IFRA adConnexion 2.0

XML Vocabulary

Version: 2.0

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1. IFRA adConnexion 2.0

This document describes an electronic way of implementing advertising processes, including quotation, order, confirmation etc. The document shows how IFRA adConnexion XML messages can be used to interchange information between different parties involved in an ad ordering process.

Document Status

This is the approved specification for IFRA adConnexion 2.0.

This document together with the XML Schema gives a complete specification of IFRA adConnexion version 2.0. It will replace all earlier versions that are no longer valid and, thus, should not be used.

Definitions of key words used in the specification

The key words "**MUST**", "**MUST NOT**", "**REQUIRED**", "**SHALL**", "**SHALL NOT**", "**SHOULD**", "**SHOULD NOT**", "**RECOMMENDED**", "**MAY**", and "**OPTIONAL**" in this document are used as described in IETF RFC 2119 [IETF1] (See Appendix B References). When any of these words do not appear in upper case as above, then they are being used with their usual English language sense and meaning.

Reading instructions

This document is together with the XML Schema the formal specification of the IFRA adConnexion vocabulary. Additional information such as example data is available at the IFRA adConnexion web site hosted by IFRA (http://www.ifra.com).

The document is divided into the following parts:

- Description of the supported ad order process (chapter 2)
- An overview of the IFRA adConnexion vocabulary and message definition (chapter 3)
- A reference section describing all elements and attributes (chapter 4)
- A description of the XML Schema files that provide the formal definition of IFRA AdConnexion including datatypes (type library)

IFRA adConnexion is an application of the eXtensible Markup Language (XML). XML is a standard for creating markup languages for documents containing structured information. XML is defined by the World Wide Web Consortium [W3C1]. A markup language is a method to specify structures in a document. The XML specification defines a standard way to add markup to document contents.

There are many tutorials available on the web for the interested reader. Apart from the W3C (http://w3.org) itself also XML.com and XML.org can be recommended for further information about XML and related technologies. For working with and understanding IFRA adConnexion, knowledge about XML Schema is needed in addition to basic XML knowledge.

Naming of Elements and Attributes

Naming principles used for elements and attributes of the IFRA adConnexion XML vocabulary are as follows:

- Elements: Initial capital letter. In cases where the element name consists of many words, each word starts with a capital letter (e. g. SpaceSellers).
- Attributes: Initial lower case letter. In cases where an attribute name consists of many words, the first word starts with a lower case and the following words with a capital letter (e. g. mediaType).
- Exception: Abbreviations are written in capital letters, e.g. partyID.

Note: XML is a case-sensitive language, so the naming rules and the usage of upper and lower case must be strictly carried out.

Version History

2004-06-21: IFRA adConnexion version 2.0

- Version 2.0 is a major upgrade with focus on enabling automated response messages.
- A new messaging model from the AdsML Framework standard has been adopted.
- A new approach to message identifiers has been incorporated.
- The content of each particular message type is nevertheless very similar to previous versions with regards to CustomerParties, Payment, Scheduling and ProductionDetail.
- Each insertion date may now have different format data
- Sizes can be given in any units supporting also non metric applications.
- Support for digital signatures is included.

2002-11-08: IFRA adConnexion version 1.1

2001-06-14: First version, IFRA adConnexion 1.0

Acknowledgements

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The first international version was a translation of an earlier Swedish version developed by the Swedish Newspaper Publishers' Association, AdCenter AB, Paragram AB and CNet Svenska AB. The standard was handed over to IFRA in 2001 and translated by Iocore Solutions Oy, Finland,

Acknowledgements and thanks to other contributors for additional input to this document are listed in Appendix A: Acknowledgements.

2. Ad Order Processes - Overview

IFRA adConnexion is an XML-based vocabulary for the advertising industry. The vocabulary can be used for transmitting electronic messages between organizations' different information systems.

IFRA adConnexion handles the order process from quotations to order and cancellations, including changes. A single booking transaction can handle several ad insertions for a single publication, where each insertion might have different format data, artwork, size etc.

IFRA adConnexion supports the ad order process as proposed in the AdsML standard.

AdsML and IFRA adConnexion

The Advertising Markup Language, AdsML (http://www.adsml.org) is an XML standard developed by an international consortium of companies and organizations. Founders include IFRA and the Newspaper Association of America (NAA).

AdsML provides an XML framework for unifying and extending XML advertising standards. Where existing standards such as IFRA adConnexion focus on specific parts of the overall advertising process, the AdsML specifications fill in the gaps between such standards and specifications, extend their reach and encourage convergence when they overlap.

Technically, AdsML is designed as an XML envelope that, wherever possible, relies on other standards such as IFRA adConnexion to describe

- the content and metadata carried within advertising transactions, and
- the management and infrastructure services (such as security and transaction protocols) that are required to support those standards.

An AdsML envelope can carry both XML as well as legacy formats such as comma separated text files and binary files. Usage of AdsML for transporting content standards such as IFRA adConnexion is described in [AdsML1] and [AdsML2]

For IFRA adConnexion, the AdsML Framework provides a messaging infrastructure for delivery of IFRA adConnexion messages. As an international standard, there will also be software applications available that have been built on AdsML specifications and so can deliver IFRA adConnexion messages.

An important issue in enabling automatic business message flows is the use of a common well-defined message choreography. One of the main deliverables in AdsML 1.0 is a set of business process models and related documentation that includes a definition of common process models for the workflows of selected advertising classes [AdsML3]. Selected parts of these business processes are supported in IFRA adConnexion 2.0 in order to enable IFRA adConnexion messages to be carried as content in AdsML envelopes.

AdsML provides, to implementers as well as users nationally and internationally, a clearly defined generic business process model and choreography of message flows. Putting this into use will enhance interoperability between systems.

Thus, in IFRA adConnexion 2.0 the older business process model as described in version 1.x (transaction types) has been replaced with AdsML message types. However, the change is not really dramatic. As IFRA is one of the founding members and sponsors of AdsML, IFRA adConnexion's previous transaction model has been one of the inputs to the work of the AdsML Consortium and constitutes a subset of AdsML's process model.

Use of AdsML is optional

IFRA adConnexion 2.0 uses the AdsML business process model as a foundation for its message types. However, it is important to note that IFRA adConnexion does not require use of nor support for the AdsML Framework with regards to the XML envelope or software applications. The actual transfer of IFRA adConnexion messages can be performed by arbitrary method and software application, with or without the AdsML Framework and its envelope. For instance, an IFRA adConnexion message can

be transmitted using other envelopes such as ebXML or BizTalk or directly by FTP, HTTP or SMTP services.

The AdsML Business Processes – Overview

The following diagram is an overview of the business processes defined by AdsML [AdsML3]:

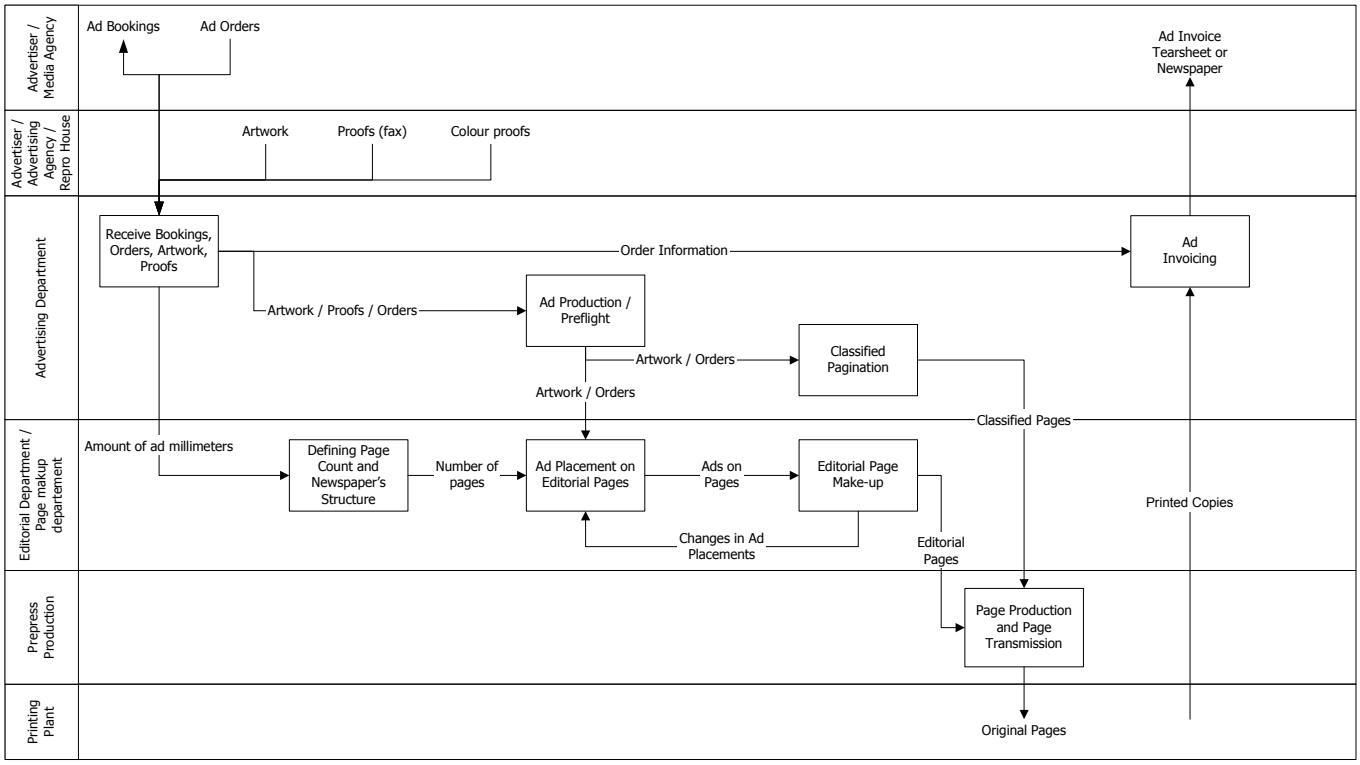


Figure 2.1: Overview of the AdsML business process model. Participating parties are defined in the left column. Arrows represent message flows between the supported process(es) of the various participating parties [AdsML3].

IFRA adConnexion focuses on the booking and artwork processes and message flows in the current version, but might in future versions also support other parts of the process model. For further information about the process model, see [AdsML3].

Trading Partner Agreement – The TPA

Any electronic data interchange is based on an agreement between trading partners often referred to as a trading partner agreement, or a TPA. A TPA can be a formal set of rules that are used by software systems directly, or an informal agreement about how to conduct business messages interchange.

The content of actual instances of IFRA adConnexion messages is only partly defined by the XML Schema. In order to provide necessary flexibility in how to design and implement business processes for many different organizations, a certain amount of optionality is required with respect to which data to include in messages. In cases where two specific trading partners agree on more specific rules for the use of the syntactically optional elements and attributes, these rules constitute a natural part of the TPA between these trading partners. However, it should be noted that a TPA must never overrule the definitions in the IFRA adConnexion specifications.

3. IFRA adConnexion vocabulary and message definition

This version of the IFRA adConnexion vocabulary concentrates on the ad booking and ordering processes. It provides the possibility to specify details' concerning an advertisement's publishing requirements, as specified during the booking process. These details can define, for example, the colour and size information of the ad. In addition, every party involved in the ad booking and production processes can be defined. The vocabulary can also be used for transmitting financial information in terms of price and discount elements.

Each request for an ad insertion can be separated into four main areas:

1. **Space Sellers**. Every booking request or response is related to one or more space selling companies. There is a requirement that all information content in an ad booking is common for all sellers.
2. **Payment**. Payment conditions required for expressing the price and discount of the ad and the invoicing address of the buyer(s).
3. **Customer Parties**. All the parties involved in the advertising process/workflow (ad agency, media agency, space selling company etc.)
4. **Production Detail**. Parameters that drive the production process of the ad. Publishing, placing, colours, size etc.

Structural Overview

This section gives a brief overview of the IFRA adConnexion XML structure using hierarchical diagrams. For detailed information about the content models and attributes, please see the following reference section "Reference".

An IFRA adConnexion message can be seen as an envelope containing one or more business messages. The business messages are divided into requests and responses to requests. The overall envelope structure is shown in figure 1.

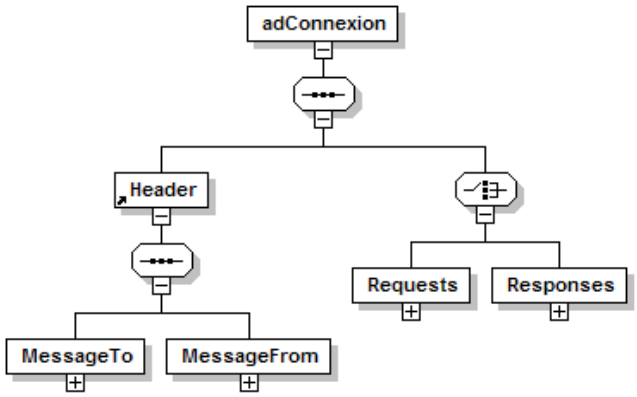


*Figure 3.1. The IFRA adConnexion envelope consists of a **Header** that defines the sender and recipient of the message and either a **Requests** or a **Responses** element.*

Different types of request message structures have specific top elements indicating the type of business message. The content of each message is however defined on the same reusable module with slight variations according to the requirements for the message. As can be seen in figure 3.2, there are currently seven different request messages defined e.g. **AdQuotationRequest**, **AdReservation** etc. The names of the message elements are derived from the corresponding AdsML business name; see the following section for more information.

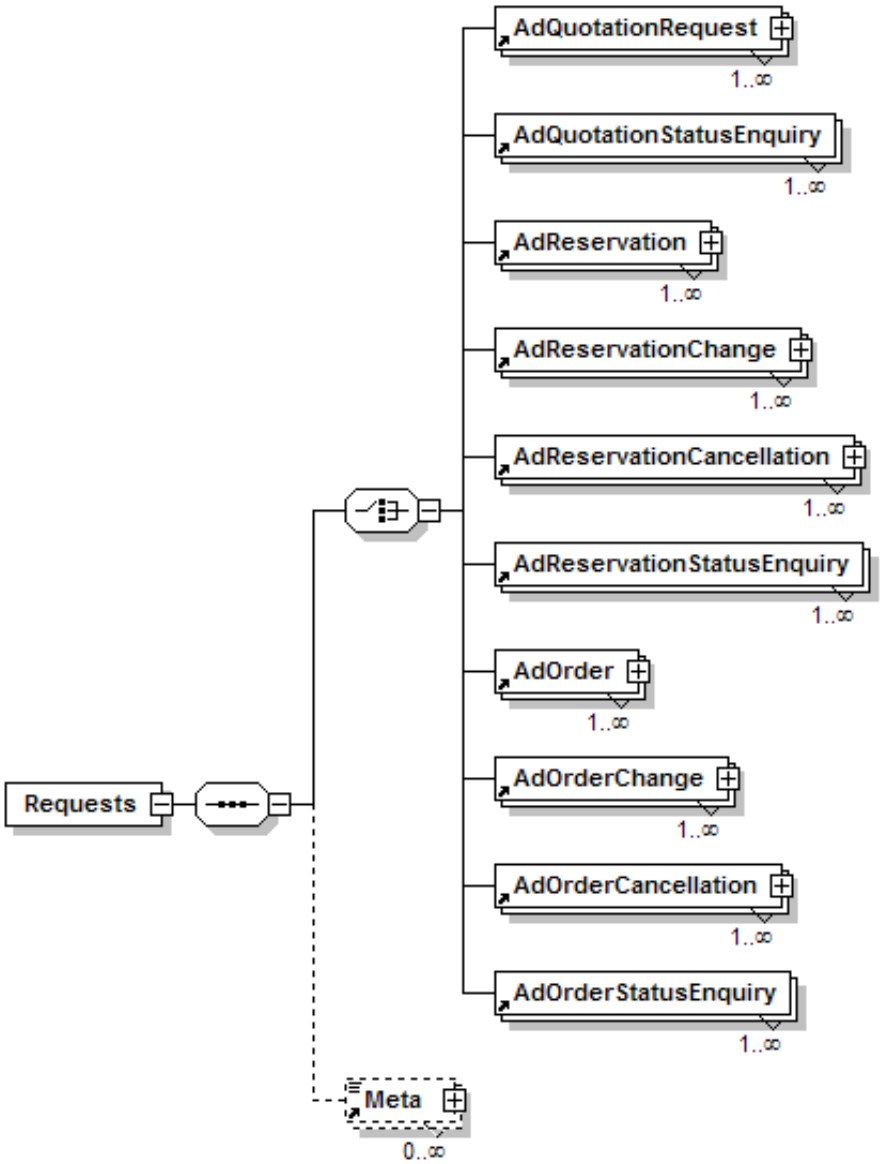


*Figure 3.2. The **Requests** element includes a set of transaction elements. User defined **Meta** information can be added to requests and responses. A request may include several transaction elements, but all have to be of the same type.*

Responses have a very similar structure to requests, with a specific top element for each business message. In addition, technical level responses can be given using the **MessageAcknowledgement** element.

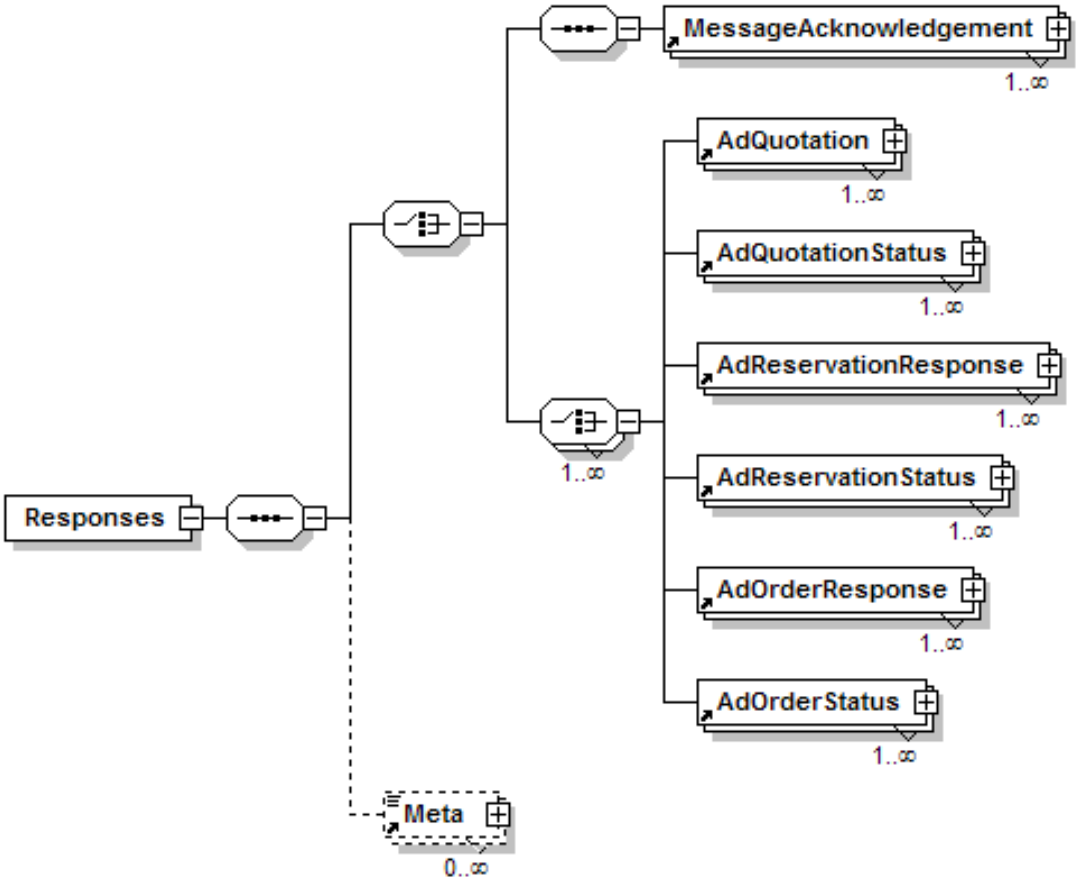


*Figure 3.3. The **Responses** element handles two different types of responses, either administrative responses with the **MessageAcknowledgement** element or business transaction responses. In case of a business transaction error response, the reason for the error is described using the **TransactionDenied** element. User defined **Meta** information can be added to requests and responses.*

The **AdInsertionRequestModule** is a reusable component that appears in most request messages. It includes elements for specifying the sellers and buyers of ad space, payment and production detail. In the same way, an **AdInsertionResponseModule** messages with a similar structure exists for responses.

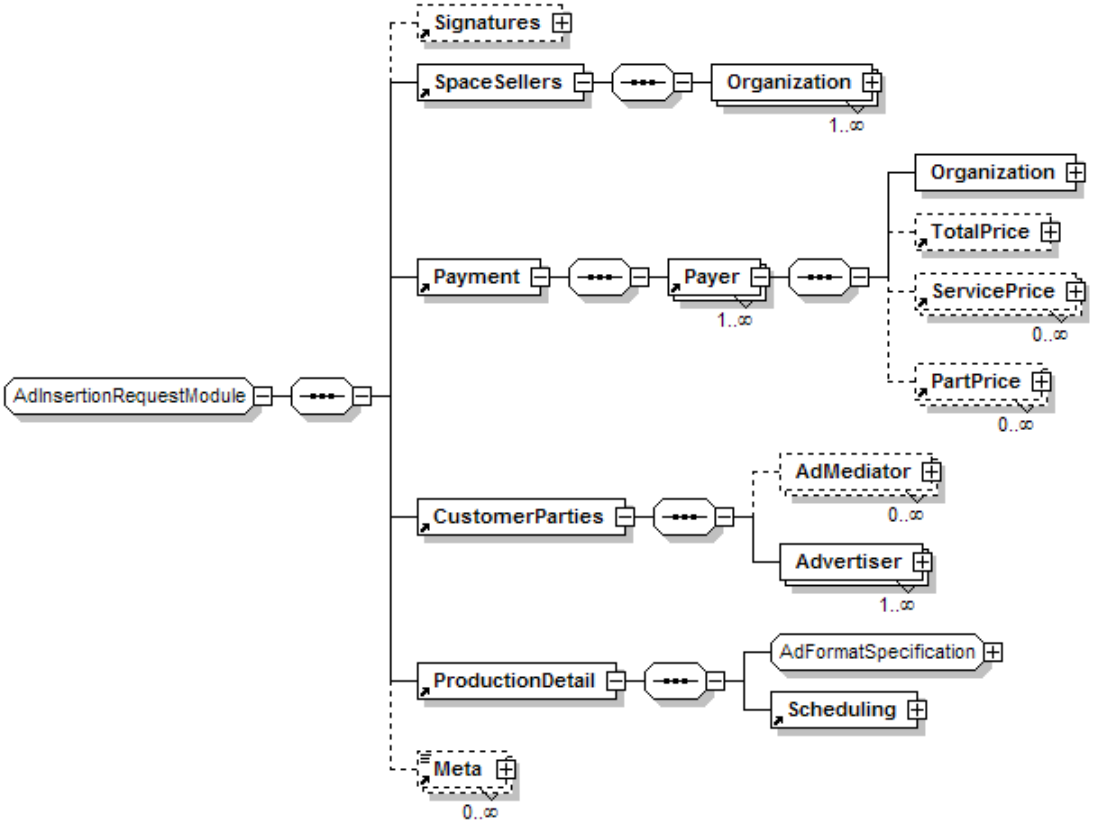


*Figure 3.4. The **AdInsertionRequestModule** holds all information regarding ad insertion transactions for different types of requests. It is reused in many different business messages such as request for ad orders. The **SpaceSellers** element defines the organizations selling ad space in the transaction. The **Payment** element specifies prices including discounts and payers. The **CustomerParties** element defines a set of organizations that are customers or their agents. The **ProductionDetail** element defines information about the production of the ad, such as placement and colours. An optional **Meta** element can be used for additional application specific information in connection with the transaction.*

Business Message Types and Choreography

Each business message type is identified by a message code that specifies if the message is, for instance, an ad order, an ad order change, a cancellation, or responses to these messages. IFRA adConnexion supports a subset of business messages as defined in AdsML [AdsML3], namely messages from the ad bookings message group (AD).

The message type is expressed as a code value for the **messageCode** attribute on transaction elements such as **AdOrder**. The code values are defined as the code values used in the AdsML Framework.

In order to ensure interoperability, it is essential that systems exchanging IFRA adConnexion messages have the same view on which messages to send, and which to expect to receive. The message choreography (i.e. the sequence and flow of messages and responses) is straightforward where all messages come in pairs - for every request there is a response.

The sections below give a summary of the messages in each group. For more information, see also the reference section for each message element (named as the message name in CamelCase).

Response Modes

The preferred messaging model is the Request-Response model as specified in the AdsML Framework.

However, since legacy applications may have limited ability to provide appropriate responses, it is also possible to use a model where only requests are transmitted assuming an acceptance on the receiver's side. If a problem occurs when a booking message cannot be accepted, it has to be solved manually. This kind of model is called a datagram model.

As a summary:

1) Applications **SHOULD** apply the full Request-Response model (a response is required for every request)
2) If agreed by communication parties, applications **MAY** use a datagram model (no responses required)

In the rest of this document, the datagram model is not particularly discussed.

Ad Quotation Messages

An Ad Quotation Request can be issued by a buyer and **MUST** result in an Ad Quotation that either confirms or denies the request.

An Ad Quotation Request **MUST** include all data required by the space seller to calculate a price.

An Ad Quotation **MUST** reference the request and include a price.

If a quotation cannot be given, an Ad Quotation **MUST** be issued that explains the reason for not accepting the request using the TransactionDenied element.

Message Code	Message Name	Initiated by
AD-RFQ	Ad Quotation Request	Buyer's internal process
AD-Q	Ad Quotation	AD-RFQ, seller's internal process
AD-QSE	Ad Quotation Status Enquiry	Buyer's internal process
AD-QS	Ad Quotation Status	AD-QSE, seller's internal process

Ad Reservation Messages

An Ad Reservation can be issued by a buyer and **MUST** result in an Ad Reservation Response that either confirms or denies the reservation.

If a reservation is denied, the reason **MUST** be specified using the TransactionDenied element.

An Ad Reservation Response **MUST** include an expiration date.

A reservation can be changed by either the buyer or the seller using the Ad Reservation Change message. Its content and expected response is the same as for the Ad Reservation message with the addition that the Ad Reservation Change message **MUST** also include a change specification. The buyer **MUST** either accept or deny the change by responding with an Ad Reservation Response message.

All change requests **MUST** be fully specified reservations and must completely replace a previous reservation. Partial updates, of e.g. only an insertion date, are not allowed.

Both buyer and seller can cancel a reservation using the Ad Reservation Cancellation message. A cancellation must only refer the previous insertion number.

Message Code	Message Name	Initiated by
AD-R	Ad Reservation	Buyer's internal process
AD-RC	Ad Reservation Change	Buyer's or seller's internal process
AD-RX	Ad Reservation Cancellation	Buyer's or seller's internal process
AD-RR	Ad Reservation Response	AD-R, AD-RC, AD-RX
AD-RSE	Ad Reservation Status Enquiry	Buyer's internal process
AD-RS	Ad Reservation Status	AD-RSE, seller's internal process

Ad Order Messages

Ad orders follow the same rules as reservations (above), the main difference is that an ad order should be considered as a confirmed booking (however, it can of course be changed and cancelled).

Message Code	Message Name	Initiated by
AD-O	Ad Order	Buyer's internal process
AD-OC	Ad Order Change	Buyer's or seller's internal process
AD-OX	Ad Order Cancellation	Buyer's or seller's internal process
AD-OR	Ad Order Response	AD-O, AD-OC, AD-OX
AD-OSE	Ad Order Status Enquiry	Buyer's internal process
AD-OS	Ad Order Status	AD-OSE, seller's internal process

Asynchronous Messaging Model

The IFRA adConnexion standard supports an asynchronous messaging model. The main advantage is that it minimizes locking of system resources and bookings enabling systems to continue operations after a message has been sent. This is a prerequisite for handling very long-lived advertisement business processes.

Traditional legacy messaging models are often synchronous and/or built with a central controlling node (client-server or master-slave models). Even though these models can be implemented using IFRA adConnexion, it also provides the more flexible asynchronous approach to message exchange. As a consequence, IFRA adConnexion messaging can be implemented using for instance synchronous remote procedure calls, or asynchronous e-mail based services according to the requirements of the communication parties.

In particular, the IFRA adConnexion processing model has the following characteristics:

1) A system must not expect an immediate response to a request.

A response might arrive after a few seconds, minutes, days or even months. For instance, consider an ad order that require manual handling. But although responses are allowed to arrive late, it is strongly recommended that responses should be sent as soon as possible.

2) Messages are not guaranteed to arrive in the same sequence as they were transmitted.

   Due to the underlying infrastructure for message exchange, messages can take different routes, be delayed etc.

3) Both communication parties are “peers”, i.e. none is said to be in control over the other (no “master-slave” model).

   Both parties are able to send requests simultaneously although conflicts **SHOULD** be avoided.

4) A communication party is allowed to send further messages without waiting for responses for previous requests.

IFRA adConnexion includes the means to handle an asynchronous operating environment, metadata that if properly used allow communication parties to detect and manage conflicts. However, communication parties might in their mutual agreement (the TPA) define a less flexible model that, for instance, state that a new request is not allowed to be sent before a response to an earlier request has been received.

IFRA adConnexion does not define how conflict resolution should be handled in case of, for instance, both parties requesting conflicting updates. Conflict resolution will be highly application specific and **SHOULD** be defined as a part of the TPA.

Message References – Booking and Quotation Transaction Identifiers

In order to maintain the relationship between request-response message pairs, as well as between a series of change messages regarding the same “booking”, we need a set of identifiers. In general, each message has the following identifiers:

- *The buyer’s ID*. An identifier issued by the party that initiates a business transaction. The buyer’s ID is the primary identifier for a quotation or booking and **MUST** be included in any message transmitted, both responses and requests.
- *The seller’s ID*. An identifier issued by the party that receives an initial business transaction message. The seller’s ID is a complementary identifier to the buyer’s ID that **MUST** be included in any successful response to a request for quotation, reservation or order. However, the seller’s ID is **OPTIONAL** in responses in case where the business transaction cannot be fulfilled. Also, the seller’s ID **SHOULD** be included in any change and cancellation message, regardless of if the sender is a buyer or seller.
- *The message ID*. A unique identifier for the message. Each message ID **MUST** be different from any other message’s message ID.

Order and reservation response messages need to identify the message it responds to:

- *The “in response to” message ID*. The message ID for the message that the response is about. As a set of multiple updates, say, may be issued before a response is received for the first message, it **MUST** be possible to distinguish responses from one another.

Ad reservation (AD-R) and ad order (AD-O) messages are both messages that initiate a **booking** in the seller’s booking system. During the life cycle of a booking, a reservation might change and later be confirmed as an order that, in turn, can be changed. In order to maintain the relationship that a message is about a specific booking, a stable pair of identifiers **MUST** be used during the complete suite of possible transactions, i.e. the buyer’s and seller’s booking IDs. Change messages (AD-RC, AD-OC) **MUST** use the same identifiers as were used in the initiating message.

An implication of the above is that a booking system **MUST** be able to store both identifiers with the booking in its internal data storage.

Update and cancellation messages may also include:

- *The last received message ID.* All update and cancellation messages **MAY** include the message ID of the last message received about the particular booking.

This ID can be used to detect “dirty updates”, i.e. since both seller and buyer can issue updates there is a risk that both do so simultaneously. When receiving an update request, it is possible to check that the value of the last received message ID in the update request corresponds to the last message sent for the particular booking.

Quotations have a shorter life cycle with a single pair of request/response. Each new request for quotation **MUST** use a new quotation request ID. Each response (i.e. the quotation) **MUST** include the buyer’s quotation request ID. The seller’s and buyer’s identifiers **SHOULD** be stored by the booking system.

Please see section on “Globally Unique Identifiers” below for information regarding how identifiers may be expressed.

Administrative Messages – Acknowledgment and Error handling

A “negative” response to a message is not considered to be an error. For instance, a denied booking is usually due to business reasons such as an invalid insertion date, bad credit etc. Such responses are handled in the normal message flow using the **TransactionDenied** element where the reason for denial can be expressed at a business level.

However, *errors* of a technical nature might occur and should be reported, if possible. For instance, if a message cannot be decoded as a valid IFRA adConnexion message while the sender is known, an error message **MUST** be returned.

An administrative response message *acknowledging* a received message may also be issued. Note that such a message only can acknowledge that a message has been received and been checked for validity according to the IFRA adConnexion schema (i.e. is a well-formed and valid IFRA adConnexion message). Another response must be issued later that is either positive or negative in terms of the business rules for accepting or denying the request. Note also that it is not required to send this type of acknowledgement message (but see also section on “System Testing below).

An administrative error or acknowledgement may be given to a business level response. For instance, when receiving an ad order response (AD-OR), the receiver **MAY** issue an administrative acknowledgement as a message receipt. In case where the ad order response caused a validation error, an administrative error message **MUST** be issued.

Digital Signatures

Booking transactions **MAY** be digitally signed according to the W3C XML Signatures recommendations [W3C6].

This technology is ensuring:

- Long-term authenticity - who requested/confirmed the transaction?
- Data integrity - has the transaction been modified in transit?
- Non-repudiation - provision of irrefutable evidence that an action occurred. The sender cannot deny sending a message and the receiver cannot deny receiving the message.

Globally Unique Identifiers – GUIDs

Several of the identifiers are required to be globally unique. As there are various methods of how to generate such an ID, no particular method is required in this standard. However, the following method is recommended by the AdsML standard [Adsml1] and **SHOULD** be applied:

The structure of a GUID is `[domainname][/subdomain]:[date]:[local id].`

The Backus Naur Form (BNF) expression for this is:

<GUID> ::= <domainname> {"/"<subdomain>} ":" <date> ":" <local_id>

<domainname> is the w3 domain identifier, required. It **MUST** be a domain name of which the issuer of the GUID is in possession of.

<subdomain> is the w3 sub domain identifier, optional with 0 or more occurrences

<date> is an ISO 8601 date with XML Schema restrictions, required. The date **MUST** be a date when the issuer of the GUID was in possession of the domain name.

<local_id> is an identifier that **MUST** be unique within a domain name and a day, required but **MAY** be empty string.

Examples:

`adsml.org/resources:2004-01-01:A1` – alphanumeric local id

`adsml.org/resources:2004-01-01:1` – numeric local id

`adsml.org/resources:2004-01-01:` - empty local id, only one ID per day

`adsml.org:2004-01-01:9999` – no sub domain, numeric local id

`adsml.org:2004-01-01:{C65E819C-5585-11D7-ACA0-00B0D022396B}` – no sub domain, local id from the string character repertoire, using a windows GUID as the local id.

System Testing

In order to allow transmission of test messages, the **messageStatus a**ttribute on the root **adConnexion** element can be set to **TransmissionTest** or **TransactionTest**.

When receiving a **TransmissionTest** message, an administrative response **MUST** be given. A business level response **MUST NOT** be given and the message **SHOULD** be discarded and not further processed.

Messages with status **TransactionTest** test business transactions such as reservations and orders. Such transactions **MUST** get appropriate responses where the **messageStatus** attribute **MUST** be **TransactionTest**.

Note that test messages **MUST** include only test transactions, i.e. no real transactions can be included in a test message.

4. Reference

This section lists all of the building blocks (i.e. elements, element- and attribute groups) in the IFRA adConnexion vocabulary in alphabetical order. For each building block, its content model is described and all attributes are listed. For exact details about content model and data types for attributes, please see the XML Schema and its companion documents (the type library and its imported AdsML schema parts) as described in section *5 The IFRA adConnexion Schema Files* below.

Element: adConnexion

An IFRA adConnexion message can be seen as an envelope, in which one part includes instructions for message transmission (header with sender and recipient), and the other part describes the content of the message (e.g. ad order data).

adConnexion is the root element of the message where the namespace declaration **xmlns:adc** for IFRA adConnexion is made. The namespace is defined on a string reflecting IFRA's ownership and the main version number. The namespace declaration **MUST** be:

xmlns:adc="http://www.ifra.com/adconnexion/#v2"

Every IFRA adConnexion message starts with a mandatory **Header** element, followed by the message content in either a **Requests** or a **Responses** element.

Attributes

id (required)

A globally unique identifier for the whole message. Every adConnexion message **MUST** have a unique **id**. For creating a unique identifier, please "*Globally Unique Identifiers*" in Section 3 above.

sequenceNo (optional)

The sequenceNo attribute may be used to sort messages sequentially in the order of transmission. This is an additional sorting feature to the mandatory time stamp.

version (required)

The version number for the valid IFRA adConnexion message, e.g. "2.0"

messageStatus (default: Production)

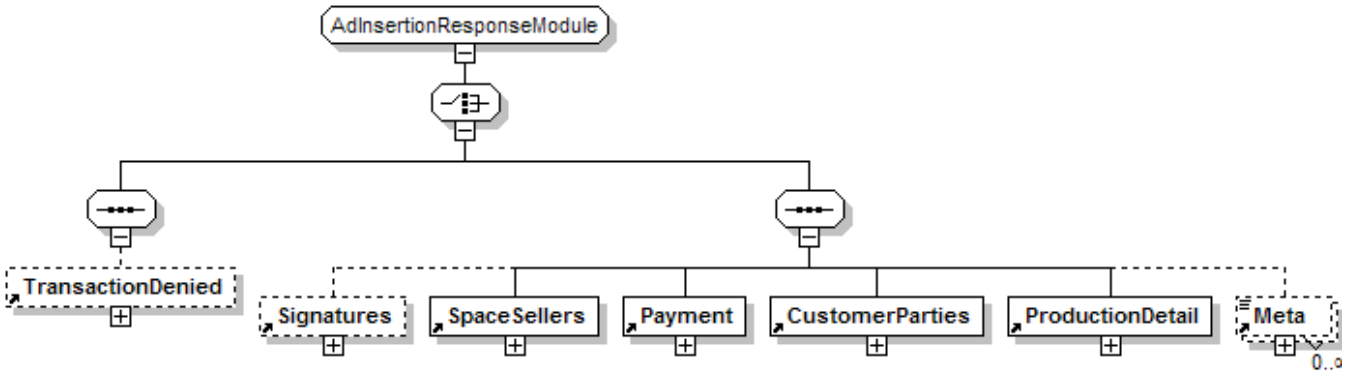
The status of the message. Can be used for specifying that the message, and/or its included transactions, is a test.

Element Group: AdContentSpecificationModule

The **AdContentSpecificationModule** is a reusable assembly of elements that carries the information for specification of physical aspects of the ad such as colours and size as well as placement and artwork.

See **ProductionDetail** for further information.

Element Group: AdInsertionResponseModule

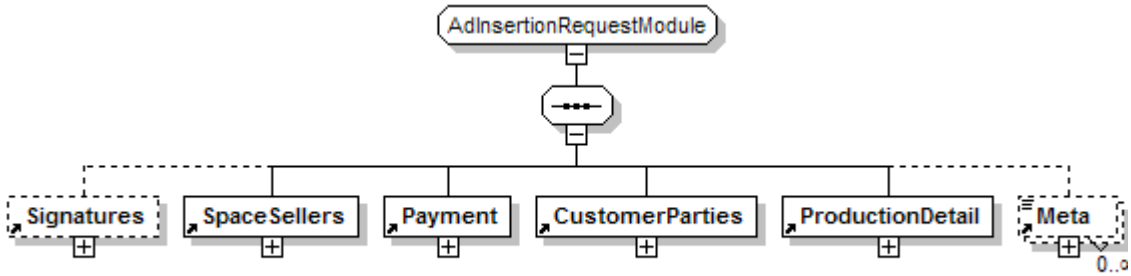


The **AdInsertionResponseModule** is a reusable assembly of elements that carries the information needed for responses to quotation, reservation and order messages.

The elements **SpaceSellers**, **Payment**, **CustomerParties** and **ProductionDetail** are mandatory for responses to successful requests in this module. The optional **Meta** sub-element can be used to add any non-standard information to the message. A **name** attribute in the **Meta** tag should be used to describe this information.

When a requested transaction cannot be fulfilled, a **TransactionDenied** element **MUST** only be used to specify the reason for denying the request.

Element Group: AdInsertionRequestModule



The **AdInsertionRequestModule** is a reusable assembly of elements that carries the information needed for request messages for quotations, reservations and orders. The elements **SpaceSellers**, **Payment**, **CustomerParties** and **ProductionDetail** are mandatory in this module.

The optional **Meta** sub-element can be used to add any non-standard information to the message. A **name** attribute in the **Meta** tag should be used to describe this information.

Element: AdMediator

Additional customer parties involved in the ad ordering processes between the buyer of ads and the seller are expressed in the element **AdMediator**. Details about the ad mediator are provided by the **Organization** sub element.

For an overview, see **CustomerParties**

Attributes

proofRequired (optional)

Specifies whether the customer needs a proof.

sampleRequired (optional)

Specifies whether the customer needs a sample of the ad (proof of publication).

internalReference (optional)

An internal reference that the advertiser may use.

type (optional)

Identifies the type of **AdMediator** such as ad agency or repro house.

Element: AdOrder

The **AdOrder** element is the top level element for the corresponding business message. It is defined in the reusable module **AdInsertionRequestModule**.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer. The seller **MUST** use this ID as a reference in the response.

bookingResponseID (optional)

A globally unique identifier for the booking issued by the seller.

quotationID (optional)

A globally unique identifier for a quotation issued by the seller that reference a previous quotation that this reservation is based on.

quotationRequestID (optional)

A globally unique identifier for a quotation request issued by the buyer that reference a previous quotation request that this reservation is based on.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdOrderCancellation

The **AdOrderCancellation** element is the top level element for the corresponding business message. It may include message specific data in the **MessageProperties** element that includes one or more **ReasonForDenial** elements specifying the reason for cancellation.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (optional)

A globally unique identifier for the booking issued by the seller. It is optional when a bookingResponseID has not been received. In all other cases, it **SHOULD** be included.

lastReceivedMessageID (optional)

A reference to the message ID of the message last received regarding the particular booking. It should be used to detection of conflicting updates.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdOrderChange

The **AdOrderChange** element is the top-level element for the corresponding business message. It is defined on the reusable module **AdInsertionRequestModule**. In addition, it also includes message specific data in the **MessageProperties** element that must include one or more **ChangeSpecification** elements specifying the change request.

See also **ChangeSpecification** for more information.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (optional)

A globally unique identifier for the booking issued by the seller. It is optional when a bookingResponseID has not been received. In all other cases, it **SHOULD** be included.

lastReceivedMessageID (optional)

A reference to the message ID of the message last received regarding the particular booking. It should be used to detection of conflicting updates.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdOrderResponse

The **AdOrderResponse** element is the top-level element for the corresponding business message. It is defined on the reusable module **AdInsertionResponseModule**. It is used for providing responses to several ad order message types.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (required)

A globally unique identifier for the booking issued by the seller.

inResponseToMessageID (required)

A reference to the message ID that the response is about.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdOrderStatus

The **AdOrderStatus** element is the top-level element for the corresponding business message. It is defined on the reusable module **AdInsertionResponseModule**. It is used for providing responses to status enquiries, but can also be sent regardless of prior enquiries as an information message.

The **AdOrderStatus** can for instance be used for order reconciliation (pre-invoicing).

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (required)

A globally unique identifier for the booking issued by the seller.

inResponseToMessageID (optional)

A reference to the message ID that the message is about in case it was triggered by a status enquiry.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: Element: AdOrderStatusEnquiry

The **AdOrderStatusEnquiry** element is the top-level element for the corresponding business message. The element has no child element and the only content is the attributes that reference the booking for which the status report is requested.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (optional)

A globally unique identifier for the booking issued by the seller. It is optional when a bookingResponseID has not been received. In all other cases, it **SHOULD** be included.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdQuotation

The **AdQuotation** element is the top-level element for the corresponding business message. It is defined on the reusable module **AdInsertionResponseModule**.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

quotationID (required)

A globally unique identifier for the quotation issued by the seller.

quotationRequestID (optional)

A globally unique identifier for the quotation request that triggered the quotation. The seller **SHOULD** use this ID as a reference in a quotation.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdQuotationRequest

The **AdQuotationRequest** element is the top-level element for the corresponding business message. It is defined on the reusable module **AdInsertionRequestModule**.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

quotationRequestID (required)

A globally unique identifier for the quotation request issued by the buyer.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdQuotationStatus

The **AdQuotationStatus** element is the top-level element for the corresponding business message. It is defined on the reusable module **AdInsertionResponseModule**. It is used for providing responses to status enquiries, but can also be sent regardless of prior enquiries as an information message.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

quotationID (required)

A globally unique identifier for the quotation issued by the buyer.

quotationRequestID (required)

A globally unique identifier for the quotation issued by the seller.

inResponseToMessageID (optional)

A reference to the message ID that the message is about in case it was triggered by a status enquiry.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: Element: AdQuotationStatusEnquiry

The **AdQuotationStatusEnquiry** element is the top-level element for the corresponding business message. The element has no child element and the only content is the attributes that reference the quotation for which the status report is requested.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

quotationRequestID (required)

A globally unique identifier for the quotation issued by the buyer.

quotationID (optional)

A globally unique identifier for the quotation issued by the seller. It is optional when a quotationID has not been received. In all other cases, it **SHOULD** be included.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdReservation

The **AdReservation** element is the top-level element for the corresponding business message. It is defined on the reusable module **AdInsertionRequestModule**.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer. The seller **MUST** use this ID as a reference in the response.

quotationID (optional)

A globally unique identifier for a quotation issued by the seller that reference a previous quotation that this reservation is based on.

quotationRequestID (optional)

A globally unique identifier for a quotation request issued by the buyer that reference a previous quotation request that this reservation is based on.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdReservationCancellation

The **AdReservationCancellation** element is the top-level element for the corresponding business message. It may include message specific data in the **MessageProperties** element that includes one or more **ReasonForDenial** elements specifying the reason for cancellation.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (optional)

A globally unique identifier for the booking issued by the seller. It is optional when a bookingResponseID has not been received. In all other cases, it **SHOULD** be included.

lastReceivedMessageID (optional)

A reference to the message ID of the message last received regarding the particular booking. It should be used to detection of conflicting updates.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdReservationChange

The **AdReservationChange** element is the top-level element for the corresponding business message. It is defined in the reusable module **AdInsertionRequestModule**. In addition, it also includes message specific data in the **MessageProperties** element that must include one or more **ChangeSpecification** elements specifying the change request.

See also **ChangeSpecification** for more information.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (optional)

A globally unique identifier for the booking issued by the seller. It is optional when a bookingResponseID has not been received. In all other cases, it **SHOULD** be included.

lastReceivedMessageID (optional)

A reference to the message ID of the message last received regarding the particular booking. It should be used to detection of conflicting updates.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdReservationResponse

The **AdReservationResponse** element is the top level element for the corresponding business message. It is defined in the reusable module **AdInsertionResponseModule**.

In addition, it also includes message specific data in the **MessageProperties** element that must include an **ExpirationDate** element specifying the deadline for changing the reservation to a confirmed order.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (required)

A globally unique identifier for the booking issued by the seller.

inResponseToMessageID (required)

A reference to the message ID that the response is about.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: AdReservationStatus

The **AdReservationStatus** element is the top-level element for the corresponding business message. It is defined on the reusable module **AdInsertionResponseModule**. It is used for providing responses to status enquiries, but can also be sent regardless of prior enquiries as an information message.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (required)

A globally unique identifier for the booking issued by the seller.

inResponseToMessageID (optional)

A reference to the message ID that the message is about in case it was triggered by a status enquiry.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: Element: AdReservationStatusEnquiry

The **AdReservationStatusEnquiry** element is the top-level element for the corresponding business message. The element has no child element and the only content is the attributes that reference the booking for which the status report is requested.

See section on "*Message References…*" above for further information about the use of identifiers.

Attributes

messageCode (required; fixed)

The message code as defined by the AdsML standard.

bookingID (required)

A globally unique identifier for the booking issued by the buyer.

bookingResponseID (optional)

A globally unique identifier for the booking issued by the seller. It is optional when a bookingResponseID has not been received. In all other cases, it **SHOULD** be included.

***attribute group*: commonMessageAttributes**

See **commonMessageAttributes** definition.

Element: Advertiser

The **Advertiser** element identifies an advertiser as one of the customer parties involved in the advertisement. Details about the advertiser are provided by the **Organization** sub element.

For an overview, see **CustomerParties**.

Attributes

proofRequired (optional)

Specifies whether the customer needs a proof.

sampleRequired (optional)

Specifies whether the customer needs a sample of the ad (proof of publication).

internalReference (optional)

An internal reference that the advertiser may use.

Element: Artwork

The **Artwork** element is used for specifying a reference to the original artwork using one or more sub elements **Rendition**. Each Rendition is an alternative physical representation of the ad, e.g. an EPS and a PDF version.

Attributes

No attributes.

Element: ArtworkData

The **ArtworkData** element can include any text or XML content provided that the overall well formed structure of the message is not violated. In case of XML content, a name space other than adConnexion's **MUST** be defined.

The attributes are optional (in case of XML content), but **SHOULD** be present when the content of the **ArtworkData** element consists of a text encoded image etc.

See **Rendition** for more information.

Attributes

encoding (optional)

Defines the encoding of the artwork, normally Base64.

length (optional)

Defines the size of the artwork in bytes.

Element: ChangeSpecification

The **ChangeSpecification** element is used to specify a reason for and consequence of a change requested by the space seller. The change can be described as free text in the element content.

Attributes

importance (default: 3)

Identifies the importance of the change, as suggested by the space seller, on a scale from 1 (low) to 5 (high). All changes that require action from the buyer **SHOULD** have an importance of 4 or higher.

Element: Colours

The **Colours** element defines the colour usage for the advertisement. The element is a mandatory sub element of **ProductionDetail**.

Free text description of the colour information can be given as content of the **Colour** element.

In cases where the value of **colourType** is not 0 or 3 (black & white or 4-colour), colours for 1-colour and 2-colour ads **MUST** be defined. For these purposes, attributes **colourCode1** and **colourCode2** should be used. These attributes should have values according to the respective code list specified in **colourCodeList** attribute. It is possible to define other colour code lists e.g. for national, international or mutually defined practices.

See also **ProductionDetail**.

Attributes

colourType (required)

Specifies the colour type as black and white (0), 1-colour (1), 2-colour (2), 4-colour (3) and spot colour (s).

colourCode1 (optional)

Colour 1 for one and two colour ads according to the colourCodeList.

colourCode2 (optional)

Colour 2 for two colour ads according to the colourCodeList.

colourCodeList (optional)

An identifier for the code list used for specification of colourCode1 and colourCode2 attributes. Recommended values for colourCode1 and colourCode2 are C, M, and Y.

Attribute Group: commonMessageAttributes

The **commonMessageAttributes** group specifies a set of attributes that appear in all business messages such as **AdOrder** or **AdQuotationRequest**.

Attributes

messageID (required)

A globally unique message identifier. Each message **MUST** have a unique ID.

adHeading (optional)

Text header providing a short headline for the ad insertion transaction.

mediaType (optional)

Type of advertisement's media. Following types are specified: print, web

linkingID (optional)

Reference number of a page consisting of multiple ads connected together ("space share" ads).

messageClass (required)

The message class to which the message belongs. All business level messages **MUST** have the class 'BusinessTransaction' while administrative messages have either 'MessageReceivedAcknowledgment' or 'TechnicalError'.

Element: Company

The **Company** element is a sub element of **Contact**. The element and its attributes define the company including possible machine-readable code for identification of the company. **Company** has three sub elements for defining a company's contact addresses and phone numbers, **NetAddress**, **Phone** and **MailAddress.** Finally, the **Meta** element can be used for additional application specific data.

Attributes

name (optional)

Name of the company.

companyCode (optional)

Company code according to existing code lists defined in the **codeList** attribute.

codeList (optional)

An agreed name for the code list, whose values are used in the **companyCode** attribute.

Element: Contact

The **Contact** element contains contact information about an organization and its staff. It includes one or more instances of the **ContactPerson** and **Company** elements.

Contact is used as a sub element of **Organization**, which appears in different contexts in the adConnexion structure. Depending on the case, different rules for appearances of **Contact**'s sub elements can be defined. The common model is open and does not limit the occurrences of elements,

but the usage context may determine how it is used. For example, its use within the **Payer** element may require that a complete mail address structure is used.

Attributes

No attributes

Element: ContactPerson

The **ContactPerson** element is a sub element of **Contact**. It is used to specify the name and role of an organization's contact person(s). **ContactPerson** has three sub elements for defining contact addresses and phone numbers, **NetAddress**, **Phone** and **MailAddress.** Finally, the **Meta** element can be used for additional application specific data.

Attributes

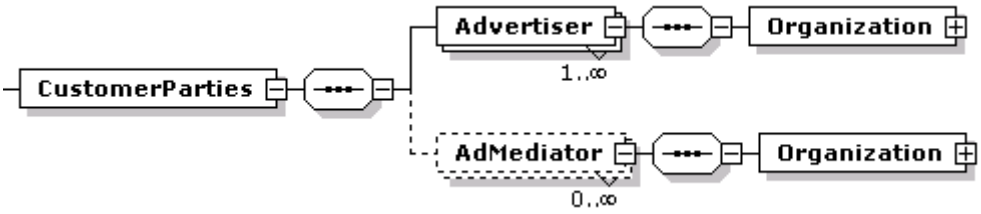
name (optional)

A contact person's name.

role (optional)

A contact person's role. Possible role values are defined in the AdsMLContactRoleType.

Element: CustomerParties



The **CustomerParties** element groups the customer parties involved in the ordering process including artwork production etc. **CustomerParties** must contain at least one party that is the **Advertiser**. Other parties (e.g. ad agency, media agency, space selling company) are defined in the **AdMediator** element which is optional and appears zero or more times in the message.

Attributes

No attributes

Element: Discount

The **Discount** element provides details about discounts given for total, part and service prices.

Each **TotalPrice, ServicePrice** or **PartPrice** can contain a **Discount** sub element.

See also **Payment** for further details.

Attributes

calculationSequence (optional)

Defines the calculation sequence (running number from 1 to N) in case of more than one **Discount** sibling.

qualifier (optional; default)

Specifies if the price adjustment is for allowance (discount, default) or charge (additional cost).

discountCode (optional)

Code for the type of discount according to the specified code list.

discountCodeList (optional)

Code list identifier for the used discount codes. If a discountCode is used, the discountCodeList **MUST** be used.

unit (required)

Mandatory unit for discount, percentage share or absolute {percentage | absolute}

repetition (optional)

Discount for repeated ad.

repetitionBlack (optional)

Discount for repeated, black & white ad

repetitionColour (optional)

Discount for repeated, colour ad

customDesign (optional)

Discount on services performed by the space seller

customDesignBlack (optional)

Discount on services performed by the space seller (black & white ad)

customDesignColour (optional)

Discount on services performed by the space seller (colour)

contractual (optional)

Discount based on specific contract

contractualBlack (optional)

Discount based on specific contract (black & white ad)

contractualColour (optional)

Discount based on specific contract (colour ad)

complaint (optional)

Discount due to complaint.

complaintBlack (optional)

Discount due to complaint (black & white ad).

complaintColour (optional)

Discount due to complaint (colour ad).

Element: Edition

The **Edition** element identifies the edition of the publication. See **Publication** for further details.

Attributes

No attributes.

Element: Error

The **Error** element is a child to **MessageAcknowledgement** and specifies the details of the error. It can include a formal identifier, e.g. an error code, using attributes as well as free text description as element content.

Attributes

errorCode (optional)

An identifier code for an error according to a code system identified in **errorCodeList**.

errorCodeList (optional)

An identifier for a specific code system that is used in **errorCode**. If **errorCode** is used **errorCodeList MUST** be used,

Element: ExpirationDate

The **ExpirationDate** element **MUST** be used to provide a deadline before which a reservation has to be confirmed (as an **AdOrder**).

ExpirationDate is part of the message specific properties for an **AdReservationResponse**.

Attributes

No attributes.

Element: Format

The **Format** element is used for instructions about the physical size of the ad. Format (e. g. 7x80) is given using the sub elements **Width** and **Height**.

See also **Size** for further information.

Attributes

No attributes.

Element: Header

The **Header** element defines the sender and recipient for the message.

Header consists of two mandatory elements **MessageTo** (message recipient) and **MessageFrom** (message sender). Both these elements include mandatory appearances of the **Organization** element, which specifies the organization's identifiers and address or contact information.

Note that the use of **Organization** element within **Header** element does not extend the requirements set for **Organization** element's mandatory parts elsewhere in the message.

Attributes

sendingTime (required)

Local sending time according to sending system.

Format: yyyymmdd hhmmss+hhmm e. g. 20010912 183230+0200. Please note the single space separating the day from the hour.

sendingSystemsSignature (required)

Expresses a signature for the system that generates the IFRA adConnexion message.

Element: Height

The **Height** element defines the height of the advertisement. The value is expressed as a decimal value for the element. The unit of measure is defined by an attribute.

See also **Size** for further information.

Attributes

unitOfMeasure (required)

The unit for the value given as element content.

Element: InsertionDate

The **InsertionDate** element specifies the publication dates or the start and end date intervals within which each ad should be published.

In case the ad's format varies between insertion dates, alternative format, size, placement and artwork **MAY** be provided through the corresponding sub elements. Note that if **InsertionDate** includes production detail data, the publication detail specified **MUST** completely replace the publication detail given elsewhere. For instance, if **Size** and **Colour** is provided as default as sub elements to **ProductionDetail** and only **Size** appear for a specific **InsertionDate**, the information in **Size** will replace the default while **Colour** would be undefined.

See **Scheduling** and **InsertionDateList** for further information.

Attributes

id (required)

An attribute of type #ID, which requires that the value of the id attribute **MUST** be unique within the ad order message.

sequenceNo (required)

Indicates the sequence in question. Value must be from 1 (one) to **InsertionDateList/@totalNoOfRepetitions**.

startInterval (required)

Indicates the first date when the ad may be published

For dates, the recommended format is CCYYMMDD e.g. 20010129.

endInterval (required)

Indicates the last date when the ad may be published

For dates, the recommended format is CCYYMMDD e.g. 20010129.

Element: InsertionDateList

The **InsertionDateList** element expresses how many times the ad is repeated in total. Each insertion is represented by an **InsertionDate** sub element.

See also **Scheduling** for further information.

Attributes

totalNoOfRepetitions (required)

Expresses the total number of times the ad is to be published. It **MUST** be equal to the number of InsertionDate sub elements.

Element: MailAddress

The **MailAddress** element is used under the **Company** and **ContactPerson** elements for specifying the mailing addresses.

Attributes

role (optional)

The role of this address in relation to possibly other addresses, e.g. delivery address. Possible role values are defined in the AdsMLContactInfoClassType.

COAddress (optional)

Care-off address (first address line)

streetMBox (optional)

Street address or PO Box (second address line)

zipCode (optional)

Postal code

city (optional)

City

countryCode (optional)

Country code according to ISO 3166-1 alpha-2, capital letters.

Element: MessageAcknowledgement

The **MessageAcknowledgement** element is used for providing administrative responses to physical adConnexion XML messages, as opposed to responses to business messages (ad orders etc). It can be used for the acknowledgement of successfully received XML messages as well as for reporting technical errors in a message.

In case of a message error, the **MessageAcknowledgement** element should list at least one **Error** element that explains the reason for the failure.

Attributes

messageClass (required)

The messageClass defines the message class. Values should be taken from **AdsMLMessageClassAdminSubsetType** type that is a subset of message classes defined in AdsML.

messageCode (required)

The common message code (or *type*) for the business messages in the failing XML message. If that class cannot be found, the error message class **MUST** be used.

adConnexionIDReference (required)

A reference to a failing XML message's **id SHOULD** be included here, if possible.

Element: MessageFrom

See **Header**.

Attributes

No attributes.

Element: MessageProperties

The **MessageProperties** element is used in certain business messages for providing further message specific information. For instance, **MessageProperties** for an **AdReservationResponse** message includes an **ExpirationDate**. Please see the descriptions of the business messages for further details.

Attributes

No attributes.

Element: MessageTo

See **Header**.

Attributes

No attributes.

Element: Meta

The **Meta** element is a general element that can be used to add application specific properties. Such extensions of the IFRA adConnexion message format should be agreed between trading partners. **Meta** can include any text or XML content provided the overall well formed structure of the message is not violated. In case of XML content, a name space other than IFRA adConnexion's **MUST** be defined.

The use of **Meta** is controlled by its parent elements; please see their description for further information.

Attributes

name (required)

The Meta element **MUST** always be named so that it can be distinguished and recognised. The naming mechanism **SHOULD** provide a globally unique name by, e.g. including the internet domain address. Example: ad.org-MyProperty

Element: Module

The **Module** element is used for instructions about the physical size of the ad according to a module system.

See also **Size** for further information about other methods for defining sizes.

Attributes

moduleCode (required)

A code value for the module according to code list specified in **moduleCodeList**. Mandatory.

moduleCodeList (required)

Code list, which defines the value codes used with the attribute **moduleCode**. Mandatory.

Element: NetAddress

The **NetAddress** element includes attributes to specify a party's Internet address.

Attributes

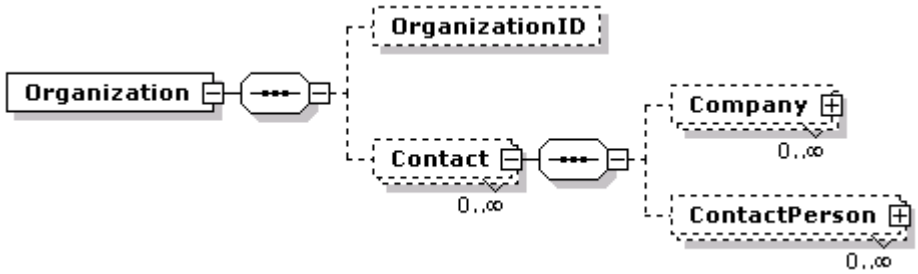
eMail (optional)

email address.

URL (optional)

URL (Universal Resource Locator) address.

Element: Organization



The **Organization** element defines a company or an organization by using its sub elements **OrganizationID** and **Contact**. The sub elements are not mandatory in the common model, but they may be in certain contexts. See e.g. the **Payer** element expressing the invoice recipient, where **OrganizationID** and at least one **Contact** must appear.

Organization is used as a sub element for many elements in the IFRA adConnexion definition. See the respective element descriptions for further information about how the use of **Organization** element varies from case to case.

Attributes

No attributes.

Element: OrganizationID

The OrganizationID element defines the information structure required for identification of a company or organization.

See also **Organization**.

Attributes

organizationID (required)

A unique identification number for the organization according to the id system specified in the organizationIDCodeList attribute. This attribute **MUST** be used also for non-official id systems, such as mutually defined company codes.

organizationIDCodeList (required)

An agreed identifier for the id system used for identification of the organization, such as e.g. “DUNS” (Dun and Bradstreet).

countryCode (optional)

Machine readable country code for the country where the organization is registered. The code **MUST** be provided according to the ISO 3166-1 alpha-2, capital letters.

officeCode (optional)

Identifies an office within an organization.

VATNo (optional)

Taxation number for the organization.

Element: PartPrice

For each parent **Payer** element, one or more **PartPrice** sub elements **MAY** appear. The **PartPrice** element can be used for specifying prices for a single ad insertion, on a defined insertion date (see **Scheduling**).

If the **PartPrice** element is used, the sum of its parts together with **ServicePrice** **MUST** be equal to values given in the **TotalPrice** element. Also, the number of appearances **MUST** be equal to the number of ad insertions (i.e. one **PartPrice** for each insertion date).

Discounts can be specified using a set of **Discount** elements.

See also **Payment**.

Attributes

insertionDate (required)

A reference to a specific **InsertionDate** element within the **ProductionDetail/Scheduling** element.

subtotalGrossPrice (required)

Total gross price for the ad insertion, before discounts.

subtotalNetPrice (required)

Total net price for the ad insertion after discounts.

grossPriceType (default: agreed)

Type of gross price, agreed or catalog price.

unitPrice (optional)

Price per unit.

black (optional)

Price for black and white ad.

colourSupplement (optional)

Price for colour supplement

customDesign (optional)

Price for services performed by the space seller

Element: Payer

The **Payer** element defines the payer(s) of the ad. The element appears as a part of the payment conditions defined within the **Payment** element.

For each **Payer** element, the sub elements **TotalPrice, ServicePrice** and **PartPrice** can appear.

See also **Payment** for an overview.

The Payer is identified using a mandatory occurrence of the **Organization** element. Use of the **Organization** element here requires that attributes **OrganizationID** is fully specified. Furthermore, it is recommended that the complete invoicing address **SHOULD** be described in the **Company** element.

The payment can be shared between members in a group of payers. For this purpose there are optional attributes **shareColour** and **shareSpace** that specify the share of the total cost that should be paid by each payer. In cases where there is only one payer for the advertisement, percentage values

of **shareColour** and **shareSpace** **MUST** be set to 100. When several payers are present, the total sum of the percentage shares **MUST** be 100.

Attributes

shareColour (optional)

Percentage of the price based on colour.

shareSpace (optional)

Percentage of the price based on ad space.

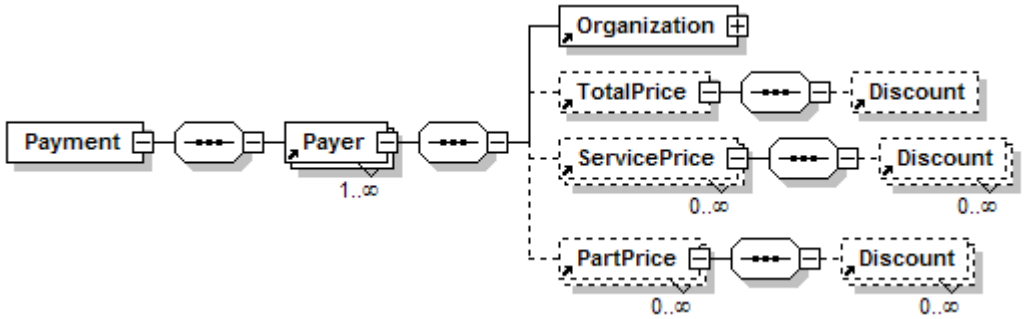
payerReferenceNo (optional)

The payer's internal reference number.

contractReference (optional)

A reference to a contract that the price is calculated from.

Element: Payment



The **Payment** element is a group element for all data required for specifying payment conditions for the advertisement. **Payment** includes one or more **Payer** element. Each **Payer** is identified by an **Organization** element.

Prices are primarily specified using the **TotalPrice** element. In addition, it is also possible to further specify the price into a set of **PartPrice** elements (one per insertion) and **ServicePrice** for additional services not related directly to a specific insertion date. For each price type, discounts can be specified using the **Discount** element.

Attributes

currency (required)

Defines the currency for each price information in the message. The values for currency codes **MUST** be defined according to ISO 4217, alphabetic codes such as SEK, GBP etc.

Element: Phone

The **Phone** element is used as a sub element for **Company** and **ContactPerson** for specifying telephone or fax numbers.

Attributes

type (optional)

Type of phone number, possible values are *voice* or *fax.*

countryCode (optional)

The country's national prefix dial code.

areaCode (optional)

The area code.

subscriberNo (optional)

Subscriber number.

Element: Placement

The **Placement** element describes placing instructions for the ad and it is a mandatory part of the **ProductionDetail** element. Detailed placement requirements can be described using the sub elements **Publication** and **Requirements**.

The optional **Meta** element can be used for additional structured data.

Attributes

placementCode (optional)

Defines a placement code according to an approved code system.

placementCodeList (optional)

A code list identifier for the placement code.

natureOfPlacement (default: request)

Expresses whether the placement in question is a request or definite.

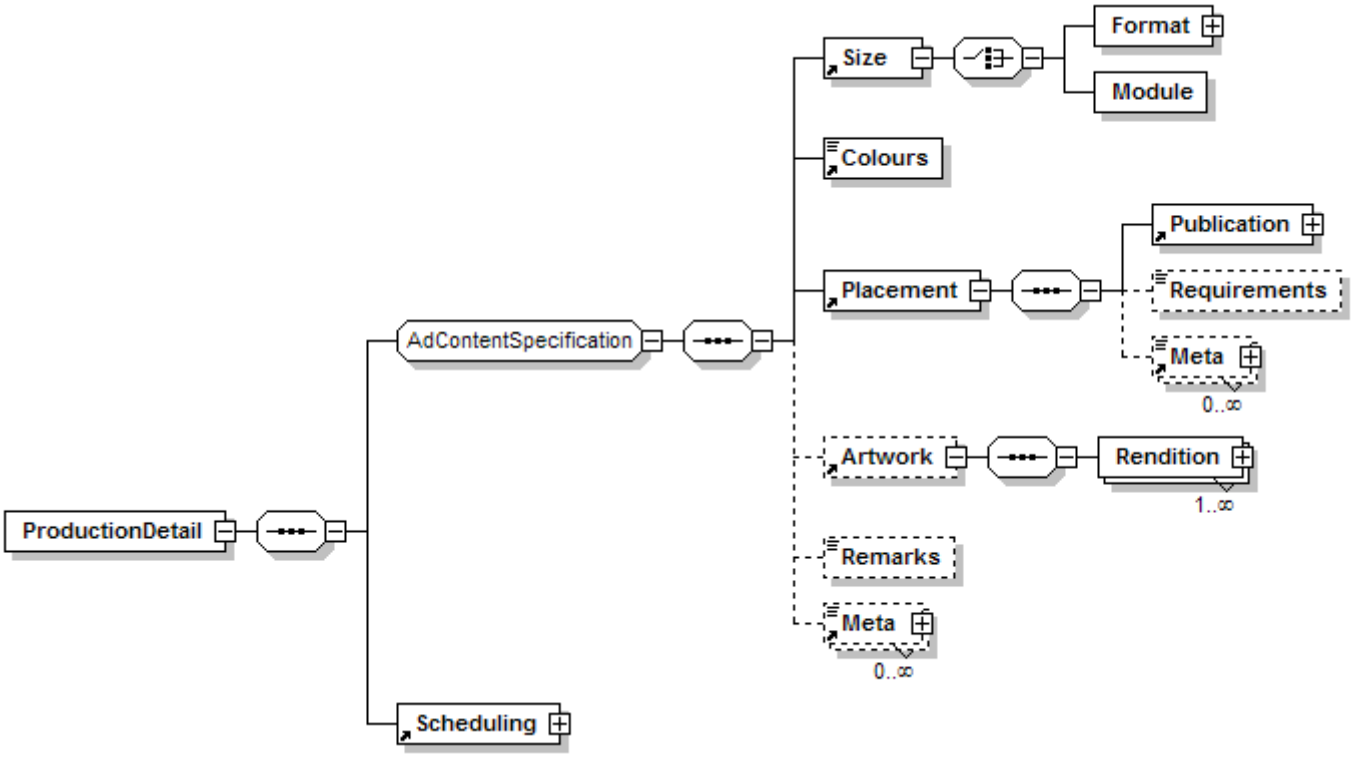
Element: Product

The **Product** element identifies a product of the publication e. g. a supplement to a newspaper.

Attributes

No attributes.

Element: ProductionDetail



ProductionDetail is a group element for production information related to the publication of the ad. The element includes four mandatory sub elements: **Size**, **Colours**, **Placement** and **Scheduling**. Furthermore, it is possible to include references to the original artwork (**Artwork**, optional), for specifying and completing the artwork information (**Remarks,** optional).

Attributes

No attributes.

Element: Publication

Publication is a sub element of **Placement** that is used to specify a publication by name or an agreed code. In addition, **Publication** can include sub elements **Edition** and **Product** enabling identification of specific parts of a publication where the ad is to be placed.

See also **Placement**.

Attributes

publicationName (required)

The name of the publication that is destination of the ad.

publicationCode (optional)

An identifier code for a publication for a specific publication according to a code system identified in **publicationCodeList**.

publicationCodeList (optional)

An identifier for a specific code system that is used in **publicationCode**. If **publicationCode** is used, **publicationCodeList MUST** be used.

Element: ReasonForDenial

The **ReasonForDenial** element specifies a reason to why a transaction or a message was denied. It can include a formal identifier, e.g. an error code, using attributes as well as free text description as element content.

Attributes

denialCode (optional)

An identifier code for a denial reason according to a code system identified in **denialCodeList**.

denialCodeList (optional)

An identifier for a specific code system that is used in **denialCode**. If **denialCode** is used **denialCodeList MUST** be used,

Element: Remarks

An element for free text that may be used for specifying and completing the artwork information. The **Remarks** element is used within the **ProductionDetail** and **InsertionDate** elements.

Attributes

No attributes.

Element: Rendition

The **Rendition** element specifies the respective artwork content files. See also **Artwork**.

Rendition has one optional sub-element **ArtworkData**. This element can be used for integrating the artwork into the XML file. The content of the **ArtworkData** element can be an XML stream containing e.g. classified ads with meta data and pictures.

Attributes

name (required)

Name of the rendition.

type (default: digital)

Type of artwork. The type may be digital or analog. For more detailed information, use the attribute **mimeType** described below.

referenceID (optional)

Reference number e.g. order number for artwork.

description (optional)

Free text about the artwork.

mimeType (optional)

MIME type code for digital artwork

transmissionMethod (optional)

Describes whether the artwork will be retrieved (Push) or delivered (Pull).

transmissionChannel (optional)

Describes the channel for artwork transmission such as e-mail, http etc.

address (optional)

Address (e. g. URL) where the original artwork can be retrieved or delivered using the specified method and channel.

Element: Requests

The **Requests** element is reserved for specifying business messages that are requests, such as **AdQuotationRequest** or **AdReservation**.

Requests' optional **Meta** sub-element can be used to add any non-standard information to the message.

Attributes

No attributes.

Element: Requirements

The **Placement** element contains free text to specify the placement of the ad in detail. Note that free text data cannot be processed automatically and it is proposed to use the **Meta** element for structured data instead, if possible.

Attributes

No attributes.

Element: Responses

The **Responses** element is used for providing responses in general to requests. Normally, a response will include response message top element such as **AdOrderResponse** or **AdQuotation**, and/or **Meta** elements representing a successful business transaction.

However, not all messages can be successfully handled. At the business level, it may be due to missing data in the request, or that the buyer's credit has passed its limit or any other business reason for the receiver not to acknowledge the requested transaction. In such cases, the business messages **MUST** include a **TransactionDenied** element that details the reason for denial.

We can also expect technical errors such as invalid XML or corrupt files. If possible, a technical error message should be given as a response using the **MessageAcknowledgement** element to report the error.

The **MessageAcknowledgement** element can also be used for sending notification of successfully retrieved messages. However, this is an optional feature.

Se also section "Business Message Types and Choreography" above.

Attributes

No attributes.

Element: Scheduling

The **Scheduling** element expresses the scheduling instructions for publishing of the ad. These instructions contain e.g. publishing dates or date ranges and total number of times the ad is to be published. The element is a mandatory part of the **ProductionDetail** element.

Scheduling has one mandatory sub element **InsertionDateList** that expresses how many times the ad is repeated in total. The actual insertion dates are provided in the **InsertionDate** element, which

can exist one or more times and that defines the publication dates or date ranges for each ad insertion.

The format, artwork etc of an ad can vary between insertion dates. By default, the global publication detail is used, but alternative publication details can be provided as a substructure for each **InsertionDate** element.

Attributes

No attributes.

Element: ServicePrice

For each parent **Payer** element, one or more **ServicePrice** sub elements can appear. The **ServicePrice** element can be used for specifying prices for services that are connected to the whole booking in contrast to **PartPrice/@customDesign** that are services connected to separate insertions dates

When the **ServicePrice** element is used, the sum of all **ServicePrice** elements' attribute **subTotalGrossPrice MUST** be equal to the **commonServices** attribute in **TotalPrice**.

Discounts can be specified using an optional set of **Discount** elements.

See also **Payment**.

Attributes

subtotalGrossPrice (required)

Gross price for the service, before discounts.

subtotalNetPrice (required)

Net price for the service after discounts.

description (optional)

A free text description of the service charged.

serviceCode (optional)

A code according to the code list defined in the **serviceCodeList** attribute that identifies the service.

serviceCodeList (optional)

An identifier for the code list from which the code value in the **serviceCode** attribute is taken. If **serviceCode** is used, **serviceCodeList MUST** be used.

Element: Signatures

The **Signatures** element is used for inclusion of digital signatures according to the W3C XML Signatures recommendations [W3C6].

Attributes

No attributes.

Element: Size

The **Size** element is used for instructions about the physical size of the ad, i.e. the size or space occupied by the published ad. The element is a mandatory sub element of **ProductionDetail**.

Size must be given by using one of two possible systems, module or format, defined by **Module** and **Format** elements.

Attributes

No attributes.

Element: SpaceSellers

The **SpaceSellers** element is used under element **AdInsertion** to identify an organization (e.g. a newspaper) or a group of organizations that sell the requested ad space.

Attributes

No attributes.

Element: TotalPrice

The **TotalPrice** element defines the summary price of the ad for a specific **Payer**. If price components are specified using the **PartPrice** and **ServicePrice** sibling elements, **TotalPrice MUST** include the sum of the components.

The sum of all discounts given ca be specified using a single (optional) **Discount** element.

Attributes

totalGrossPrice (required)

Total gross price before discounts.

grossPriceType (default: agreed)

Type of gross price, agreed or catalog price.

totalNetPrice (required)

Total net price after discounts.

unitPrice (optional)

Price per unit.

black (optional)

Price for black and white ad.

colourSupplement (optional)

Price for colour supplement.

customDesign (optional)

Price for services performed by the space seller as per insertion date.

commonServices (optional)

Price for common services performed by the space seller and that are not related to any specific insertion date.

Element: TransactionDenied

The **TransactionDenied** element is used for specifying non-successful transactions and is used in responses. In the same way as the business message elements do for successful transactions, **TransactionDenied** identifies the message type and provides a reference id to the original request.

TransactionDenied should list at least one **ReasonForDenial** element that explains the reason to the failure.

Attributes

No attributes.

Element: Width

The **Width** element defines the width of the advertisement. The value is expressed as a decimal value for the element. The unit of measure is defined by an attribute.

See also **Size** for further information.

Attributes

unitOfMeasure (required)

The unit for the value given as element content.

5. The IFRA adConnexion Schema Files

IFRA adConnexion 2.0 is defined using the XML Schema standard from W3C [W3C2, W3C3]. It provides increased support for structural validation as well as datatype control compared to the older DTD technology used in earlier versions of IFRA adConnexion.

The IFRA adConnexion schema is defined in two separate schema files:

- *IFRAadConnexion-2.0.xsd*: The main schema defining content models for all elements.
- *IFRAadConnexionTypeLibrary-2.0.xsd*: A supportive schema defining datatypes used in the main schema. This file is included in the main schema and should be placed in the same directory.

Some of the datatypes in IFRA adConnexion are based on datatypes from the AdsML Framework [AdsML2]. In order to use these datatypes, the AdsML type library and controlled vocabulary definition files are imported into the IFRA adConnexion type library. The files are:

- *AdsMLTypeLibrary-1.0.xsd*
- *AdsMLControlledVocabularies-1.0.xsd*

The AdsML files are included with the IFRA adConnexion schema distribution and must be placed in the same directory as IFRA adConnexion's schema files.

Appendix A: Acknowledgements

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- Jay Cousins (RivCom Ltd, United Kingdom)
- The IFRA adConnexion Working Group

Appendix B: References

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