Client-Server Protocol Data Types

Candidate Version 1.3 – 11 Oct 2005

Open Mobile Alliance

OMA-TS-IMPS-CSP_Data_Types-V1_3-20051011-C

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1. Scope

The Instant Messaging and Presence Service (IMPS) includes four primary features:

- Presence
- Instant Messaging
- Groups
- Shared Content

Presence is the key enabling technology for IMPS. It includes client device availability (my phone is on/off, in a call), user status (available, unavailable, in a meeting), location, client device capabilities (voice, text, GPRS, multimedia) and searchable personal statuses such as mood (happy, angry) and hobbies (football, fishing, computing, dancing). Since presence information is personal, it is only made available according to the user's wishes - access control features put the control of the user presence information in the users' hands.

Instant Messaging (IM) is a familiar concept in both the mobile and desktop worlds. Desktop IM clients, two-way SMS and two-way paging are all forms of Instant Messaging. Wireless Village IM will enable interoperable mobile IM in concert with other innovative features to provide an enhanced user experience.

Groups or chat are a fun and familiar concept on the Internet. Both operators and end-users are able to create and manage groups. Users can invite their friends and family to chat in group discussions. Operators can build common interest groups where end-users can meet each other online.

Shared Content allows users and operators to setup their own storage area where they can post pictures, music and other multimedia content while enabling the sharing with other individuals and groups in an IM or chat session.

These features, taken in part or as a whole, provide the basis for innovative new services that build upon a common interoperable framework.

2. References

2.1 Normative References

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[HTMLCOLORS] "HTML 4.01 Specification", W3C recommendation, 24 December 1999.
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2.2 Informative References

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[SSP]	"Server-Server Protocol Semantics Version 1.3", OMA-TS-IMPS-SSP-V1_3, Open Mobile Alliance™ http://www.openmobilealliance.org
[SSP Syntax]	"Server-Server Protocol XML Syntax Version 1.3", OMA-TS-IMPS-SSP_XMLS-V1_3, Open Mobile Alliance™ http://www.openmobilealliance.org
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3. Terminology and Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

3.1 Definitions

None

3.2 Abbreviations

OMA	Open Mobile Alliance
WV	Wireless Village

4. Basic Types

4.1 Character

A character is single UTF-8 encoded character.

4.2 Integer

An integer is a number from 0-4294967295 expressed in decimal format.

4.3 Boolean

A Boolean value indicates either true or false. In XML these values have been encoded to single characters. The following values are defined:

- T – indicating yes or true (UTF-8 encoded character)
- F – indicating no or false (UTF-8 encoded character)

These values are case insensitive.

4.4 String

A string of UTF-8 encoded characters.

4.5 Date and time

Expressed as a string, the format follows the [ISO8601] specification. The date and time format used SHALL be the complete date and time using the basic format. The time SHALL always be indicated in Coordinated Universal Time (UTC). Example of UTC time:

20011019T095031Z

4.6 Binary data

The binary data must be encoded according to BASE64 encoding [RFC2045].

4.7 Derived types

4.7.1 Enumerated

The enumerated type is a type derived from the basic types that limit the values to certain, defined values. Examples of this are enumerated string, enumerated character and enumerated integer. In the case of enumerated string and enumerated characters, the values shall be case insensitive.

4.7.2 Structure

The structure type allows the definition of an information element as a structure of basic types. The structure itself is defined in an XML DTD Element.

5. Data Type Assignments for XML ELEMENTS

5.1 XML Element Assignment for CSP Information Elements

Information Element	XML Element
Acceptance	Acceptance
Accepted-Content-Length	ContentSize
Add-Nick-List	AddNickList
Add-Users-List	AddList
Admin-Map-List	AdminMapList
Advanced-Criteria	AdvancedCriteria
Agreed-Capabilities	AgreedCapabilityList
All-Functions	AllFunctions
All-Functions-Request	AllFunctionsRequest
Application-ID	ApplicationID
Attribute-Association-List	Presence+
AuthorizeAndGrant	AuthorizeAndGrant
Blocked-Entity-List	BlockList(EntityList)
Blocked-List-InUse	BlockListInUse
Block-Entity-List	BlockList
Cancel-Reason	InviteNote
Cancelled-Application	ApplicationID
Cancelled-Content	URLList
Cancelled-Group	GroupID
Cancelled-Presence	PresenceSubList
ClientCapability-Request	CapabilityRequest
Clear-Public-Profile	ClearPublicProfile
Client-ID	ClientID
Completion-Flag	CompletionFlag
Contact-List-ID	ContactList
Contact-List-ID-List	ContactListIDList
ContactList-Notify	ContactListNotify
Contact-List-Props	ContactListProperties
Content	ContentData
Session-Cookie	SessionCookie
Default-Attribute-List	DefaultAttributeList
Default-CList-ID	DefaultContactList
Default-List	DefaultList
Default-Notify	DefaultNotify
Delivery-Method	DeliveryMethod
Delivery-Report-Request	DeliveryReport
Delivery-Time	DeliveryTime
Digest-Schema	DigestSchema
Digest-Bytes	DigestBytes
ExtendConversation-ID	ExtendConversationID
ExtendConversation-User-ID	ExtendConversationUserID
Granted-Entity-List	GrantList
Granted-List-InUse	GrantListInUse
Grant-Entity-List	GrantList(EntityList)

Group-ID	GroupID
Group-Props	GroupProperties
ID-List	IDList
History-Period	HistoryPeriod
Invite-Acceptance	Acceptance
Invite-Application	ApplicationID
Invite-Content	URLList
Invite-Group	GroupID
Invite-ID	InviteID
Invite-Presence	PresenceSubList
Invite-Reason	InviteNote
Invite-Response	InviteNote
Invite-Type	InviteType
Join-Group	JoinGroup
Joined-Blocked-Users-List	JoinedBlockedUsersList
Joined-Request	JoinedRequest
Joined-Users-List	Joined
Keep-Alive-Time	KeepAliveTime
Left-Blocked-Users-List	LeftBlockedUsersList
Left-Users-List	Left
Logo	Logo
Map	Map
MaxWatcherList	MaxWatcherList
Message-Count	MessageCount
Message-ID	MessageID
Message-ID-List	MessageID+
Message-Info	MessageInfo
Message-Info-List	MessageInfoList
Message-Total-Count	MessageTotalCount
Name	Name
Nonce	Nonce
Not-Available-Functions	Functions
Notification-Type	NotificationType
Notification-Type-List	NotificationTypeList
Other-Servers	OtherServers+
Own-Props	OwnProperties
Own-Screen-Name	ScreenName
Password-String	Password
Presence-Attribute-List	PresenceSubList
Presence-Value-List	Presence
Public-Profile	PublicProfile
Public-Profile-List	PublicProfile+
Recalled-Content	URLList
Recall-Reason	InviteNote
Receive-List	ReceiveList
Recipients	Recipient
Remove-Nick-List	RemoveNickList
Remove-Users-List	RemoveList
Requested-Capabilities	CapabilityList
Requested-Functions	Functions

Result	Result
Screen-Name	ScreenName
Search-Criteria	SearchCriteria
Search-Findings	SearchFindings
Search-ID	SearchID
Search-Index	SearchIndex
Search-Limit	SearchLimit
Search-Pair-List	SearchPairList
Search-Results	SearchResult
Segment-Content	SegmentContent
Segment-ID	SegmentID
Segment-Info	SegmentInfo
Sender	Sender
Session-Cookie	SessionCookie
Session-ID	SessionID
Session-Priority	SessionPriority
Subscribe-Notif	SubscribeNotification
Subscribe-Type	SubscribeType
Subscription-State	Value
Supported-Digest-Schema	DigestSchema
System-Message-List	SystemMessageList
System-Message-Response-List	SystemMessageResponseList
Text	Description
Time-To-Live	TimeToLive
Transaction-ID	TransactionID
Unblock-Entity-List	BlockList(RemoveList)
Ungrant-Entity-List	GrantList(RemoveList)
Update-Value-List	PresenceValueList
URL	URL
User-ID	UserID
User-ID-List	UserIDList
User-Map-List	UserMapList
User-List	UserList
User-List-Adm	Admin
User-List-Mod	Mod
User-Notify	UserNotify
User-Nick-List	NickList
Validity	Validity
Version-List	VersionList
Welcome-Text	WelcomeNote
Watcher	Watcher
WatcherCount	WatcherCount

Table 1

5.2 Data Types for XML Terminal Elements

XML PCDATA	Acceptance
Data Type	Boolean
Format	Defined in section 4.3.
Description	Indicates acceptance.
Range	Defined in section 4.3.

Table 2: Acceptance

XML PCDATA	AcceptedTransferEncoding
Data Type	String
Format	Text string
Description	Transfer encoding scheme that the client supports. Currently there is BASE64 only.
Range	BASE64

Table 3: AcceptedTransferEncoding

XML PCDATA	AcceptedPullLength
Data Type	Integer
Format	Defined in section 4.2.
Description	An integer number indicating the character count that indicates the maximum length of content (either plain text or multimedia object) that is supported using the notify/get mechanism.
Range	Defined in section 4.2.

Table 4: AcceptedPullLength

XML PCDATA	AcceptedPushLength
Data Type	Integer
Format	Defined in section 4.2.
Description	An integer number indicating the character count that indicates the maximum length of content (either plain text or multimedia object) that is supported using the push mechanism.
Range	Defined in section 4.2.

Table 5: AcceptedPushLength

XML PCDATA	AcceptedRichContentLength
Data Type	Integer
Format	Defined in section 4.2.
Description	An integer number indicating the character count that indicates the supported length for a particular media type without special conditions.
Range	Defined in section 4.2.

Table 6: AcceptedRichContentLength

XML PCDATA	AcceptedTextContentLength
Data Type	Integer
Format	Defined in section 4.2.
Description	An integer number indicating the character count that indicates the supported length for plain text messages.
Range	Defined in section 4.2.

Table 7: AcceptedTextContentLength

XML PCDATA	AdvancedCriteria
Data Type	String
Format	A logical expression constructed from PairIDs – see PairID table – and the available operators according to the operator precedence described below. White space characters are forbidden. **Operators:** Nesting expression – '[' and ']' characters. Logical AND operation – '+' character. Logical OR operation – '|' character. Logical NOT operation – '!' character. **Operator precedence:** 1. '[' and ']' – nesting 2. '!' – NOT 3. '+' – AND 4. '|' – OR Example: 0+[1|2]
Description	The advanced search criteria in form of a logical expression.
Range	Server implementation limits: - the maximum number of search pairs, and - the maximum level of nesting. See the related error codes 544 and 545 in [CSP].

Table 8: AdvancedCriteria

XML PCDATA	AllFunctionsRequest
Data Type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the list of all functions is requested.
Range	Defined in section 4.3.

Table 9: AllFunctionsRequest

XML PCDATA	AnswerOptionID
Data type	Integer.
Format	Defined in section 4.2.
Description	Identifies an answer option within a system message.
Range	Defined in section 4.2.

Table 10: AnswerOptionID

XML PCDATA	AnswerOptionText
Data type	String
Format	Text string.
Description	The answer option to be shown to the end-user.
Range	Max 30 characters

Table 11: AnswerOptionText

XML PCDATA	AnyContent
Data Type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the client accepts all types of contents.
Range	Defined in section 4.3.

Table 12: AnyContent

XML PCDATA	ApplicationID
Data type	String
Format	ApplicationID is a free-form string, however it is strongly RECOMMENDED that it includes a sub string that allows unique identification of the application without interference with applications from other vendors, application types, or other versions of the same application.
Description	Identifies an application.
Range	Max 100 characters.

Table 13: ApplicationID

XML PCDATA	AuthorizeAndGrant
Data type	Boolean
Format	Defined in section 4.3
Description	‘T” means that: 1. The contact list ID is to be added to the grant list. 2. The online status presence attribute is to be added to the presence attributes list assigned to the contact list. The value “F” is not used.
Range	Defined in section 4.3

Table 14: AuthorizeAndGrant

XML PCDATA	BlockListInUse
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the BlockList is in use or not.
Range	Defined in section 4.3.

Table 15: BlockListInUse

XML PCDATA	CapabilityRequest
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates if client capability negotiation is needed.
Range	Defined in section 4.3.

Table 16: CapabilityRequest

XML PCDATA	ChosenOptionID
Data type	See AnswerOptionID.
Format	See AnswerOptionID.
Description	Identifies the answer option that the end-user chose from the options available in a system message.
Range	See AnswerOptionID.

Table 17: ChosenOptionID

XML PCDATA	CIR
Data type	Boolean
Format	Defined in section 3.3.
Description	Indicates whether the CIR channel over standalone TCP/IP is still available or not. ‘T’ means that he CIR channel over standalone TCP/IP is available. ‘F’ means that the CIR channel over standalone TCP/IP is disconnected.
Range	Defined in section 3.3.

Table 18: CIR

XML PCDATA	ClearPublicProfile
Data Type	Boolean
Format	Defined in section 4.3.
Description	Indicates whether the public profile SHALL be cleared or not.
Range	Defined in section 4.3.

Table 19: ClearPublicProfile

XML PCDATA	ClientID
Data type	String
Format	URL
Description	See [RFC2396]. The URL MUST be unique in the scope of the user.
Range	Max 200 characters

Table 20: ClientID

XML PCDATA	ClientType
Data type	Enumerated string
Format	Defined in [PA], Table 7.
Description	The type of the client.
Range	Defined in [PA], Table 7.

Table 21: ClientType

XML PCDATA	Code
Data type	Integer
Format	Defined in section 4.2.
Description	Status code.
Range	Defined in [CSP].

Table 22: Code

XML PCDATA	Color
Data type	Enumerated string
Format	Text string
Description	Indicates the color of the text font
Range	16 color names or RGB values defined in [HTMLCOLORS]

Table 23: Color

XML PCDATA	CompletionFlag
Data type	Boolean
Format	Defined in section 3.3.
Description	Indicates if the client can expect new results. ‘F’ if server may provide new results (still searching), ‘T’ if new results will not be provided.
Range	Defined in section 3.3.

Table 24: CompletionFlag

XML PCDATA	ContactList
Data type	String
Format	Defined in [CSP]. The contact-list-ID is not case sensitive.
Description	Unique identifier of a user's contact list.
Range	Max 150 characters.

Table 25: ContactList

XML PCDATA	ContactListNotify
Data Type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the user wants to be notified when subscriber with contact list authorization requests other attributes than those available across all contact list authorizations. The element MUST be present only when the primitive contains Contact-List-ID-List.
Range	Defined in section 4.3.

Table 26: ContactListNotify

XML PCDATA	ContentData
Data type	String or Binary data.
Format	See ContentEncoding table
Description	The actual content.
Range	

Table 27: ContentData

XML PCDATA	ContentEncoding
Data type	String
Format	Text string
Description	Indicates the transfer encoding used on the content.
Range	None | BASE64

Table 28: ContentEncoding

XML PCDATA	ContentName
Data type	String
Format	Text string
Description	Contains the original name of the multimedia content. It MUST NOT contain path information.
Range	Max 100 characters.

Table 29: ContentName

XML PCDATA	ContentPolicy
Data Type	Enumerated characterInteger
Format	Text characterEnumerated character
Description	An enumerated value that indicates if there is a special handling policy active regarding a media type. N – No policy R – Reject policy. C – Cost policy.
Range	N | R | C

Table 30: ContentPolicy

XML PCDATA	ContentPolicyLimit
Data Type	Integer
Format	Defined in section 4.2.
Description	An integer value that indicates the special handling policy limitation regarding a particular media type.
Range	Defined in section 4.2.

Table 31: ContentPolicyLimit

XML PCDATA	ContentSize
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the size of the content. If the content is binary data, it indicates the size after the BASE64 encoding.
Range	Defined in section 4.2.

Table 32: ContentSize

XML PCDATA	ContentType
Data type	String
Format	MIME-Type as defined in [RFC2045] and [RFC2046].
Description	Indicates the MIME-type of the content.
Range	All MIME-types

Table 33: ContentType

XML PCDATA	DateTime
Data type	Date and Time
Format	Defined in section 4.5.
Description	Date and time.
Range	Defined in section 4.5.

Table 34: DateTime

XML PCDATA	DefaultContactList
Data type	String
Format	See ContactList table.
Description	Identifies the default contact list.
Range	See ContactList table.

Table 35: DefaultContactList

XML PCDATA	DefaultLanguage
Data type	Enumerated string
Format	Three-letter language code as specified in [ISO639-2].
Description	The current language setting in the client. The language code is specifying that the client prefers to receive text information in the indicated language from the server. The information is optional – it is used to override the user profile/presence info language preference.
Range	Any of the valid three-letter language codes.

Table 36: DefaultLanguage

XML PCDATA	DefaultList
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the default attribute list should be used in transaction.
Range	Defined in section 4.3.

Table 37: DefaultList

XML PCDATA	DeliveryMethod
Data type	Enumerated character
Format	Text character
Description	The delivery method setting. Notify/Get or Push.
Range	N | P

Table 38: DeliveryMethod

XML PCDATA	DefaultNotify
Data Type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the user wants to be notified when subscriber without authorization requests other attributes than those available in the Default List.
Range	Defined in section 4.3.

Table 39: DefaultNotify

XML PCDATA	DeliveryReport
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates if delivery report is requested or not.
Range	Defined in section 4.3.

Table 40: DeliveryReport

XML PCDATA	DeliveryTime
Data type	DateTime
Format	Defined in section 3.5
Description	The date and time of delivery of a message
Range	Defined in section 3.5

Table 41: DeliveryTime

XML PCDATA	Description
Data type	String
Format	Text string
Description	Short desciptive text.
Range	Max 200 characters

Table 42: Description

XML PCDATA	DigestBytes
Data type	String
Format	BASE64 encoded
Description	Digest bytes to use with DigestSchema.
Range	Max 200 characters

Table 43: DigestBytes

XML PCDATA	DigestSchema
Data type	Enumerated string
Format	Text string
Description	Digest schema used in hash.
Range	PWD | SHA | MD4 | MD5 | MD6

Table 44: DigestSchema

XML PCDATA	Domain
Data type	String
Format	Defined in [CSP]. Domain is not case sensitive
Description	Contains a domain name.
Range	Max 50 characters

Table 45: Domain

XML PCDATA	ExtendConversationID
Data type	String
Format	Text string. The ExtendConversation ID is case sensitive.
Description	Identifies an ExtendConversationRequest.
Range	Unique in the scope of the session. Max 100 character.

Table 46: ExtendConversationID

XML PCDATA	ExtendedData
Data type	String
Format	As defined in the referred namespace.
Description	Entry point for proprietary extensions. This element is used to give reference to the namespace (DTD) to be used under this specific tag.
Range	The namespace attribute points to a valid proprietary extension namespace.

Table 47: ExtendedData

XML PCDATA	FriendlyName
Data type	String
Format	Text string
Description	Contains the friendly name of the user.
Range	Max 50 characters.

Table 48: FriendlyName

XML PCDATA	GrantListInUse
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the GrantList is in use or not.
Range	Defined in section 4.3.

Table 49: GrantListInUse

XML PCDATA	GroupContentLimit
Data Type	Integer
Format	Defined in section 4.2.
Description	Maximum size of content in instant messages specified by character count that can be sent from a group.
Range	Defined in section 4.2.

Table 50: GroupContentLimit

XML PCDATA	GroupID
Data type	String
Format	Defined in [CSP]. The group-ID is not case sensitive.
Description	Unique identifier of a group.
Range	Max 150 characters

Table 51: GroupID

XML PCDATA	HistoryPeriod
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the time period in seconds in which the watcher history has been accumulated.
Range	Defined in section 4.2.

Table 52: HistoryPeriod

XML PCDATA	InitialDeliveryMethod
Data type	Refer to Table 23. DeliveryMethod.
Format	Refer to Table 23. DeliveryMethod.
Description	Refer to Table 23. DeliveryMethod.
Range	Refer to Table 23. DeliveryMethod.

Table 53: InitialDeliveryMethod

XML PCDATA	InText
Data type	String
Format	Text string.
Description	Text containing instructions for the end-user that describes what needs to be entered as verification key.
Range	Max 128 characters

Table 54: InText

XML PCDATA	InUse
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the requested functionality is in use or not.
Range	Defined in section 4.3.

Table 55: InUse

XML PCDATA	InviteID
Data type	String
Format	Text string. The invite-ID is case sensitive.
Description	Identifies an invitation so that it may be cancelled later on.
Range	Unique in the scope of the server domain. Max 100 character.

Table 56: InviteID

XML PCDATA	InviteNote
Data type	String
Format	Text string
Description	Short desciptive text for invitation.
Range	Max 400 characters

Table 57: InviteNote

XML PCDATA	InviteType
Data type	Enumerated string
Format	Text string
Description	Indicates the type of the invitation.
Range	AP | GR | IM | PR | SC | EC | EG

Table 58: InviteType

XML PCDATA	JoinGroup
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates that the newly created group is joined (or not) at creation time.
Range	Defined in section 4.3

Table 59: JoinGroup

XML PCDATA	JoinedRequest
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the list of currenty joined group members is requested.
Range	Defined in section 4.3.

Table 60: JoinedRequest

XML PCDATA	KeepAliveTime
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates for how many seconds should the session be kept alive. (And how often should the KeepAlive transaction occur if no other transactions are done in the meantime.)
Range	Defined in section 4.2.

Table 61: KeepAliveTime

XML PCDATA	MaxWatcherList
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the maximum number of Watcher element.
Range	Defined in section 4.2.

Table 62: MaxWatcherList

XML PCDATA	MessageCount
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the number of messages.
Range	Defined in section 4.2.

Table 63: MessageCount

XML PCDATA	MessageID
Data type	String
Format	Text string. The message-ID is case sensitive.
Description	Identifies an instant message.
Range	Max 50 characters

Table 64: MessageID

XML PCDATA	MessageURI
Data type	String
Format	URI
Description	See [RFC2396].
Range	Max 100 characters

Table 65: MessageURI

XML PCDATA	MessageTotalCount
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the total number of messages.
Range	Defined in section 4.2.

Table 66: MessageTotalCount

XML PCDATA	MSISDN
Data type	String
Format	International mobile number
Description	Defined in [E.164].
Range	As defined in [E.164].

Table 67: MSISDN

XML PCDATA	MultiTrans
Data type	Integer
Format	Defined in section 4.2.
Description	The maximum number of open transactions from both client and server side at any given time.
Range	The value must be higher than zero.

Table 68: MultiTrans

XML PCDATA	MultiTransPerMessage
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the maximum number of primitives that the client can handle within the same transport message.
Range	The value must be higher than zero.

Table 69: MultiTransPerMessage

XML PCDATA	Name
Data type	String
Format	Text string. Case sensitive.
Description	Name of an attribute.
Range	Max 50 characters

Table 70: Name

XML PCDATA	Nonce
Data type	String
Format	Text string. Case sensitive.
Description	Random string for password digest.
Range	Max 200 characters

Table 71: Nonce

XML PCDATA	NotificationType
Data type	Enumerated string
Format	Text string
Description	Indicates the type of the notification.
Range	ATCL (Added-To-Contact-List) | AC (Authorization-Changed) | ANC (Authorization-Needed-Contact-List) | AND (Authorization-Needed-Default-List) | ANU (Authorization- Needed-User) | BLC (Block-List-Changed) | BLUC (Block-List-UsageChange) | CLCR (Contact-List-Created) | CLC (Contact-List-Changed) | CLD (Contact-List-Deleted) | GLC (Grant-List-Changed) | GLUC (Grant-List-UsageChange) | GC (Group-Created) | GD (Group-Deleted) | GMAU (Group-MemberAccess-Updated) | GMG (Group-Membership-Granted | GMR (Group-Membership-Revoked | GMU (Group-Members-Updated) | GR (Group-Removed) | IA (Invitation-Accepted) | IC (Invitation-Cancelled) | IR (Invitation-Rejected) | OEU (OnlineETEMHandling-Updated) | PPU (PublicProfile-Updated) | SPA (Session-Priority-Adjusted) UIC (User-ID-Changed)

Table 72: NotificationType

XML PCDATA	UserNotify
Data Type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the user wants to be notified when subscriber with individual authorization requests other attributes than those available in the individual authorization. The element MUST be present only when the primitive contains User-ID-List.
Range	Defined in section 4.3.

Table 73: UserNotify

XML PCDATA	OfflineETEMHandling
Data type	Enumerated string
Format	Text string
Description	See client capability negotiation in [CSP].
Range	PRIORITYREJECT | PRIORITYSTORE | REJECT | SENDREJECT | SENDSTORE

Table 74: OfflineETEMHandling

XML PCDATA	PairID
Data type	Integer
Format	Defined in section 4.2.
Description	Unique identifier of a single search pair. Unique within the scope of a single Search-Request transaction.
Range	Defined in section 4.2.

Table 75: PairID

XML PCDATA	ParserSize
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the maximum character (byte) count of XML (WBXML, SMS - depending on the actual encoding) primitive size that the parser can handle
Range	Defined in section 4.2.

Table 76: ParserSize

XML PCDATA	Password
Data type	String
Format	Text string
Description	The password corresponding to the password digest.
Range	Max 50 characters

Table 77: Password

XML PCDATA	PlainTextCharSet
Data Type	Integer
Format	MIBenum number as defined in [IANA].
Description	A supported plain text character set.
Range	Any of the valid character sets.

Table 78: PlainTextCharSet

XML PCDATA	Poll
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates if the server has something to send or not.
Range	Defined in section 4.3

Table 79: Poll

XML PCDATA	PresenceAttributeNSName
Data type	String
Format	Namespace name, See [XML]
Description	Name of a Presence Attribute Namespace
Range	Max 200 characters

Table 80: PresenceAttributeNSName

XML PCDATA	PresenceSubList
Data type	String
Format	As defined in the referred namespace.
Description	Presence attribute list with or without values. This element is used to give reference to the namespace (DTD) to be used under this specific tag.
Range	The namespace attribute points to a valid IMPS presence namespace.

Table 81: PresenceSubList

XML PCDATA	ReactiveAuthState
Data type	Enumerated String
Format	Text string.
Description	Indicates the state of the reactive authorization function for a particular set of presence attributes.
Range	GRANTED | DENIED | PENDING

Table 82: ReactiveAuthState

XML PCDATA	ResponseNote
Data type	String
Format	Text string
Description	Short descriptive text for invitation response.
Range	Max 400 characters

Table 83: ResponseNote

XML PCDATA	ReceiveList
Data type	Boolean
Format	Defined in section 3.3.
Description	Indicates if the client wants to receive the list of users in the contact list in the ListManageResponse primitive. 'F' means that the list is not wanted. 'T' means that the client wants the list returned in the ListManageResponse primitive.
Range	Defined in section 3.3.

Table 84: ReceiveList

XML PCDATA	RequiresResponse
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates that the System Message requires a response or not.
Range	Defined in section 4.3

Table 85: RequiresResponse

XML PCDATA	SearchElement
Data type	Enumerated string
Format	Text string
Description	Indicates what should be searched for SearchString. See detailed description of each value in [CSP].
Range	USER_AGE_MAX | USER_AGE_MIN | USER_COUNTRY | USER_FRIENDLY_NAME | USER_CITY | USER_GENDER | USER_INTENTION | USER_INTERESTS_HOBBIES | USER_MARITAL_STATUS | USER_ID | USER_FIRST_NAME | USER_LAST_NAME | USER_EMAIL_ADDRESS | USER_ALIAS | USER_ONLINE_STATUS | USER_MOBILE_NUMBER | GROUP_ID | GROUP_NAME | GROUP_TOPIC | GROUP_USER_ID_JOINED | GROUP_USER_ID_OWNER

Table 86: SearchElement

XML PCDATA	SearchFindings
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the number of matches found in a search request.
Range	Defined in section 4.2.

Table 87: SearchFindings

XML PCDATA	SearchID
Data type	String
Format	Defined in section 4.2.
Description	Identifies a search request, so that it may be continued later on.
Range	Defined in section 4.2.

Table 88: SearchID

XML PCDATA	SearchIndex
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates from which point should the search continue.
Range	Defined in section 3.3.

Table 89: SearchIndex

XML PCDATA	SearchLimit
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the maximum number of result to be retrieved at a time.
Range	Defined in section 4.2.

Table 90: SearchLimit

XML PCDATA	SearchString
Data type	String
Format	Text string
Description	SearchElement is searches for this (sub)string.
Range	Max 100 characters.

Table 91: SearchString

XML PCDATA	SegmentCount
Data type	Integer
Format	Defined in section 4.2.
Description	The number of total segments generated from a single primitive including the shortened original primitive.
Range	2 to the upper limit defined in section 4.2.

Table 92: SegmentCount

XML PCDATA	SegmentReference
Data type	Integer
Format	Defined in section 4.2.
Description	Unique identifier to a single segment within the scope of a segmented primitive.
Range	Zero to SegmentCount-1

Table 93: SegmentReference

XML PCDATA	ServerPollMin
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the minimum time period that must pass between two subsequent PollingRequest transactions. The value indicates the time in seconds.
Range	The value must be higher than zero.

Table 94: ServerPollMin

XML PCDATA	SessionCookie
Data type	String
Format	Text string
Description	A client-generated cookie provided during login phase.
Range	Max 50 characters.

Table 95: SessionCookie

XML PCDATA	SessionID
Data type	String
Format	Text string that is unique in the scope of the user. The session-ID is case sensitive.
Description	Identifies a session.
Range	Max 50 characters.

Table 96: SessionID

XML PCDATA	SessionNSName
Data type	String
Format	Namespace name, See [XML]
Description	Name of a Session Namespace
Range	Max 200 characters

Table 97: SessionNSName

XML PCDATA	SessionPriority
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the newly assigned session priority value.
Range	The value MUST be between 0 and 10

Table 98: SessionPriority

XML PCDATA	SessionType
Data type	Enumerated string
Format	Text string
Description	Describes the nature of the session. Inband if a there is an open session (and session-ID can be provided), otherwise Outband.
Range	Inband | Outband

Table 99: SessionType

XML PCDATA	Size
Data type	Enumerated string
Format	Text string
Description	Indicates the size of the text font.
Range	Tiny | Small | Medium | Big | Huge

Table 100: Size

XML PCDATA	SName
Data type	String
Format	Text string. Not case sensitive.
Description	The “name” part of the screen name.
Range	Max 50 characters.

Table 101: SName

XML PCDATA	Style
Data type	Enumerated string
Format	Text string
Description	Indicates the style of the text font
Range	Bold | Italic | Underline

Table 102: Style

XML PCDATA	SubscribeNotification
Data type	Boolean
Format	Defined in section 4.3.
Description	Indicates that the particular group’s group change notification is subscribed or not (turned on or off).
Range	Defined in section 4.3

Table 103: SubscribeNotification

XML PCDATA	SubscribeType
Data type	String
Format	Text character
Description	The type of the subscription request. It is Get, Set, or Unset.
Range	G | S | U

Table 104: SubscribeType

XML PCDATA	SupportedBearer
Data type	Enumerated string
Format	Text string
Description	Bearer that the client supports.
Range	SMS | WSP | HTTP | HTTPS

Table 105: SupportedBearer

XML PCDATA	SupportedCIRMethod
Data type	Enumerated string
Format	Text string
Description	Communiction Intitiation Request method that the client supports.
Range	WAPSMS – for WAP 1.2/2.0 WSP unit push over SMS WAPUDP – for WAP 1.2/2.0 WSP unit push over UDP/IP SSMS – for standalone SMS SUDP – for Standalone UDP/IP STCP – for Standalone TCP/IP SHTTP – for Standalone HTTP

Table 106: SupportedCIRMethod

XML PCDATA	SupportedOfflineBearer
Data type	Enumerated string
Format	Text string
Description	Bearer that the client supports for offline notifications..
Range	SMS | WSP

Table 107: SupportedOfflineBearer

XML PCDATA	SystemMessageID
Data type	String
Format	Text string. The SystemMessage-ID is case sensitive.
Description	Identifies a system message.
Range	Max 50 characters

Table 108: SystemMessageID

XML PCDATA	SystemMessageText
Data type	String
Format	Text string.
Description	The content of the system message to be shown to the end-user.
Range	Max 512 characters

Table 109: SystemMessageText

XML PCDATA	TCPAddress
Data type	String
Format	Defined in section 4.2.
Description	The client may indicate that it wants to use a different IP address for standalone TCP/IP CIR method. TCPAddress contains this IP address.
Range	Defined in section 4.2.

Table 110: TCPAddress

XML PCDATA	TCPPort
Data type	Integer
Format	Defined in section 4.2.
Description	The client may indicate that it supports other than the default port for the standalone TCP/IP CIR method.
Range	Defined in section 4.2.

Table 111: TCPPort

XML PCDATA	TimeToLive
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the interval in which the server expects the KeepAliveRequest message in order to keep a session alive. (And how often should the KeepAlive transaction occur if no other transactions are done in the meantime.) Indicated in seconds.

Table 112: TimeToLive

XML PCDATA	TransactionContent
Data type	String
Format	As defined in the referred namespace.
Description	The transaction itself. This element is used to give reference to the namespace (DTD) to be used under this specific tag.
Range	The namespace attribute points to a valid Wireless Village transaction namespace

Table 113: TransactionContent

XML PCDATA	TransactionID
Data type	String
Format	Text string that is unique for each transaction in the scope of the session. The transaction-ID is case sensitive.
Description	Identifies a transaction. The initiating party assigns this ID.
Range	Max 50 characters

Table 114: TransactionID

XML PCDATA	TransactionMode
Data type	Enumerated string
Format	Text string
Description	Describes the nature of the transaction. Request if a new transaction is started, otherwise Response.
Range	Request | Response

Table 115: TransactionMode

XML PCDATA	TransactionNSName
Data type	String
Format	Namespace name, See [XML]
Description	Name of a Transaction Namespace

Table 116: TransactionNSName

XML PCDATA	TryAgainTimeout
Data type	Integer.
Format	Defined in section 4.2.
Description	Indicates the timeout period in seconds that the client MUST wait before repeating the related transaction.
Range	Defined in section 4.2.

Table 117: TryAgainTimeout

XML PCDATA	UDPAddress
Data type	String
Format	Defined in section 4.2.
Description	The client may indicate that it wants to use a different IP address for standalone UDP/IP CIR method. UDPAddress contains this IP address.
Range	Defined in section 4.2.

Table 118: UDPAddress

XML PCDATA	UDPPort
Data type	Integer
Format	Defined in section 4.2.
Description	The client may indicate that it supports other than the default port for the standalone UDP/IP CIR method.
Range	Defined in section 4.2.

Table 119: UDPPort

XML PCDATA	UnrecognizedUserID
Data type	See UserID definition.
Format	See UserID definition.
Description	See UserID definition.
Range	See UserID definition.

Table 120: UnrecognizedUserID

XML PCDATA	URL
Data type	String
Format	URL
Description	See [RFC2396].
Range	Max 200 characters

Table 121: URL

XML PCDATA	UserID
Data type	String
Format	Defined in [CSP]. The user-ID is not case sensitive.
Description	Unique identifier of a single user.
Range	Max 100 characters

Table 122: UserID

XML PCDATA	UserSessionLimit
Data type	Integer
Format	Defined in section 4.2.
Description	The UserSessionLimit indicates the maximum number of total concurrent sessions for the user[CSP section 6.9.1].
Range	From 2 to the upper limit defined in section 4.2.

Table 123: UserSessionLimit

XML PCDATA	Validity
Data type	Integer
Format	Defined in section 4.2.
Description	Indicates the interval in seconds during which the message is valid.
Range	Defined in section 4.2.

Table 124: Validity

XML PCDATA	ValidUserID
Data type	See UserID definition.
Format	See UserID definition.
Description	See UserID definition.
Range	See UserID definition.

Table 125: ValidUserID

XML PCDATA	Value
Data type	String
Format	Text string
Description	Used for multiple purposes, see [CSP] for further information about the particular case.
Range	Max 50 characters

Table 126: Value

XML PCDATA	VerificationKey
Data type	String
Format	Text string.
Description	Text containing the verification key entered by the end-user.
Range	Max 128 characters

Table 127: VerificationKey

XML PCDATA	WatcherCount
Data type	Integer
Format	Defined in section 4.2
Description	Indicates the total number of watchers
Range	Defined in section 4.2.

Table 128: WatcherCount

XML PCDATA	WatcherStatus
Data type	Enumerated string
Format	Text string
Description	Indicates the status of the watcher. There are three possible values: User is currently subscribing – CURRENT_SUBSCRIBER Subscription ended during history period - FORMER_SUBSCRIBER User did not subscribe, but used GetPresence to access presence info during history period. – PRESENCE_ACCESS
Range	CURRENT_SUBSCRIBER | FORMER_SUBSCRIBER | PRESENCE_ACCESS

Table 129: WatcherStatus

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version

A.2 Draft/Candidate Version 1.3 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-IMPS-WV-CSP_Data_Types-V1_3	31 Dec 2004	All	- Taken OMA-IMPS-Enabler-Package-V1_2-20041217-C package as baseline. - Updated references to 1.3 specs - also removed SCR references as those documents are going to be discontinued. - Removed WV tags from document IDs. - Minor re-wording in section 4.3. - Added missing element for CR OMA-IMPS-2003-0106-COMVERSE-NAT-UDP_CIR – there was no CR for this document. - Added clarification for table 76.
	7 Jan 2005	All	- Added SCR table.
	28 Jan 2005	2	- references updated.
	04 Feb 2005	2	- Applied OMA 2005 template.
	25 Apr 2005	All	- Added following approved CR´s: - OMA-IM-2005-0141-IMPS13_ShowMap-CSP-Data_Types - OMA-IM-2005-0065R04-IMPS-1.3-CSP-Data-Type-Changes-for-Content-Font-Formatting - OMA-IM-2005-0109-IMPS13_MMCName-CSP_Data_Types - OMA-IM-2005-0182-IMPS13_AdvSrc_CSP_DataTypes - OMA-IM-2005-0203-IMPS13_PublicProfile_CSP_PTS - OMA-IM-2005-0212-IMPS13_LowMem_CSP_DTYP - OMA-IM-2005-0261-IMPS13_SysMsgOZContinue_CSP_DTYP - OMA-IM-2005-0271-IMPS13_OffMsgSiemensContinue_CSP_DTYP - OMA-IM-2005-0244-IMPS13_InviteApp_CSP_DTYP - OMA-IM-2005-0246R01-IMPS13_MsgCapBound_CSP_DTYP - OMA-IM-2005-0254R01-DType-ADC-2 - OMA-IM-2005-0151-IMPS1.3-Maximum-length-of-GroupID - OMA-IM-2005-0158-IMPS13-Add-Contact-By-User-ID-DataTypes - OMA-IM-2005-0274-IMPS1.3-Timestamp-On-IM - OMA-IM-2005-0277-IMPS13-Extend-IM-and-PGC-DataTypes - OMA-IM-2005-0294-IMPS13_MultiSessionApp_CSP_DTYP
	26 Apr 2005	All	- Added the following approved CR´s: - OMA-IM-2005-0303-IMPS13_PrAuth_CSP_DTYP
Draft versions OMA-TS-IMPS-CSP_Data_Types-V1_3	12 Jul 2005	All	- Added the following approved CR´s: - OMA-IM-2005-0360-IMPS13-ArchRef-CSP_DataType - OMA-IM-2005-0342R01-IMPS-1_3-Consistency-review-Data_Types - OMA-IM-2005-0390-IMPS-13-CONRR-Correction-DataTypes - OMA-IM-2005-0403R02-IMPS-13-incon-CSP-XMLS-DataTypes - OMA-IM-2005-0462-IMPS-13-ExtendConversation-ID-DataTypes
	10 Aug 2005	All	- Added the following approved CR´s: - OMA-IM-2005-0525-IMPS13_DocUpdateAI-CSP_DTYP - OMA-IM-2005-0532-IMPS-13-DataTypes-MulitTransPerMessage

Document Identifier	Date	Sections	Description
			- OMA-IM-2005-0533R01-IMPS-13-DataTypes-SessionPriority - OMA-IM-2005-0535-IMPS-13-DataTypes-SAPSessionLimitRemoved - OMA-IM-2005-0538-IMPS-13-DataTypes-MaxWatcherList - OMA-IM-2005-0557-MPS13_AIs_CSP_DTYPE - OMA-IM-2005-0575-IMPS13_SysMsgReqResp_CSP-DTYP - OMA-IM-2005-0584-IMPS-1_3-CSP-DataTypes-autosub - Removed the reference to CLP in chapter 2.2
	25 Aug 2005	5.2	- Incorporated following CR: - OMA-IM-2005-0630-IMPS13_SearchOnAge-CSP_DTYP - Updated the refrences according to comments received from REL group.
	16 Sep 2005	5.2	- Incorporated following CR: - OMA-IM-2005-0652-IMPS-13-ExtendConversationFixes-DataTypes
Candidate versions OMA-TS-IMPS-CSP_Data_Types-V1_3	11 Oct 2005	n/a	Status changed to Candidate by TP TP ref # OMA-TP-2005-0279R01-IMPS-V1_3-for-Candidate-approval

Appendix B. Static Conformance Requirements (Normative)

The notation used in this section is specified in [IOPPROC].

B.1 Data Type requirements

B.1.1 Clients

Item	Function	Reference	Status	Requirement
DATAT-C-1	The basic data types are supported.	Section 4	M	
DATAT-C-2	The derived data types are supported.	Section 4.7	M	
DATAT-C-3	All values that are used by the client follow the defined data type and its limitations and formatting conventions.	Section 5	M	

B.1.2 Servers

Item	Function	Reference	Status	Requirement
DATAT-S-1	The basic data types are supported.	Section 4	M	
DATAT-S-2	The derived data types are supported.	Section 4.7	M	
DATAT-S-3	All values that are used by the server follow the defined data type and its limitations and formatting conventions.	Section 5	M	