

Active Line Access: ALA B2B Lead-to-Cash (L2C) XML standard

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Foreword

This NICC Document (ND) has been produced by the NICC Ethernet Working Group in collaboration with the Broadband Stakeholder Group (BSG) COTS project.

Introduction

Active Line Access provides a network solution to enable Next Generation Access (NGA) networks to provide connectivity between residential and business consumers and their respective Service Providers in an open and flexible way. It provides a technology agnostic connectivity solution, being applicable to DSL, PON and also Active Ethernet access networks. It provides a solution that allows a Tier one network provider to offer logically unbundled access solutions and it can also be used by a small community network operator as an industry standard interconnect to allow their community to connect to any number of Service Providers.

This document contains the XML standard for the ALA Business to Business Lead-to-Cash interface. This interface is used between an ALA User (referred to as the service buyer) and an ALA Provider (referred to as the service supplier) in order to order services that are provided over an Open Access Network that supports ALA.

This document is an XML implementation of the NICC B2B L2C ALA Interface Standard defined in ND1649 [1]. Other implementations of this standard may be provided in the future using other protocols.

1 Scope

ALA has been defined by NICC to satisfy requirements from Ofcom and NGN UK and UK industry, the full set of ALA requirements are described in [i.2].

ALA is fully defined in the following NICC documents.

- The ALA Architecture document [6]
- The ALA Service definition [7]
- The ALA UNI definition [8]
- The ALA NNI definition [9]

By deploying ALA the access network operator not only ensures that they can wholesale services to multiple service providers but also that Service Providers can connect to their networks because the underlying services are compatible with the Service Providers service models.

In order for this to be practical however it is essential to define the Business to Business (B2B) OSS interface between the ALA provider and the ALA User (i.e. the open access network operator and the Service Provider) so that the Service Provider can use the same OSS to connect subscribers to any number of different ALA provider networks. This requires a defined set of B2B processes and an agreed machine to machine interface.

Previous NICC work has produced a set of B2B specifications to support Next Generation Networks, of which the most relevant are the NICC B2B Trouble to Resolve (T2R) interface [i.3] and the NICC B2B Lead to Cash (L2C) interface [5].

The ALA B2B standards are defined in the following documents.

- The ALA Management Architecture [4]
- The NICC B2B ALA L2C interface standard [1]
- The NICC B2B L2C ALA XML Standard (this document)

This document provides an interface for automated business transactions between UK ALA Users (also known as buyers) and UK ALA Providers (also known as Suppliers) using Business-to-Business (B2B) interfaces based on XML messaging.

This is an XML implementation of the ALA L2C Interface standard defined in [1].

2 References

2.1 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

- [1] ND1649: NICC B2B Lead-To-Cash (L2C) ALA Interface Standard
- [2] ND1507:2007: NICC B2B Interface Framework Document Issue 2
- [3] ND1641 L2C XML Schema V1.1.1

- [4] ND1417 ALA Management and Provisioning Architecture
- [5] NICC ND1627:2007 NICC B2B Lead-To-Cash (L2C) Interface Standard.
- [6] NICC ND1644 Architecture for Ethernet Active Line Access (ALA), 2010
- [7] NICC ND1030 Ethernet ALA Service Definition, 2010.
- [8] NICC ND1031 Ethernet ALA UNI, 2010
- [9] NICC ND1036 Ethernet ALA NNI 2010

2.2 Informative references

- [i.1] Sr 001 262 (V2.0.0): “ETSI drafting rules Section 23:- Verbal Forms For The Expression of Provisions”
- [i.2] NICC ND1642 Requirements for Ethernet Interconnect and Ethernet ALA, 2010
- [i.3] NICC ND1626:2007 NICC B2B Trouble-To-Resolve (T2R) Interface Standard

Key Words, Definitions and Abbreviations

3.1 Key Words

The key words “shall”, “shall not”, “must”, “must not”, “should”, “should not”, “may”, “need not”, “can” and “cannot” in this document are to be interpreted as defined in the ETSI Drafting Rules [i.1].

3.2 Definitions

For the purposes of the present document the following terms and definitions apply.

ALA provider: Operator of the access network segment supporting Ethernet ALA

ALA user: Direct user of Ethernet ALA

Buyer: The party placing the order for service, in an ALA compliant network this will be the ALA User.

Supplier: The party receiving the order for service and providing the service, i.e. the access network operator. In an ALA compliant network this will be the ALA provider.

Touchpoint: A business transaction between the buyer and the supplier. This is in effect a point of interaction between their two OSS systems, and typically at the lowest level results in a command or message being passed between two automated systems using a mechanism such as XML.

3.3 Abbreviations

ALA	Active Line Access	(Ofcom)
-----	--------------------	---------

AUC	ALA User Connection	
CRUD	Create, Read, Update, Delete	(ND1627)
DSL	Digital Subscriber Line	(G.992)
DUNS	Data Universal Numbering System	
MAC	Migration Authorisation Code	(Ofcom)
NNI	Network Network Interface	(ND1644)
OAN	Open Access Network	(Ofcom)
OSS	Operational Support Systems	
PON	Passive Optical Network	
PONR	Point Of No Return	(ND1627)
SLA	Service Level Agreement	
UNI	User Network Interface	(ND1644)
XML	Extensible Markup Language	

4 Principles

4.1 Ease of implementation and consumption

- Single XML namespace for the core version 1.0 of the standard
- No attributes (unnecessary and makes it easier to transform into other data protocols)
- Consistent naming
- Reduction of redundant information
- Unique names for elements so that validation relies less on context e.g. macKey vs. key
- Users should be able to place an order without having to call any dialogue services
- Supporting backwards compatibility and extensibility takes precedence over making the schema easier to use in XML to Object mapping tools

4.2 Encapsulation

- Sufficient information in the message to decouple its processing from the transport layer
- Encryption, authentication and non-repudiation to be handled by the protocol

4.3 Backwards Compatibility

Backwards compatibility is done through additional namespaces. Both ALA Providers and ALA Users **MUST** accept orders with additional XML elements in new namespaces. Neither ALA Providers or ALA Users are obliged to do anything with these unrecognised elements including store them in their systems.

Extension (below) and backwards compatibility use the same mechanism.

Example of backwards compatibility:

```
<notifyOfOrderStatus xmlns="http://www.niccstandards.org.uk/ala_1.0.xsd"
  xmlns:ala11="http://www.niccstandards.org.uk/ala_1.1.xsd">
  ...
```



```
<buyer>
<buyerIdentifier>1234567890</buyerIdentifier>
</buyer>

<alal1:retailer>
<alal1:retailerIdentifier>RWC</alal1:retailerIdentifier>
</alal1:retailer>

...

</notifyOfOrderStatus>
```

4.4 Extension

Extension is done through custom namespaces. ALA Providers **MUST** accept orders without any extensions but can optionally enhance the messaging with custom extensions. Both ALA Providers and ALA Users **MUST** be able to process messages that contain extensions that they do not recognise. These elements can be ignored.

Example of Extension:

```
<notifyOfOrderStatus xmlns="http://www.niccstandards.org.uk/ala_1.0.xsd"
  xmlns:sp1="http://www.sp1.co.uk/sp1.xsd">
  ...

  <buyer>
  <buyerIdentifier>1234567890</buyerIdentifier>
  </buyer>

  <sp1:cpePinCode>1044</sp1:cpePinCode>

  ...

</notifyOfOrderStatus>
```

5 XML Schema

This document is accompanied by an XML Schema 1.0 document that enumerates all of the types required by the standard, along with examples of all of the valid XML payloads. This document enhances the specification with the addition of cardinality information. With the exception of the cardinality defined in this document, the XML Schema shall be considered the correct and complete specification for this standard. Conforming implementations of this standard **MUST** accept payloads with more elements than specified in this document but **SHOULD** ignore them.

6 Header Elements

The following header elements appear on all messages.

6.1 Message headers

Every message sent must have a message header block. Both the messageId and correlationIds are UUIDs. The messageId must be unique for each new message. Messages with the same messageId from the same partner can be considered duplicates and ignored. The correlationId is supplied by the party that sends the first message of a set of correlated messages e.g. a beginning of an order. All associated messages (status updates, or response messages) must have the same correlationId. The sentAt element is set by the party sending the message. It must use a timezone to avoid any daylight savings issues.

6.1.1 Elements

Name	Description	Type	Occurs	Required
message/messageId	A unique message Id	MessageID	1	Yes
message/correlationId	Used to correlate messages	CorrelationID	1	Yes
message/sentAt	The time the message was sent	SentAt	1	Yes

6.2 Buyer and Seller headers

Each message has a buyer and seller block that identifies the buyer. Both the buyer and seller identifiers must begin with a DUNS (Data Universal Numbering System regulated by Dun & Bradstreet). A DUNS can be extended using a + and an additional 4 numbers. This is to support organisations where relationships may be a finer grained than at the DUNS level (e.g. an ALA User that has multiple accounts at an ALA Supplier).

6.2.1 Elements

Name	Description	Type	Occurs	Required
buyer/buyerIdentifier	An identifier that uniquely identifies a buyer to a seller	BuyerIdentifier	1	Yes
seller/sellerIdentifier	An identifier that uniquely identifies a seller	SellerIdentifier	1	Yes

7 Errors and Rejections

Errors and rejections can happen in the following ways:

- Network errors
- System errors
- Transport Protocol errors
- XML validation errors
- ALA errors

This document only specifies errors that can be sent back via ALA XML payloads. Errors and Rejections follow a common structure. The top level tag has Rejected as a suffix e.g. amendOrderRejected and may contain the following elements.

7.2 Elements

Name	Description	Type	Occurs	Required
*Error	A specific error type e.g. orderError	OrderError, DialgoueServiceError, PollError etc.	0..1	No
validationFailures	Any validation failures	ValidationFailures	0..1	No
systemError	If a system error occurred, this is typically an indication that the same request can be resent	ErrorCodeAndMessage	0..1	No
errorOther	A general purpose error	ErrorCodeAndMessage	0..1	No

8 Orders

ALA supports the following orders:

- New Installs
- Migrations
- Modifies
- Ceases

8.1 Order Request

8.1.1 Order Request Headers

The following are the headers for an order request.

8.1.1.1 Elements

Name	Description	Type	Occurs	Required
buyerContactDetails	How to contact the buyer. Contains a phone number and email.	BuyerContactDetails	1	Yes
orderReferences	Buyer order reference on the	OrderReferences	1	Yes

	order request			
Notes	Any notes sent between the ALA User and ALA Provider. Note that this may cause additional delays to order processing.	Notes	0..1	No

8.1.2 Order References

8.1.2.1 Elements

Name	Description	Type	Occurs	Required
buyerOrderReference	The buyer's order reference, supplied in the orderRequest. This MUST be unique within the buyer organisation. The ALA Provider should pass this back to any responses to the order.	BuyerOrderReference	1	Yes
projectOrderReference	A 'project' order reference supplied in the orderRequest. This allows the buyer to indicate that a number of orders are grouped together. The ALA Provider should pass this back to any responses to the order. The projectOrderReference is generated by the ALA User.	ProjectOrderReference	0..1	No
sellerOrderReference	The seller's order identifier, supplied in any responses to the orderRequest. This is defined by the ALA Provider and MUST be unique for a ALA User.	SellerOrderReferences	0..1	No
requiredOrderReference	This is an order reference for an associated order that MUST complete before this order completes, i.e. it is a dependency for this order. ALA Providers are not obliged to support	RequiredOrderReference	0..1	No

	required / dependent orders. The required order reference is generated by the ALA User.			
--	---	--	--	--

8.1.3 Order Status

8.1.3.1 Elements

Name	Description	Type	Occurs	Required
alaOrderStatus	The ALA order status. This has the following values (based on the ALA B2B Interface standard): <ul style="list-style-type: none"> • pending • acknowledged • committed • completed • cancelled • rejected 	AlaOrderStatus	1	Yes

8.1.4 New Install

The installation of a new service. This includes activating services that already have networking in place. ALA Users should be able to place new install orders without having to call any Dialogue Services beforehand. Using the Dialogue Services is recommended as a way to allow for further order automation by ALA Providers.

8.1.4.1 Automation

Supplying the following fields should assist in automating this order type:

- location/addressKey
- appointment

8.1.4.2 Elements

Name	Description	Type	Occurs	Required
Location	The location that the service should be installed into. Could be a full address, an address key or gps coordinates.	BuyerContactDetails	1	Yes
Site	Information about the site that the service will be installed at e.g. contact details, access restrictions etc.	Site	1	Yes
Appointment	An appointment reference	Appointment	1	Yes*
appointmentSlot	An appointment slot	AppointmentSlot	1	Yes*
requestedDate	The date that the user would	RequestedDate	1	Yes*

	like the service installed			
serviceItem	The configuration for the service that is requested. This includes the name of the product, an alaServiceConfiguration and auxillary services	ServiceItem	1	Yes
costAuthorisation	The maximum amount to allow for construction and time related charges	CostAuthorisation	1	No

* One of appointment, appointmentSlot or requestedDate are required

8.1.5 Migration

The migration of a service from one ALA User to another on the same ALA Provider. Migrations are done using a MAC (Migration Authorisation Code). Currently the migration does not allow for an appointment to be requested up front.

8.1.5.1 Elements

Name	Description	Type	Occurs	Required
Mac	The mac key	Mac	1	Yes
requestedDate	The date that the user would like the service to migrate. Not supplying it implies that the ALA User would like the service migrated as soon as possible.	RequestedDate	0..1	No
serviceItem	The service to migrate.	ServiceItem	1	Yes

8.1.6 Modify

A request to modify the service from the ALA User to the ALA Provider. This standard does not enumerate what is considered available for modification vs. what requires a cease and reprovide of the service. Location can not be modified (i.e. home mover / change of address). Modifications may require an appointment.

8.1.6.1 Elements

Name	Description	Type	Occurs	Required
serviceIdentifier	The identifier of the service	ServiceIdentifier	1	Yes
Site	Information about the site if a site visit is required	Site	1	No
serviceItem	The service to migrate.	ServiceItem	1	Yes
Appointment	An appointment reference	Appointment	0..1	No
appointmentSlot	An appointment slot	AppointmentSlot	0..1	No
requestedDate	The date that the user would like the service installed	RequestedDate	0..1	No
costAuthorisation	The maximum amount to allow for construction and time related charges	CostAuthorisation	1	No

8.1.7 Cease

A request to cease the service from the ALA User to the ALA Provider. Ceases may require an appointment to retrieve line plant for temporary sites but typically will not.

8.1.7.1 Elements

Name	Description	Type	Occurs	Required
serviceIdentifier	The identifier of the service	ServiceIdentifier	1	Yes
Site	Information about the site if a site visit is required	Site	0..1	No
Appointment	An appointment reference	Appointment	0..1	No
appointmentSlot	An appointment slot	AppointmentSlot	0..1	No
requestedDate	The date that the user would like the service installed	RequestedDate	0..1	No

8.2 Order Status Updates

8.2.1 Top Level Elements

Name	Description	Type	Occurs	Required
alaOrderInProgress	The order is in progress	AlaOrderInProgress	0..1	Yes*
alaOrderFailed	The order has been cancelled or rejected	AlaOrderFailed	0..1	Yes*
alaOrderCompleted	The order has completedd	AlaOrderCompleted	0..1	Yes*
Notes	Any notes sent along with the status update	Notes	0..1	No
sequenceNumber	The number of this status update starting at 0. Provides a way for ALA Users to reorder out of sequence updates, identify missing updates or ignore duplicate updates.	SequenceNumber	1	Yes
issuedAt	The date and time the notification was issued. If this message is republished, the issuedAt MUST remain the same.	IssuedAt	1	Yes

* One of the top level elements is required

8.2.2 In Progress

The order is considered in progress if it is in one of the following states:

- pending
- acknowledged
- committed

ALA Providers MUST only return an alaInProgress element if the order is in one of the above states.

8.2.2.1 Elements

Name	Description	Type	Occurs	Required
additionalCharges	Communicate additional charges	AdditionalCharges	0..1	No
Delayed	Communicate that the order is now in delay	Delay	0..1	No
orderChanges	A list of order changes, this allows ALA Providers to notify ALA Users of changes	OrderChanges	0..1	No
requestedDate	The current requested date of the order.	RequestedDate	1	Yes
Location	The final location for the service. This provides a way to clarify addresses and upgrade temporary address keys to final address keys	Location	0..1	No
appointment	The appointment that has been booked for this order. Orders that require appointments should have this field returned when the order is committed.	Appointment	0..1	No
committedDate	The date the order should be completed by.	CommittedDate	1	Yes
serviceIdentifier	Configuration for the service that will be delivered, specifically, the service id.	Service	1	Yes
serviceItem	The service item that was ordered	ServiceItem	1	Yes
cancellationRejected	Indicates that a cancellation has been rejected and the order will still proceed.	CancellationRejected	0..1	No
amendmentRejected	Indicates that an amendment has been rejected.	AmendmentRejected	0..1	No
amendmentAccepted	Indicates that the order amendment has succeeded.	AmendmentAccepted	0..1	No
auxiliaryServiceCancellations	Whether any auxiliary services have been cancelled	AuxiliaryServiceCancellations	0..1	No
Warning	Warning of a potential issue	Warning	0..1	No

	in delivering the service			
--	---------------------------	--	--	--

8.2.3 Completed

This element should be used when the ALA Provider has completed the order and **MUST** only be returned when the order state is completed. There can only be one of these and no further message are allowed for this order.

8.2.3.1 Elements

Name	Description	Type	Occurs	Required
Location	The final location for the service. This provides a way to clarify addresses and upgrade temporary address keys to final address keys	Location	0..1	No
completedDate	This is the date that the order completed.	CompletedDate	1	Yes
Service	Configuration for the service that has been delivered.	Service	1	Yes
additionalCharges	Charges that have applied to this order	AdditionalCharges	0..1	No
Warning	Warning of a potential issue in delivering the service	Warning	0..1	No
auxiliaryServiceCancellations	Whether any auxiliary services have been cancelled	AuxiliaryServiceCancellations	0..1	No

8.2.4 Failed

This state indicates that the ALA Provider cannot fulfil the order. ALA Provider **MUST** only return this element when the order state is either rejected or cancelled.

8.2.4.1 Elements

Underlying elements are either `alaOrderCancelled` or an `alaOrderRejected`.

Name	Description	Type	Occurs	Required
<code>alaOrderCancelled</code>	Order was cancelled	<code>alaOrderCancelled</code>	0..1	Yes*
<code>alaOrderRejected</code>	Order was rejected	<code>alaOrderRejected</code>	0..1	Yes*

* One of cancelled or rejected is required.

8.2.5 Cancelled

This state indicates that the order has been cancelled. There can only be one of these and no further messages are allowed for this order.

8.2.5.1 Elements

Name	Description	Type	Occurs	Required
cancellationReason	The reason that the order was cancelled	CancellationReason	1	Yes

8.2.6 Rejected

This state indicates that the order has been rejected by the ALA Provider. There can only be one of these and no further messages are allowed for this order.

8.2.6.1 Elements

Name	Description	Type	Occurs	Required
orderError	An order specific error	OrderError	0..1	No
validationFailures	Any validation failures	ValidationFailures	0..1	No
systemError	If the order was rejected because of a system error	SystemError	0..1	No
errorOther	An uncategoryed error occurred	ErrorOther	0..1	No

8.3 Cancellations and Amendments

ALA Users can cancel or amend orders that are either in the Acknowledged or Committed state. This is done by sending a cancel or amend request to the ALA Provider. The provider should immediately acknowledge the cancellation or amendment request with a cancellation pending or an amendment pending response unless the request fails validation (e.g. no order with that identifier exists). At the point where the ALA Provider processes the cancellation or amendment, the order **MUST** be updated with the result of that cancellation or amendment.

The cancellation and amendment responses to the order **MUST** contain a reference to the amendment or cancellation that resulted in the update.

8.3.1 Cancel

8.3.1.1 Request

Name	Description	Type	Occurs	Required
targetSellerOrderReference	The seller order reference	TargetSellerOrderReference	1	Yes
orderReferences	The reference for this cancellation	OrderReferences	1	Yes
cancellationReason	Cancellation Reason	CancellationReason	1	Yes

Success Response

Name	Description	Type	Occurs	Required
orderReferences	The reference for this cancellation	OrderReferences	1	Yes
cancellationPending	Cancellation Pending	CancellationPending	1	Yes

8.3.2 Amend

8.3.2.1 Request

Name	Description	Type	Occurs	Required
targetSellerOrderReference	The seller order reference	TargetSellerOrderReference	1	Yes

orderReferences	The reference for this cancellation	OrderReferences	1	Yes
acceptCharges	Whether the charges are accepted	AcceptCharges	0..1	No
Notes	Notes, used to provide additional information to the ALA Provider	Notes	0..1	No
appointment	An appointment reference. To reappoint the order	Appointment	0..1	No
requestedDate	A request for a new date for the service to be delivered	RequestedDate	0..1	No
serviceItem	A request for changes to the service	ServiceItem	0..1	No

8.3.2.2 Success Response

Name	Description	Type	Occurs	Required
orderReferences	The reference for this cancellation	OrderReferences	1	Yes
amendmentPending	Amendment Pending	AmendmentPending	1	Yes

9 Locations

The following section describes dialogue services used to query information about locations.

9.1 Query Address Search

Query Address Search returns a set of matched locations based on a partial location passed in the request.

9.1.1 Request

Name	Description	Type	Occurs	Required
location	Partial location information e.g. a postode	Location	1	Yes

9.1.2 Success Response

Name	Description	Type	Occurs	Required
locations	A list of matching locations	Locations	1	Yes

9.2 Query Products for Location

Query Products for Location returns the products that the ALA Provider can offer for the locations that match the partial location passed in the request.

9.2.1 Request

Name	Description	Type	Occurs	Required
location	A partial location to query for available products	Location	1	Yes

9.2.2 Success Response

Name	Description	Type	Occurs	Required
locations	A set of locations with available products.	Locations	1	Yes

9.3 Query Line Availability

Query Line Availability returns the list of services that are active at a location.

9.3.1 Request

Name	Description	Type	Occurs	Required
addressKey	The address key for the site	AddressKey	1	Yes

9.3.2 Success Response

Name	Description	Type	Occurs	Required
activeServices	The list of active services at site	ActiveServices	1	Yes

10 MACs

The ALA specification requires the use of Migration Authorisation Codes.

10.1 Mac

Requests a new MAC from the ALA Provider for a set of services. These services MUST be located in the same location.

10.1.1 Request

Name	Description	Type	Occurs	Required
serviceIdentifiers	The identifier of the services to supply a mac for.	ServiceIdentifiers	1	Yes

10.1.2 Success Response

Name	Description	Type	Occurs	Required
mac	The MAC and how long it is valid for	Mac	1	Yes

10.2 Validate Mac

Validate Mac is used by the ALA User to validate whether the MAC given to them by a potential customer is valid.

10.2.1 Request

Name	Description	Type	Occurs	Required
mac	The MAC	Mac	1	Yes

10.2.2 Success Response

Name	Description	Type	Occurs	Required
macStatus	Whether the MAC is valid or not	MacStatus	1	Yes
location	The location of the service along with any available products.	Location	0..1	No
products	The products associated with the services associated with the mac.	Product	0..1	No

11 Services

11.1 Query Installation Details

Query information about an active service.

11.1.1 Request

Name	Description	Type	Occurs	Required
serviceIdentifier	The service identifier	ServiceIdentifier	1	Yes

11.1.2 Success Response

Name	Description	Type	Occurs	Required
activeService	The Active Service associated with the service identifier	ActiveService	0..1	No

12 Appointing

12.1 Query Appointment Availability

Note: There is no end date to the appointment search because this is a parameter that the ALA Provider can control. The ALA Provider should specify how many days worth of appointments the queryAppointmentAvailability interface supports.

12.1.1 Request

Name	Description	Type	Occurs	Required
addressKey	The address key for the	AddressKey	1	Yes

	location			
appointmentsFrom	The start date for the appointment search.	AppointmentsFrom	1	Yes
appointmentType	Whether it's for an order or a fault	AppointmentType	1	Yes
technology	The type of technology	Technology	1	Yes

12.1.2 Success Response

Name	Description	Type	Occurs	Required
appointentSlots	The available appointment slots	AppointmentSlot	1	Yes

12.2 Reserve Appointment

Requests that an appointment slot be reserved.

12.2.1 Request

Name	Description	Type	Occurs	Required
appointmentSlot	The appointment slot requested	AppointmentSlot	1	Yes
appointmentType	The appointment type i.e. order or fault	AppointmentType	1	Yes
technology	The type of technology	Technology	1	Yes

12.2.2 Success Response

Name	Description	Type	Occurs	Required
appointment	An appointment reservation	Appointment	1	Yes

13 Types

Note, the accompanying XML Schema document and examples contain the full set of valid ALA entities.

13.1 ServiceItem

A serviceItem element is an order item that contains a request for a service. It specifies the product being ordered as well as the required configuration for the service.

Name	Description	Type	Occurs	Required
product	The product being purchased	Product	1	Yes
alaServiceConfiguration	The configuration for the ALA service	AlaServiceConfiguration	0..1	No
auxiliaryServices	A set of dependent services that should be installed as part of the service e.g. Home Wiring	AuxiliaryServices	0..1	No

13.2 AlaServiceConfiguration

The AlaServiceConfiguration contains all of the configuration required to order / install an ALA service.

Name	Description	Type	Occurs	Required
uniVlanId	The UNI VLAN ID	UniVlanId	0..1	No
untaggedSVlanId	The untagged SVLAN ID	UntaggedSVlanId	0..1	No
uniAucGroupIdentifier	The UNI AUC Group Identifier	UniAucGroupIdentifier	0..1	No
pppoeIntermediateAgent	The PPOE Intermediate Agent	PppoeIntermediateAgent	0..1	No
l2DhcpRelayAgent	The L2 DHCP Relay Agent	L2DhcpRelayAgent	0..1	No
aucRemoteId	The AUC Remote ID	AucRemoteId	0..1	No
nniIdentifier	The NNI Identifier	NniIdentifier	1	Yes
nniAucGroupIdentifier	The NNI AUC Group Identifier	NniAucGroupIdentifier	0..1	No
uniAucEndPointIdentifier	The UNI AUC End Point Identifier	UniAucEndPointIdentifier	0..1	No
aucCircuitId	AUC Circuit Id	AucCircuitId	0..1	No
nniSVlanId	NNI S-VLAN ID	VlanId	0..1	No
nniCVlanId	NNI C-VLAN ID	VlanId	0..1	No
aucNniEndPoint	AUC NNI End Point	AucNniEndPoint	0..1	No

14 Protocols

NICC ALA XML can be delivered over a number of protocols. The following describes how the endpoints are configured in ebXML and SOAP.

14.1 ebXML

The standard transport for ALA ebXML is HTTPS.

Sender	Service	Action	Ack	Signed
ALA User	AlaOrderv1	orderRequest	Yes	Yes
ALA Provider	AlaOrderv1	notifyOfOrderStatus	Yes	Yes
ALA User	AlaCancellationv1	cancelOrderRequest	Yes	Yes
ALA Provider	AlaCancellationv1	cancelOrderResponse	Yes	Yes
ALA User	AlaAmendmentv1	amendOrderRequest	Yes	Yes
ALA Provider	AlaAmendmentv1	amendOrderResponse	Yes	Yes
ALA User	AlaQueryAddressSearchv1	queryAddressSearchRequest	No	No
ALA Provider	AlaQueryAddressSearchv1	queryAddressSearchResponse	No	No
ALA User	AlaQueryProductsForLocationv1	queryProductsForLocationRequest	No	No
ALA Provider	AlaQueryProductsForLocationv1	queryProductsForLocationResponse	No	No
ALA User	AlaMacv1	macRequest	Yes	Yes
ALA Provider	AlaMacv1	macResponse	Yes	Yes
ALA User	AlaValidateMacv1	validateMacRequest	No	No
ALA Provider	AlaValidateMacv1	validateMacResponse	No	No

ALA User	AlaQueryAppointmentAvailabilityv1	queryAppointmentAvailabilityRequest	No	No
ALA Provider	AlaQueryAppointmentAvailabilityv1	queryAppointmentAvailabilityResponse	No	No
ALA User	AlaReserveAppointmentv1	reserveAppointmentRequest	Yes	Yes
ALA Provider	AlaReserveAppointmentv1	reserveAppointmentResponse	Yes	Yes
ALA Provider	AlaUnsolicitedCeasev1	unsolicitedCeaseRequest	Yes	Yes
ALA Provider	AlaUnsolicitedCeasev1	notifyOfOrderStatus	Yes	Yes
ALA User	AlaQueryOrderStatusv1	queryOrderStatusRequest	No	No
ALA Provider	AlaQueryOrderStatusv1	queryOrderStatusResponse	No	No
ALA Provider	AlaUserRepublishv1	republishRequest	No	No
ALA Provider	AlaUserRepublishv1	republishResponse	No	No
ALA User	AlaProviderRepublishv1	republishRequest	No	No
ALA User	AlaProviderRepublishv1	republishResponse	No	No
ALA User	AlaQueryInstallationDetailsv1	queryInstallationDetailsRequest	No	No
ALA Provider	AlaQueryInstallationDetailsv1	queryProductsForLocationResponse	No	No
ALA User	AlaQueryLineAvailabilityv1	queryLineAvailabilityRequest	No	No
ALA Provider	AlaQueryLineAvailabilityv1	queryLineAvailabilityResponse	No	No

14.2 SOAP

The following are the SOAP messages. The standard requires the following:

- SOAP payloads are document literal style
- Implementations must be compatible with WS-Basic Profile 1.0

In order to simplify the design, the following asynchronous messages have an empty response element:

- order
- notifyOfOrderStatus
- unsolicitedCease

The SOAP interface can be both fully bidirectional or ALA Users can use the pollv1 method to retrieve messages where they would otherwise be the receiver.

14.2.1 Managing Change

Due to the design of both SOAP WSDLs and XML Schema, it is not possible to guarantee that a library will be able to handle unexpected elements. As a result, different WSDLs are required to introduce additive changes. To reduce the cost of change the following are strongly recommended:

- Switch off schema validation so that new elements can be processed without causing an error and make the SOAP endpoint configurable at runtime.
- Optimise for supporting multiple versions of the same interface and automatically downgrading to old versions. It is expected that the versioned endpoint names will be agreed bilaterally between the ALA Provider and ALA User.

14.2.2 Operations

Receiver	Operation	RequestElement	ResponseElement
ALA Provider	order	orderRequest	orderResponse
ALA User	notifyOfOrderStatus	notifyOfOrderStatus	notifyOfOrderStatusResponse
ALA Provider	cancelOrder	cancelOrderRequest	cancelOrderResponse
ALA Provider	amendOrder	amendOrderRequest	amendOrderResponse
ALA Provider	queryAddressSearch	queryAddressSearchRequest	queryAddressSearchResponse
ALA Provider	queryProductsForLocation	queryProductsForLocationRequest	queryProductsForLocationResponse
ALA Provider	mac	macRequest	macResponse
ALA Provider	validateMac	validateMacRequest	validateMacResponse

ALA Provider	queryAppointmentAvailability	queryAppointmentAvailabilityRequest	queryAppointmentAvailabilityResponse
ALA Provider	reserveAppointment	reserveAppointmentRequest	reserveAppointmentResponse
ALA User	unsolicitedCease	unsolicitedCeaseRequest	unsolicitedCeaseResponse
ALA Provider	queryOrderStatus	queryOrderStatusRequest	queryOrderStatusResponse
ALA Provider	poll	pollRequest	pollResponse
ALA Provider	republish	republishRequest	republishResponse
ALA User	republish	republishRequest	republishResponse
ALA User	queryInstallationDetails	queryInstallationDetailsRequest	queryInstallationDetailsResponse
ALA User	queryLineAvailability	queryLineAvailabilityRequest	queryLineAvailabilityResponse

History

Document History		
Version	Date	Milestone
1.1.1	11/02/13	Initial full version