	o	m ⁷ <input checked="" type="checkbox"/>
I. /5	Get Event Enrollment Attributes Operation	o, m ⁷	o	m ⁷ <input checked="" type="checkbox"/>

Table A.15 – Event conditions

PICS proforma reference	Event conditions	Base	F/S	
			Client-CR	Server-CR
I. /1	Event Condition Model	m ⁷	m ⁷	m ⁷ <input checked="" type="checkbox"/>
I. /2	Event Notification Action	m ⁷	m ⁷	m ⁷ <input checked="" type="checkbox"/>

Table A.16 – Object models ¹⁾

PICS proforma reference	Object models	Base	F/S	
			Client-CR	Server-CR
I. /1	IndicationPoint Object	m ¹	m ¹	m ¹ <input checked="" type="checkbox"/>
I. /2	ControlPoint Object	m ⁵	m ⁵	m ⁵ <input checked="" type="checkbox"/>
I. /3	ProtectionEquipmentEvent Object	o	o	o
I. /4	TransferAccount Object	m ⁸	m ⁸	m ⁸
I. /5	TransmissionSegment Object	m ⁸ ,o	m ⁸	o
I. /6	ProfileValue Object	m ⁸ ,o	m ⁸	o
I. /7	AccountRequest Object	o	o	o
I. /8	DeviceOutage Object	o	o	o
I. /9	InformationBuffer Object	m ⁴	m ⁴	m ⁴ <input checked="" type="checkbox"/>
I. /10	AvailabilityReport Object	o	o	o
I. /11	RealTimeStatus Object	o	o	o
I. /12	ForecastSchedule Object	o	o	o
I. /13	Curve Object	o	o	o
I. /14	Power System Dynamic Objects	o	o	o

¹⁾ The object models shown here are defined in IEC 60870-6-802.

A.4 MMS

A.4.1 Supported MMS PDUs

Table A.17 – Environment and general management

Table A.17a

Reference	MMS PDU	Client-CR			
		Sending		Receiving	
		Base	F/S	Base	F/S
1	InitiateRequest	o	m	o	–
2	InitiateResponse	o	–	o	m
3	InitiateError	o	–	o	m
4	ConcludeRequest	o	m	o	m
5	ConcludeResponse	o	m	o	m
6	ConcludeError	o	m	o	m
7	CancelRequest	o	i	o	i
8	CancelResponse	o	i	o	i
9	CancelError	o	i	o	i
10	Reject	m	m	m	m

NOTE – Abort service is provided by ACSE.

Table A.17b

Reference	MMS PDU	Server-CR			
		Sending		Receiving	
		Base	F/S	Base	F/S
1	InitiateRequest	o	–	m	m☑
2	InitiateResponse	m	m☑	o	–
3	InitiateError	m	m☑	o	–
4	ConcludeRequest	o	m☑	m	m☑
5	ConcludeResponse	m	m☑	o	m☑
6	ConcludeError	m	m☑	o	m☑
7	CancelRequest	o	i	o	i
8	CancelResponse	o	i	o	i
9	CancelError	o	i	o	i
10	Reject	m	m☑	m	m☑

NOTE – Abort service is provided by ACSE.

Table A.18 – MMS modifiers

Reference	Modifier	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	attach ToEvent Condition	o	i	o	i
2	attach To Semaphore	o	i	o	i

Table A.19 – Parameter CBBs

Reference	Parameter CBB	Base	Client-CR		Server-CR	
			F/S	Value/ reference	F/S	Value/ reference
1	str1	m	m		m	<input checked="" type="checkbox"/>
2	str2	m	m		m	<input checked="" type="checkbox"/>
3	vnam	m	m		m	<input checked="" type="checkbox"/>
4	valt	o	o		o	
5	vadr	o	i		i	
6	vsca	o	i		i	
7	tpy	o	i		i	
8	vlis	m	m		m	<input checked="" type="checkbox"/>
9	real	o	i		i	
10	akec	o	x		x	
11	cei	o	i		i	

NOTE – akec has been removed from the base standards.

Table A.20 – VMD support

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	Status	o	i	o	i
2	Unsolicited Status	o	i	o	i
3	GetNameList	o	o	o	m <input checked="" type="checkbox"/>
4	Identify	o	o	m	m <input checked="" type="checkbox"/>
5	Rename	o	i	o	i
6	GetCapabilityList	o	i	o	i

Table A.21 – Domain management

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	InitiateDownloadSequence	o	i	o	i
2	DownloadSegment	o	i	o	i
3	TerminateDownloadSequence	o	i	o	i
4	InitiateUploadSequence	o	i	o	i
5	UploadSegment	o	i	o	i
6	TerminateUploadSequence	o	i	o	i
7	RequestDomainDownload	o	i	o	i
8	RequestDomainUpload	o	i	o	i
9	LoadDomainContent	o	i	o	i
10	StoreDomainContent	o	i	o	i
11	DeleteDomain	o	i	o	i
12	GetDomainAttributes	o	i	o	i

Table A.22 – Program invocation management

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	CreateProgramInvocation	o	i	o	i
2	DeleteProgramInvocation	o	i	o	i
3	Start	o	c2*	o	c2
4	Stop	o	c2	o	c2
5	Resume	o	c2	o	c2
6	Reset	o	c2	o	c2
7	Kill	o	c2	o	c2
8	GetProgramInvocationAttributes	o	c2	o	c2

* c2: if the TASE.2 CBB Block 6 – Programs is supported, then "m", else "i".

Table A.23 – Variable access

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	Read	o	m	o	m <input checked="" type="checkbox"/>
2	Write	o	m	o	m <input checked="" type="checkbox"/>
3	InformationReport	o	m	o	m <input checked="" type="checkbox"/>
4	GetVariableAccessAttributes	o	m	o	m <input checked="" type="checkbox"/>
5	DefineNamedVariable	o	i	o	i
6	DefineScatteredAccess	o	i	o	i
7	GetScatteredAccessAttributes	o	i	o	i
8	DeleteVariableAccess	o	i	o	i
9	DefineNamedVariableList	o	m	o	m <input checked="" type="checkbox"/>
10	GetNamedVariableListAttribute	o	m	o	m <input checked="" type="checkbox"/>
11	DeleteNamedVariableList	o	m	o	m <input checked="" type="checkbox"/>
12	DefineNamedType	o	i	o	i
13	GetNamedTypeAttributes	o	i	o	i
14	DeleteNamedType	o	i	o	i

Table A.24 – Semaphore management

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	TakeControl	o	i	o	i
2	RelinquishControl	o	i	o	i
3	DefineSemaphore	o	i	o	i
4	DeleteSemaphore	o	i	o	i
5	ReportSemaphoreStatus	o	i	o	i
6	ReportPoolSemaphoreStatus	o	i	o	i
7	ReportSemaphoreEntryStatus	o	i	o	i

Table A.25 – Operator communication

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	Input	o	i	o	i
2	Output	o	i	o	i

Table A.26 – Event management

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	DefineEventCondition	o	i	o	i
2	DeleteEventCondition	o	i	o	i
3	GetEventConditionAttributes	o	i	o	i
4	ReportEventConditionStatus	o	i	o	i
5	AlterEventConditionMonitoring	o	i	o	i
6	TriggerEvent	o	i	o	i
7	DefineEventAction	o	i	o	i
8	DeleteEventAction	o	i	o	i
9	GetEventActionAttributes	o	i	o	i
10	ReportEventActionStatus	o	i	o	i
11	DefineEventEnrollment	o	c3*	o	c3☑
12	DeleteEventEnrollment	o	c3	o	c3☑
13	GetEventEnrollmentAttributes	o	c3	o	c3☑
14	ReportEventEnrollmentStatus	o	i	o	l
15	AlterEventEnrollment	o	i	o	l
16	EventNotification	o	c3	o	c3☑
17	AcknowledgeEventNotification	o	i	o	l
18	GetAlarmSummary	o	i	o	l
19	GetAlarmEnrollmentSummary	o	i	o	l

* c3: if the TASE.2 CBB Block 7 – Events is supported, then "m", else "i".

Table A.27 – Journal management

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	ReadJournal	o	i	o	i
2	WriteJournal	o	i	o	i
3	InitializeJournal	o	i	o	i
4	ReportJournalStatus	o	i	o	i
5	CreateJournal	o	i	o	i
6	DeleteJournal	o	i	o	i

Table A.28 – File access

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	ObtainFile	o	i	o	i

Table A.29 – File management

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	FileOpen	o	i	o	i
2	FileRead	o	i	o	i
3	FileClose	o	i	o	i

Table A.30 – Data exchange management

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	GetDataExchangeAttributes	o	i	o	i
2	ExchangeData	o	i	o	i

Table A.31 – Additional PDUs

Reference	MMS PDU	Client-CR		Server-CR	
		Base	F/S	Base	F/S
1	AdditionalPDU	o	i	o	i

A.4.2 PDU-specific requirements

No additional PDU-specific requirements are imposed by this standard.

A.5 ACSE

A.5.1 Supported functions

Table A.32 – Protocol versions

PICS proforma reference	Protocol version	Client-CR		Server-CR	
		Base	F/S	Base	F/S
A.A.2/1	Version 1	o.1		o.1 <input checked="" type="checkbox"/>	
A.A.2/2	Version 2	o.1		o.1	

o.1: support of the implementation of only *one* version of the protocol shall be described in this proforma (see below).

An implementation shall be described by completing a separate PICS proforma for each supported protocol version. PICS documents for all versions of the protocol for which conformance is claimed should be attached to each other and used together.

Table A.33 – Other protocol versions

PICS proforma reference	Protocol version	Client-CR		Server-CR	
		Base	F/S	Base	F/S
A.A.2/1	Version 1	o		o	
A.A.2/2	Version 2	o		o	

Table A.34 – Technical corrigenda implemented

PICS proforma reference	Corrigenda implemented

Table A.35 – Global statement of conformance

PICS proforma reference	
A.A.5/1	Are all mandatory features implemented? (yes or no)
	yes

Table A.36 – Protocol mechanisms

PICS proforma reference	Protocol mechanism	Client-CR		Server-CR	
		Base	F/S	Base	F/S
A.A.7/1	Normal mode	o.1	m	o.1	m <input checked="" type="checkbox"/>
A.A.7/2	X.410-1984 mode	o.1	i	o.1	i
A.A.7/3	Rules for extensibility	m	m	m	m <input checked="" type="checkbox"/>
A.A.7/4	Supports operation of SessionV2	o	m	o	m <input checked="" type="checkbox"/>

A.5.2 Initiator/responder capability

Table A.37 – Association establishment procedure

PICS proforma reference	Role	Client-CR		Server-CR	
		Base	F/S	Base	F/S
A.A.6.1/1	Initiator	o.1*	m	o.1	i
A.A.6.1/2	Responder	o.1	i	o.1	m <input checked="" type="checkbox"/>

* o.1: a conforming implementation shall support at least one of the roles.

Table A.38 – Normal release procedure

PICS proforma reference	Role	Client-CR		Server-CR	
		Base	F/S	Base	F/S
A.A.6.2/1	Initiator	o	m	o	i
A.A.6.2/2	Responder	o	i	o	m <input checked="" type="checkbox"/>

Table A.39 – Abnormal release procedure

PICS proforma reference	Role	Client-CR		Server-CR	
		Base	F/S	Base	F/S
A.A.6.3/1	Initiator	m	m	m	m <input checked="" type="checkbox"/>
A.A.6.3/2	Responder	m	m	m	m <input checked="" type="checkbox"/>

Table A.40 – Functional units

PICS proforma reference	Protocol mechanism	Client-CR		Server-CR	
		Base	F/S	Base	F/S
A.A.8/1	Normal mode	m	m	m	m <input checked="" type="checkbox"/>
A.A.8/2	Authentication	m	m	m	m <input checked="" type="checkbox"/>

A.5.3 Supported APDUs

Table A.41 – Supported APDUs

PICS proforma reference	APDU	Status	Profile	
			Client-CR	Server-CR
A.A.9/1	A-associate-request (AARQ)	c1	m, i	i, m <input checked="" type="checkbox"/>
A.A.9/2	A-associate-response (AARE)	c2	i, m	m, i <input checked="" type="checkbox"/>
A.A.9/3	A-release-request (RLRQ) (see note)	c3	o, m	o, m <input checked="" type="checkbox"/>
A.A.9/4	A-release-response (RLRE)	c4	m, o	m, o <input checked="" type="checkbox"/>
A.A.9/5	A-abort (ABRT) (see note)	c5	o, m	o, m <input checked="" type="checkbox"/>

NOTE – There is no requirement on either TASE.2 party to terminate an association. This means that it is possible to have a TASE.2 client and server where an association stops only if the underlying connection is lost.

A.5.4 Supported APDU parameters

Table A.42 – A-associate-request APDU

PICS proforma reference	AARQ parameter	Status	Profile	
			Client-CR	Server-CR
A.A.10.1/1	Protocol version	c, m		<input checked="" type="checkbox"/>
A.A.10.1/2	Application context name	m		<input checked="" type="checkbox"/>
A.A.10.1/3	Calling AP title	o, m		<input checked="" type="checkbox"/>
A.A.10.1/4	Calling AE qualifier	o, m		<input checked="" type="checkbox"/>
A.A.10.1/5	Calling AP invocation-id	o, m		<input checked="" type="checkbox"/>
A.A.10.1/6	Calling AE invocation-id	o, m		<input checked="" type="checkbox"/>
A.A.10.1/7	Called AP title	o, m		<input checked="" type="checkbox"/>
A.A.10.1/8	Called AE qualifier	o, m		<input checked="" type="checkbox"/>
A.A.10.1/9	Called AP invocation-id	o, m		<input checked="" type="checkbox"/>
A.A.10.1/10	Called AE invocation-id	o, m		<input checked="" type="checkbox"/>
A.A.10.1/11	Implementation information	o, m		<input checked="" type="checkbox"/>
A.A.10.1/12	User information	o, m		<input checked="" type="checkbox"/>

Table A.43 – A-associate-response APDU

PICS proforma reference	AARE parameter	Status	Profile	
			Client-CR	Server-CR
A.A.10.2/1	Protocol version	c, m		<input checked="" type="checkbox"/>
A.A.10.2/2	Application context name	m		<input checked="" type="checkbox"/>
A.A.10.2/3	Responding AP title	o, m		<input checked="" type="checkbox"/>
A.A.10.2/4	Responding AE qualifier	o, m		<input checked="" type="checkbox"/>
A.A.10.2/5	Responding AP invocation-id	o, m		<input checked="" type="checkbox"/>
A.A.10.2/6	Responding AE invocation-id	o, m		<input checked="" type="checkbox"/>
A.A.10.2/7	Result	m		<input checked="" type="checkbox"/>
A.A.10.2/8	Result source diagnostic	m		<input checked="" type="checkbox"/>
A.A.10.2/9	Implementation information	o, m		<input checked="" type="checkbox"/>
A.A.10.2/10	User information			

Table A.44 – A-release-request APDU

PICS proforma reference	RLRQ parameter	Status	Profile	
			Client-CR	Server-CR
A.A.10.3/1	Reason	o, m		<input checked="" type="checkbox"/>
A.A.10.3/2	User information	o, m		<input checked="" type="checkbox"/>

Table A.45 – A-release-response APDU

PICS proforma reference	RLRE parameter	Status	Profile	
			Client-CR	Server-CR
A.A. 10.4/1	Reason	o, m		<input checked="" type="checkbox"/>
A.A. 10.4/2	User information	o, m		<input checked="" type="checkbox"/>

Table A.46 – Abort APDU

PICS proforma reference	ABRT parameter	Status	Profile	
			Client-CR	Server-CR
A.A.10.5/1	Reason	m		<input checked="" type="checkbox"/>
A.A.10.5/2	User information	o, m		<input checked="" type="checkbox"/>

A.5.5 Supported parameter forms**Table A.47 – AE title syntax name-form**

PICS proforma reference	Syntax form	Sending		Receiving	
		Base	F/S	Base	F/S
A.A. 11/1	Form 1 (Directory Name)	o	i	m	m <input checked="" type="checkbox"/>
A.A. 11/2	Form 2 (Object Id and Integer)	o	m	m	m <input checked="" type="checkbox"/>

Table A.48 – Authentication value form

PICS proforma reference	Authentication value form	Status	Profile	
			Client-CR	Server-CR
A.A. 11. 2/1	GraphicString		o	o
A.A. 11. 2/2	BIT STRING		o	o <input checked="" type="checkbox"/>
A.A. 11. 2/3	EXTERNAL		o	o
A.A. 11. 2/4	Other		o	o

A.6 Presentation

Table A.49 – Presentation PRL

PICS proforma reference	Name of item	Status	Profile	
			Client-CR	Server-CR
P.A.5.1/1	X.410 (1984)	o.01	i	i
P.A.5.1/2	Normal	o.01	m	m <input checked="" type="checkbox"/>
P.A.5.2/1	Kernel functional unit		m	m <input checked="" type="checkbox"/>
P.A.5.2/2	Presentation Context Management functional unit			
P.A.5.2/3	Presentation Context Restoration functional unit			
P.A.6.1.1.1/1	Initiator (presentation connection)	o.03	c21	c21 <input checked="" type="checkbox"/>
P.A.6.1.1.1/2	Responder (presentation connection)	o.03	c22	c22 <input checked="" type="checkbox"/>
P.A.6.1.1.2/1	Requestor (normal data)			
P.A.6.1.1.2/2	Acceptor (normal data)			
P.A.6.1.1.3/1	Requestor (orderly release)	o.05	c23	c23 <input checked="" type="checkbox"/>
P.A.6.1.1.3/2	Acceptor (orderly release)	o.05	c24	c24 <input checked="" type="checkbox"/>
NOTE – c21: m if the implementation supports the MMS Initiate service in the requestor role, o otherwise c22: m if the implementation supports the MMS Initiate service in the responder role, o otherwise c23: m if the implementation supports the MMS Conclude service in the requestor role, o otherwise c24: m if the implementation supports the MMS Conclude service in the responder role, o otherwise				

A.7 Session

Table A.50 – Session PRL

PICS proforma reference	Name of item	Status	Profile	
			Client-CR	Server-CR
S.A.3.1/2	Version 2	o.1	m	m <input checked="" type="checkbox"/>
S.A.6.1/4	Duplex	o.2	m	m <input checked="" type="checkbox"/>
S.A.6.2/2	Reuse of transport connection	o	i	i
S.A.6.2/4	Extended Concatenation (sending)	o	i	i
S.A.6.2/5	Extended Concatenation (receiving)	o	i	i
S.A.7.1.1.1	Initiator (session connection)	o.3	c21	c21 <input checked="" type="checkbox"/>
S.A.7.1.1.1	Responder (session connection)	o.3	c22	c22 <input checked="" type="checkbox"/>
S.A.7.1.1.2	Requestor (orderly release)	o.4	c23	c23 <input checked="" type="checkbox"/>
S.A.7.1.1.2	Acceptor (orderly release)	o.4	c24	c24 <input checked="" type="checkbox"/>
S.A.7.1.1.3	Requestor (normal data transfer)	o.5	m	m <input checked="" type="checkbox"/>
S.A.7.1.1.3	Acceptor (normal data transfer)	o.5	m	m <input checked="" type="checkbox"/>
S.A.7.1.2/2	Overflow Accept (OA)	c5,c6	i	i
S.A.7.1.2/3	Connect Data Overflow (CDO)	c6,c5	i	i
S.A.7.5.1/1	Requestor (expedited data)	o.6	–	–
S.A.7.5.1/2	Acceptor (expedited data)	o.6	–	–
S.A.7.6.1/1	Requestor (typed data)	o.7	–	–
S.A.7.6.1/2	Acceptor (typed data)	o.7	–	–
S.A.7.7.1/1	Requestor (capability data)	o.8	–	–
S.A.7.7.1/2	Acceptor (capability data)	o.8	–	–
S.A.7.8.1/1	Requestor (minor synchronize)	o.9	–	–
S.A.7.8.1/2	Acceptor (minor synchronize)	o.9	–	–
S.A.7.10.1/	Requestor (major synchronize)	o.10	–	–
S.A.7.10.1/	Acceptor (major synchronize)	o.10	–	–
S.A.7.13.1	Requestor (activity start)	o.12	–	–
S.A.7.13.1	Acceptor (activity start)	o.12	–	–
S.A.7.13.1	Requestor (activity resume)	o.13	–	–
S.A.7.13.1	Acceptor (activity resume)	o.13	–	–
S.A.7.13.1	Requestor (activity interrupt)	o.14	–	–
S.A.7.13.1	Acceptor (activity interrupt)	o.14	–	–
S.A.7.13.1	Requestor (activity discard)	o.15	–	–
S.A.7.13.1	Acceptor (activity discard)	o.15	–	–
S.A.7.13.1	Requestor (activity end)	o.16	–	–
S.A.7.13.1	Acceptor (activity end)	o.16	–	–
S.A.7.13.1	Requestor (give tokens confirm)	o	o	o
S.A.7.13.1	Acceptor (give tokens confirm)	o	o	o
S.A.8.1.3/4	Data Overflow Item	c6,c5	i	i
S.A.8.2/1	TSDU Maximum Size (OA)	c64,c65	i	i
S.A.8.2/2	Version Number (OA)	c66,c67	i	i
S.A.8.3/1	Enclosure Item (CDO)	c68,c69	i	i
S.A.8.3/1	User Data (CDO)	c68,c69	i	i