<table>
<thead>
<tr>
<th>Adobe</th>
<th>CloudLab</th>
<th>Heidelberg</th>
<th>HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kodak</td>
<td>Müller Martini</td>
<td>RICOH</td>
<td>Xerox</td>
</tr>
</tbody>
</table>
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1 Introduction

PrintTalk is an XML standard that is maintained by CIP4 and provides a single format for Print Providers to collaboratively communicate Business Transactions and specifications of Print Product both with their Print Buyers and among themselves. Print industry professionals from a wide range of organizations contributed to the design of PrintTalk. Such organizations include eCommerce companies, print business management systems, print providers, and print equipment manufacturers.

The PrintTalk standard embraces [XJDF 2.0] and [cXML 1.2]. These bracketed references are defined in Appendix C References. Whereas XJDF describes the printed product to be produced, PrintTalk specifies the business data and context between Print Provider and Print Buyer.

This specification details the requirements of the XML data in Chapter 2 Structure, Chapter 3 Business Objects and Chapter 4 Subelements. The requirements for the transport protocol and security are defined in Chapter 5 Building a System.

1.1 Intended Audience

While print industry professionals may find parts of this specification to be useful, our primary goal is to describe the PrintTalk protocol to programmers who wish to implement the PrintTalk interface specification within their software products. A working knowledge of XML and familiarity with XJDF is required to fully understand this document.

1.2 Use of XML

PrintTalk is encoded as XML and SHALL be a valid XML document according to [XML]. The namespace prefix for items that are defined in the PrintTalk namespace should be one of ‘ptk’ or no prefix, i.e. the default namespace.

Note: Most data in PrintTalk is encoded in XML attributes; XML elements provide the hierarchical structure of the data.

Note: The data model does not require use of XML. Conceptually, any hierarchical data syntax could be used. XML was chosen to align with the XJDF specification and because it is in widespread use. In addition, leaving the choice of an underlying grammar open would lead to non interoperable implementations.

1.2.1 Use of XML Schema

The XML schema for PrintTalk is designed to ensure that PrintTalk documents are syntactically valid, thus PrintTalk documents that are successfully validated against the PrintTalk schema SHALL be considered conformant to the syntax requirements described in this specification.

A PrintTalk implementation SHALL support standard namespace handling as defined in [XMLNS], and SHOULD conform to the recommended use of prefix identifiers as specified in [XJDF 2.0].

The namespace SHALL be declared in the PrintTalk element using the standard @xmlns attribute. For version 2.0 of PrintTalk the value SHALL be “http://www.printtalk.org/schema_20”.

All elements that are defined in this specification are defined in the XML schema for this namespace, including those derived directly from [cXML 1.2], but excluding those defined in [XJDF 2.0].

1.3 Data Structures

Unless stated otherwise, this specification uses XML data types as used by XJDF and defined by [XMLSchema]. For more details on data types, units of measurement etc, see the ‘Data Structures’ section in [XJDF 2.0].

1.3.1 Currency

In addition to the data types defined by XJDF, PrintTalk requires the means to convey the currency of a transaction and therefore defines its own data type for this purpose. In the definition tables in this specification, attributes that use this have a value of ‘Currency’ in the DataType column.

Attributes of type ‘Currency’ SHALL contain a valid uppercase alphabetic currency code as defined in [ISO4217].

Note: [ISO4217] permits the use of numeric currency codes, however these are intended for use in systems that do not use Latin scripts.

1.4 Conventions Used in this Specification

This specification uses the same conventions and formatting as [XJDF 2.0]. See the appropriate section in the introduction in [XJDF 2.0] for details.
### 1.5 Glossary

This section defines terminology used throughout this document. References to other documents are indicated with square brackets, e.g. [XJDF 2.0]. For most terms, see the terminology section in [XJDF 2.0].

<table>
<thead>
<tr>
<th>TERM</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Transaction</strong></td>
<td>When a Print Buyer sends a PrintTalk document to a Print Provider, or a Print Provider sends a PrintTalk document to a Print Buyer, the Business Object within the PrintTalk document describes a business transaction between the Print Buyer and Print Provider.</td>
</tr>
<tr>
<td><strong>Catalog Item</strong></td>
<td>A preprinted or non–printed item that can be ordered.</td>
</tr>
<tr>
<td><strong>Change Order</strong></td>
<td>A Business Transaction that requests changes to a Confirmed Job.</td>
</tr>
<tr>
<td><strong>Confirmed Job</strong></td>
<td>A job (producing a Print Product) that a Print Buyer and Print Provider have agreed to after negotiating a contract for it. The Print Provider consummates the agreement by confirming the Print Buyer’s purchase order.</td>
</tr>
<tr>
<td><strong>Invalid</strong></td>
<td>When used in the context of a Business Object, it refers to a Business Object that is no longer Pending and is thus no longer accessible.</td>
</tr>
<tr>
<td><strong>Item</strong></td>
<td>Something that is explicitly priced. This can be a physical product, a service or anything that has a price.</td>
</tr>
<tr>
<td><strong>Negotiation Phase</strong></td>
<td>The phase during which a Print Buyer and Print Provider negotiate a contract for a Print Product by exchanging Business Objects. The Production Phase follows the Negotiation Phase.</td>
</tr>
<tr>
<td><strong>Pending</strong></td>
<td>When used in the context of a Business Object, it refers to a Pending Business Object.</td>
</tr>
</tbody>
</table>
| **Pending Business Object** | A Business Object that other Business Objects can reference via @BusinessRefID and @ReplaceID. A Business Object X is pending from the time a Print Buyer or Print Provider creates it until:  
  - It expires.  
  - Its creator sends a Cancellation whose @BusinessRefID references X.  
  - Its creator sends a Business Object whose @ReplaceID references X. |
| **Print Buyer** | The customer that is buying a Print Product. |
| **Print Product** | The printed matter produced according to a contract negotiated between the Print Buyer and Print Provider using the PrintTalk negotiation process. |
| **Print Provider** | The producer of the Print Product. |
| **PrintTalk Document** | An XML document whose root element has a type of “PrintTalk” and which follows the rules of this document, the PrintTalk 2.0 specification. |
| **Production Phase** | The phase during which a Print Provider produces and ships a Print Product. |
| **Requote** | An additional Quotation for a variation in a job, for which the Print Provider has already issued a Quotation. |
| **Supersede** | If Business Object X Supersedes Business Object Y, Business Object X becomes a Pending Business Object and Business Object Y becomes a Superseded Business Object. |
| **Superseded Business Object** | When a Print Buyer or Print Provider sends a Business Object X with a @ReplaceID that references some other Business Object Y of the same type, Business Object Y becomes a Superseded Business Object and Business Object X become a Pending Business Object. A Superseded Business Object is Invalid and not Pending. |
| **Superseding Business Object** | A Business Object that Supersedes some other Business Object. |
2 Structure

A PrintTalk document applies concepts that are defined in cXML 1.2 to the graphic arts. All PrintTalk elements SHALL be declared in the PrintTalk namespace. See Table 2.1 PrintTalk Element for details. Like cXML, the top two elements of a PrintTalk document SHALL be a Header element and a Request element. The header concept comes directly from cXML, and identifies the parties involved in this correspondence. In some cases the definitions of Header and its subelements have been clarified for usage in business transactions that are unique to the graphic arts such as web to print. The Request element SHALL contain exactly one PrintTalk Business Object.

Within this document, whenever elements or attributes are specified with an “xjdf” namespace prefix, this prefix specifies the presence of that element from the XJDF namespace, i.e. http://www.CIP4.org/JDFSchema_2_0.

2.1 PrintTalk

The root element in a PrintTalk document SHALL be an element whose name is PrintTalk. An example is:

```xml
<PrintTalk xmlns="http://www.printtalk.org/schema_20"
  Timestamp="2018-12-10T15:51:23+01:00" payloadID="P_000164">
</PrintTalk>
```

### Table 2.1: PrintTalk Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSVersions</td>
<td>? NMTOKENS</td>
<td>@ICSVersions SHALL list all CIP4 Interoperability Conformance Specification (ICS) Versions that this PrintTalk complies with. The value of @ICSVersions SHALL conform to the value format described in Section 2.1.1 ICS Versions Value.</td>
</tr>
<tr>
<td>payloadID</td>
<td>? NMTOKEN</td>
<td>@payloadID is a unique identifier with respect to space and time, used for logging purposes to identify documents. This value SHOULD NOT change for retry attempts. See [cXML 1.2].</td>
</tr>
<tr>
<td>Timestamp</td>
<td>dateTime</td>
<td>The date and time the message was sent. @Timestamp SHALL NOT change for retry attempts.</td>
</tr>
<tr>
<td>Header</td>
<td>element</td>
<td>The header defined in [cXML 1.2] and as further specified in this document.</td>
</tr>
<tr>
<td>Request</td>
<td>element</td>
<td>The request defined in [cXML 1.2] and as further specified in this document.</td>
</tr>
</tbody>
</table>

2.1.1 ICS Versions Value

To assist with interoperability conformance the PrintTalk can refer to one or more CIP4 Interoperability Conformance Specification documents. Each document is referenced by using an NMTOKEN that complies with the following:

**Value format: <ICSName>_L<ICSLevel>-<ICSVersion>**.

**Example:** "Cus-EP_L1-2.0" for the Automated Print Procurement ICS.

2.2 Header

Header is defined in cXML. Refer to the cXML users guide [cXML 1.2].

The From, To and Sender elements allow systems to identify and authorize parties. The explicit or implied value of Sender/Credential[@domain="URL"] also provides the receiver with the URL where it should send any asynchronous requests to the originator.

The From and To elements in a document SHALL NOT change when a PrintTalk document is forwarded by an intermediate system. The Sender element SHALL be provided by any system other than the original creator of the document that is specified in From. For example, in an RFQ, the “From” party is the Print Buyer. The “To” party is the Print Provider. In the subsequent Quotation, those roles are reversed.
Example 2.1: Example of a Header

The following is an example of a Header taken from a PurchaseOrder. In this example, the To party is a Print Provider company called “PeterPan”. The DUNS number uniquely identifies them. The From party is a Print Buyer. It too, is uniquely identified by a DUNS number. The From is the party sending this PrintTalk document. There is no intermediate actor, therefore the Sender element is not allowed.

```xml
<Header>
  <From>
    <Credential domain="URL">
      <Identity>https://customer.com</Identity>
    </Credential>
    <Credential domain="DUNS">
      <Identity>123456789</Identity>
    </Credential>
    <Credential domain="DescriptiveName">
      <Identity>Polkadot Printers</Identity>
    </Credential>
  </From>
  <To>
    <Credential domain="URL">
      <Identity>https://printer.com</Identity>
    </Credential>
    <Credential domain="DescriptiveName">
      <Identity>PeterPan</Identity>
    </Credential>
    <Credential domain="DUNS">
      <Identity>93009388</Identity>
    </Credential>
  </To>
</Header>
```

2.2.1 From

From SHALL identify the original sender of the PrintTalk transaction.
Referenced by:  

Table 2.3: From Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credential +</td>
<td>element</td>
<td>A Credential identifies and authenticates the various parties involved in a transaction.</td>
</tr>
<tr>
<td>UserAgent ?</td>
<td>element</td>
<td>See [cXML 1.2].</td>
</tr>
</tbody>
</table>

2.2.2 To

To SHALL identify the final recipient of the PrintTalk transaction

Referenced by:  

Table 2.4: To Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credential +</td>
<td>element</td>
<td>A Credential identifies and authenticates the various parties involved in a transaction.</td>
</tr>
</tbody>
</table>

2.2.3 Sender

Sender SHALL identify the current sender of the PrintTalk transaction.

Referenced by:  

Table 2.5: Sender Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credential +</td>
<td>element</td>
<td>A Credential identifies and authenticates the various parties involved in a transaction.</td>
</tr>
<tr>
<td>UserAgent ?</td>
<td>element</td>
<td>See [cXML 1.2].</td>
</tr>
</tbody>
</table>

2.2.4 Credential

A Credential identifies and authenticates the various parties involved in a transaction.
2.2.4.1 Identity

The **Identity** element is used to provide the value of the parent **Credential**.

### Table 2.7: Identity Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| text |           | The text body SHALL contain the value of the parent **Credential**. The body of **Credential** SHOULD be specified as a text string with no leading or trailing whitespace and with no control characters such as LF, CR, etc. **Note:** **Identity** is defined as an element with body text for compatibility with cXML.

2.3 Request

**Request** is originally defined in cXML. Refer to the cXML users guide [cXML 1.2]. It has been enhanced in **PrintTalk** to be the container for generic data that is related to a business object, but independent of the specific type of business object.
2.4 PrintTalk Extensibility

The PrintTalk specification aims to support plug-and-play as much as possible. Nonetheless, PrintTalk is meant to be flexible and therefore, as each vendor may have private data to include in the PrintTalk files, it allows for this data to be added using a foreign namespace. However, foreign namespace extensions SHOULD NOT duplicate functionality of attributes and elements defined by PrintTalk.

This section describes how PrintTalk MAY be extended. PrintTalk extensibility SHALL be implemented using XML namespaces; see \[XMLNS\].

### 2.4.1 Foreign Namespaces

For PrintTalk foreign namespaces are defined to be any namespace except for those reserved for PrintTalk and XJDF. The namespace for PrintTalk is defined in PrintTalk[@xmlns]. See \[XJDF 2.0\] for the XJDF definition. The namespace prefixes reserved for PrintTalk and XJDF SHOULD NOT be used for foreign namespaces.

Attributes in a foreign namespace MAY be added to any PrintTalk element. Elements in a foreign namespace SHALL NOT be specified in any PrintTalk element other than the Request element. The children of the Request element SHALL be ordered so that all elements in a foreign namespace follow all of the elements in the PrintTalk namespace. The valid locations of foreign namespace elements in XJDF are also valid in XJDF descendants of PrintTalk.
3 Business Objects

3.1 ArtDeliveryRequest
An ArtDeliveryRequest allows the Print Buyer to upload artwork such as PDF content to the Print Provider. Request/@BusinessRefID of the ArtDeliveryRequest Business Object references the order’s PurchaseOrder. The order’s PurchaseOrder is either the initial PurchaseOrder if no Change Orders have occurred, or the latest accepted PurchaseOrder if a Change Order has been made.

References: PurchaseOrder
Flow: Print Buyer to Print Provider

Table 3.1: ArtDeliveryRequest Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>UpdateMethod</td>
<td>enumeration</td>
<td>@UpdateMethod SHALL define the usage of the artwork.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allowed values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Add – Add the artwork to the product.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replace – Replace existing artwork in the same scope with the delivered art-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>work.</td>
</tr>
<tr>
<td>xjdf:XJDF</td>
<td>element</td>
<td>An XJDF that includes an xjdf:ResourceSet[@Name=&quot;RunList&quot;] that references</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the artwork.</td>
</tr>
</tbody>
</table>

3.2 ArtDeliveryResponse
An ArtDeliveryResponse allows the Print Provider to provide the Print Buyer with information about previously uploaded art deliveries. Request/@BusinessRefID of the ArtDeliveryResponse Business Object SHALL reference the Business Object that provided the artwork. This SHALL be either a PurchaseOrder or an ArtDeliveryRequest.

References: ArtDeliveryRequest, PurchaseOrder
Flow: Print Provider to Print Buyer

Table 3.2: ArtDeliveryResponse Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>enumeration</td>
<td>Result of the art delivery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allowed values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accepted – The artwork was accepted and all artwork for the job is now in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>place. Warnings may have occurred.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AcceptedWaiting – The artwork was accepted. There is still missing artwork.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warnings may have occurred.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rejected – The artwork was rejected. Additional details SHOULD be provided</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in xjdf:PreflightReport.</td>
</tr>
<tr>
<td>xjdf:PreflightReport?</td>
<td>element</td>
<td>xjdf:PreflightReport should provide details of the result of the upload.</td>
</tr>
</tbody>
</table>

3.3 Cancellation
A Print Buyer or a Print Provider sends a Cancellation to cancel a previously sent Business Object.
For a Print Provider to cancel for a Quotation, it SHALL send a Cancellation whose @BusinessRefID references the Quotation.
For a Print Buyer to cancel for an RFQ or PurchaseOrder, it SHALL send to Print Provider a Cancellation whose @BusinessRefID references the RFQ or PurchaseOrder.

References: PurchaseOrder, Quotation, RFQ
Flow: Print Buyer to Print Provider, Print Provider to Print Buyer
3.4 Confirmation
If a Print Provider accepts a PurchaseOrder or Cancellation, it SHOULD send a Confirmation whose @BusinessRefID references the accepted PurchaseOrder or Cancellation.

References:  
Cancellation, PurchaseOrder

Flow:  
Print Provider to Print Buyer

3.5 Invoice
The Print Provider typically sends an Invoice to the Print Buyer after the job is shipped. It may also send an Invoice several times, when certain milestones during the Production Phase are reached or after a job is cancelled. An Invoice MAY include additional charges or discounts.

To request payment, the Print Provider SHALL send an Invoice whose @BusinessRefID references the PurchaseOrder for a completed job or for milestones during the Production Phase.

References:  
PurchaseOrder

Flow:  
Print Provider to Print Buyer

3.6 OrderStatusRequest
An OrderStatusRequest allows the Print Buyer to query the Print Provider for details of the order status.

If a Print Buyer wants the status of an order, it shall send to the Print Provider an OrderStatusRequest whose Request/@BusinessRefID references the order’s PurchaseOrder. The order’s PurchaseOrder is defined as either the initial PurchaseOrder if no Change Orders have occurred or the latest accepted PurchaseOrder if a Change Order has been made.

References:  
PurchaseOrder

Flow:  
Print Buyer to Print Provider

3.7 OrderStatusResponse
An OrderStatusResponse is a direct or triggered response to an OrderStatusRequest/StatusRequest or PurchaseOrder/StatusRequest.
If a Print Provider receives an OrderStatusRequest, it SHALL immediately send to the Print Buyer one OrderStatusResponse with the latest reached milestone for each OrderStatusRequest/StatusRequest[@Subscribed="false"].

A Print Provider SHOULD send to a Print Buyer an automatically generated OrderStatusResponse for each StatusRequest[@Subscribed="true"] whenever a condition, such as the availability of a tracking identifier or the reaching of a new milestone, matches the subscription defined by StatusRequest.

The amounts specified in the scope of xjdf:AuditResource SHALL be the total amounts at the time of sending including any amounts sent in previous OrderStatusResponse business objects that refer to the same entity.

References: OrderStatusRequest, PurchaseOrder
Flow: Print Provider to Print Buyer

Table 3.7: OrderStatusResponse Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JobIDRef</td>
<td>NMTOKEN</td>
<td>JobIDRef SHALL identify the job that this OrderStatusResponse applies to.</td>
</tr>
<tr>
<td>xjdf:AuditPool</td>
<td>element</td>
<td>xjdf:AuditPool SHALL contain at least one xjdf:AuditNotification or xjdf:AuditResource that contains information that was requested in a StatusRequest element. xjdf:AuditNotification/xjdf:Notification elements SHOULD contain an xjdf:Milestone child element that describes the current status of the job. See ▶ [XJDF 2.0].</td>
</tr>
</tbody>
</table>

3.8 ProofApprovalRequest

If a Print Provider wants a Print Buyer to approve a soft or hard copy order, the Print Provider SHALL send to the Print Buyer a ProofApprovalRequest whose @BusinessRefID references the order’s PurchaseOrder.

Note: xjdf:ContentCheckIntent allows the Print Buyer to define the desired proofing and preflighting workflow for a specific print job.

Note: Multiple ProofApprovalRequest need to be sent if multiple proofs need to be approved.

References: PurchaseOrder
Flow: Print Provider to Print Buyer

Table 3.8: ProofApprovalRequest Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JobIDRef</td>
<td>NMTOKEN</td>
<td>Reference to the @JobID this proof corresponds to.</td>
</tr>
<tr>
<td>xjdf:ProofItem</td>
<td>element</td>
<td>Details of the item to be proofed. See ▶ [XJDF 2.0].</td>
</tr>
</tbody>
</table>

3.9 ProofApprovalResponse

A ProofApprovalResponse is the response to a ProofApprovalRequest.

If a Print Buyer receives a ProofApprovalRequest, it SHALL send to the Print Provider a Proof ApprovalResponse whose @BusinessRefID SHALL reference the ProofApprovalRequest and contains the Print Buyer’s approval or rejection of a proof.

References: ProofApprovalRequest
Flow: Print Buyer to Print Provider

Table 3.9: ProofApprovalResponse Element (Sheet 1 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JobIDRef</td>
<td>NMTOKEN</td>
<td>Reference to the @JobID this proof corresponds to.</td>
</tr>
<tr>
<td>xjdf:ApprovalDetails</td>
<td>element</td>
<td>Describes the overall result of the approval. See ▶ [XJDF 2.0].</td>
</tr>
</tbody>
</table>
3.10 PurchaseOrder

The Print Buyer accepts a Quote of the Quotation for purchase of a Print Product by creating and sending a PurchaseOrder that references the Quote. However, a PurchaseOrder can also be the first Business Object in a Negotiation Phase, especially for a reorder of a previously produced Print Product.

References: N/A (PurchaseOrder can be the initiating transaction), Quotation

Flow: Print Buyer to Print Provider

Table 3.10: PurchaseOrder Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expires ?</td>
<td>dateTime</td>
<td>Date/time when this PurchaseOrder becomes Invalid.</td>
</tr>
<tr>
<td>QuoteID ?</td>
<td>NMTOKEN</td>
<td>This PurchaseOrder selects the quote specified by Request[@BusinessID = &quot;Q&quot;]/Quotation/Quote[@QuoteID = &quot;q&quot;], where &quot;Q&quot; = Request/@BusinessRefID and &quot;q&quot; = @QuoteID of this PurchaseOrder.</td>
</tr>
<tr>
<td>ReorderID ?</td>
<td>NMTOKENS</td>
<td>Whitespace separated unique @BusinessID values that refer to PurchaseOrder PrintTalk documents that are the basis for this (collected) re-order, if the re-order is the starting point.</td>
</tr>
<tr>
<td>ReplaceID ?</td>
<td>NMTOKEN</td>
<td>@ReplaceID contains the Request/@BusinessID of the original PurchaseOrder that this PurchaseOrder is intended to Supersede.</td>
</tr>
<tr>
<td>Pricing ?</td>
<td>element</td>
<td>Pricing SHALL specify the binding price of the purchase order. Note: This price will typically originate from a web to print or similar e-commerce system.</td>
</tr>
<tr>
<td>StatusRequest *</td>
<td>element</td>
<td>Each StatusRequest defines a query for automated status updates which relate to production orders that are specified in xjdf:XJDF of this PurchaseOrder. The value of StatusRequest/@Subscribed SHALL be set to &quot;true&quot;. If present, the value of StatusRequest/@JobIDRef SHALL be the same as the value of one of the xjdf:XJDF/@JobID values in this PurchaseOrder.</td>
</tr>
<tr>
<td>xjdf:Comment ?</td>
<td>element</td>
<td>Human readable comments about this purchase order.</td>
</tr>
<tr>
<td>xjdf:XJDF +</td>
<td>element</td>
<td>Description of one or more Print Products or Catalog Items. The XJDF elements MAY be used to specify very detailed Print Products, or they MAY also be used to describe the procurement of finished goods in catalog based environments. Note: Multiple xjdf:XJDF in a PurchaseOrder are an explicit request to purchase multiple items, e.g. when describing a shopping cart in a web to print application. See [XJDF 2.0].</td>
</tr>
</tbody>
</table>

3.11 Quotation

Usually a Print Provider creates a Quotation after receiving an RFQ.

If the Print Provider chooses to accept an RFQ, the Print Provider creates one or more Quote elements and sends them back to the Print Buyer in a Quotation element. Each Quote element represents one quote for the job.

A Print Provider sends a Quotation whose semantics vary depending on @BusinessRefID.

If a Print Provider receives an RFQ and chooses to provide a quote, it SHALL send a Quotation whose @BusinessRefID references the received RFQ.

PurchaseOrder: If a Print Provider chooses to initiate a Change Order for a Confirmed job, it SHALL send a Quotation whose @BusinessRefID references the PurchaseOrder for the Confirmed job. The Print Buyer selects a possible or necessary change to the Print Product.

A Quotation SHALL contain at least one Quote element. If the Print Provider offers multiple options, it SHALL specify a separate Quote element for each such option.
After the Print Provider has sent a Quotation and while it is pending, the Print Provider MAY send either
- a Superseding Quotation that replaces the Pending one.
- a Cancellation for the Pending Quotation after which the Print Provider MAY choose to send either a new Quotation or a Confirmation for some pending PurchaseOrder. A Pending PurchaseOrder exists only if the cancelled Quotation was in fact a Requote.

When a Print Buyer receives a Quotation, the Print Buyer MAY
- accept the Quotation by sending a PurchaseOrder that references the Quote that the Print Buyer wishes to accept from the list of Quote elements in the Quotation.
- decline the Quotation by either sending a Refusal or letting it expire. The Print Buyer MAY choose to create a new RFQ that requests a Requote.
- defer a decision on the Quotation and send a new RFQ that requests a Requote.

References: Confirmation, PurchaseOrder, RFQ
Flow: Print Provider to Print Buyer

Table 3.11: Quotation Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>boolean</td>
<td>For each Quote element inside this Quotation, the price SHALL be a binding amount if @Estimate = “false”, otherwise, the Print Buyer SHALL treat the price as an estimate only.</td>
</tr>
<tr>
<td>Expires</td>
<td>dateTime</td>
<td>Date/time when this Quotation becomes Invalid.</td>
</tr>
<tr>
<td>ReplaceID</td>
<td>NM TOKEN</td>
<td>@ReplaceID equals the Request/@BusinessID of the Quotation that this Quotation is intended to supersede.</td>
</tr>
<tr>
<td>Quote +</td>
<td>element</td>
<td>Each Quote element SHALL describe a complete distinct variation of all Print Products quoted. A Quote SHALL NOT be a quote for an individual part or Item of the Order.</td>
</tr>
<tr>
<td>xjdf:Comment</td>
<td>element</td>
<td>Human readable comments about this quotation.</td>
</tr>
</tbody>
</table>

3.11.1 Quote

A Quote element describes a quote for a particular variation of a product or products.

Referenced by: Quotation

Table 3.12: Quote Element (Sheet 1 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviations ?</td>
<td>NM TOKENS</td>
<td>If this Quote differs from the original request, @Deviations SHOULD specify the general areas where the quote differs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> @Deviations specifies what deviates, whereas @DeviationCause specifies the reason for the deviation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Values include:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Assembling - The composite product is produced with a different assembly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Binding - The product is produced with a different binding.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Color - The product is produced with a different set of colorants.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ContentCheck - The product is produced with a different proofing or pre-flighting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DeliveryDate - The delivery date differs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Embossing - The product is produced with a different embossing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Folding - The product is produced with a different folding, creasing or perforating.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- HoleMaking - The product is produced with different holes in the media.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Laminating - The product is produced with different laminating.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Layout - The product is produced with different layout.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Media - The product is produced with a different substrate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Production - The product is produced with different production techniques.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ShapeCutting - The product is produced with different shape cutting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Technology - The product is produced with a different print technology.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Variable - The product is produced with different variable content settings.</td>
</tr>
</tbody>
</table>
3.12 Refusal

A Print Buyer or a Print Provider sends a Refusal to decline receipt of a Business Object.

If a Print Buyer chooses to decline a Quotation sent by a Print Provider, or if a Print Provider chooses to decline either an RFQ or a PurchaseOrder sent by a Print Buyer, it SHALL either send a Refusal whose @BusinessRefID references the declined Business Object or let the Business Object expire.

References: Cancellation, PurchaseOrder, Quotation, RFQ

Flow: Print Buyer to Print Provider, Print Provider to Print Buyer

Table 3.13: Refusal Element (Sheet 1 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason</td>
<td>enumeration</td>
<td>Machine readable general reason for declining the request.</td>
</tr>
</tbody>
</table>

Allowed values are:

- **Busy** - No production resources are available to produce the request within the required deadline.
- **InvalidPrice** - The offered price is too low.
- **Other** - Any other reason.
- **WrongProduct** - The printer is not capable of producing the requested type of product.
3.12.1 Refusal codes
The following table defines a list of suggested values for `Refusal/@ReasonDetails`.

<table>
<thead>
<tr>
<th>REASON</th>
<th>REASON DETAILS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Busy</td>
<td>Deadline</td>
<td>The requested delivery date cannot be met.</td>
</tr>
<tr>
<td>Busy</td>
<td>OverCapacity</td>
<td>The requested amount is too high.</td>
</tr>
<tr>
<td>Busy</td>
<td>UnderCapacity</td>
<td>The requested amount is too low.</td>
</tr>
<tr>
<td>InvalidPrice</td>
<td>NonStandard</td>
<td>The requested products do not fit the contract for the assumed price.</td>
</tr>
<tr>
<td>InvalidPrice</td>
<td>WrongPricing</td>
<td>The contractual price lists have been updated and the price is no longer valid.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Assembling</td>
<td>The requirements specified in AssemblingIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Binding</td>
<td>The requirements specified in BindingIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Color</td>
<td>The requirements specified in ColorIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>ContentCheck</td>
<td>The requirements specified in ContentCheckIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Embossing</td>
<td>The requirements specified in EmbossingIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Folding</td>
<td>The requirements specified in FoldingIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>HoleMaking</td>
<td>The requirements specified in HoleMakingIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Laminating</td>
<td>The requirements specified in LaminatingIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Layout</td>
<td>The requirements specified in LayoutIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Media</td>
<td>The requirements specified in MediaIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Production</td>
<td>The requirements specified in ProductionIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>ShapeCutting</td>
<td>The requirements specified in ShapeCuttingIntent cannot be achieved.</td>
</tr>
<tr>
<td>WrongProduct</td>
<td>Variable</td>
<td>The requirements specified in VariableIntent cannot be achieved.</td>
</tr>
</tbody>
</table>

3.13 RFQ
A Print Buyer sends an **RFQ** to a Print Provider to request a quote. Usually the Negotiation Phase starts with an **RFQ**. Sometimes, the Negotiation Phase starts with a Quotation or PurchaseOrder.

An **RFQ** SHALL convey the unambiguous intentions of the Print Buyer to the Print Provider. A complex **RFQ** MAY contain options that specify several types of acceptable materials or methods required by the Print Buyer. An **RFQ** MAY contain other options that require the Print Provider’s estimator to generate more than one quoted price in the response.

A Print Buyer sends an **RFQ** whose semantics vary depending on [@BusinessRefID].

- **Not specified**: If a Print Buyer chooses to initiate a new product process by making a request–for–quote to a Print Provider, it SHALL send an **RFQ** with no [@BusinessRefID].
- **Quotation**: If a Print Buyer receives a Quotation for a job and wants a Requote for a variation of the job, it SHALL send an **RFQ** whose [@BusinessRefID] references the received Quotation.
- **Confirmation**: If a Print Buyer wants to initiate a Change Order for a Confirmed Job and the PurchaseOrder form of a Change Order cannot be used because there are changes that don’t have quotes, the Print Buyer SHALL send an **RFQ**.
whose @BusinessRefID references the PurchaseOrder of the Confirmed Job. A Change Order RFQ asks what the consequences would be for a certain change of the Print Product. See PurchaseOrder for an alternate Change Order that a Print Buyer can send.

After the Print Buyer has sent an RFQ and while it is Pending, the Print Buyer MAY send one of the following:

- a Superseding RFQ that replaces the Pending one.
- an unrelated RFQ.
- a Cancellation for the Pending RFQ after which the Print Buyer MAY choose to continue the negotiation process by sending either a new RFQ or a new PurchaseOrder for a Pending Quotation. A Pending Quotation exists only if the cancelled RFQ was in fact a Request for Requote.

When a Print Provider receives an RFQ, the Print Provider SHALL either

- accept the RFQ by sending a Quotation to the Print Buyer.
- decline the RFQ by either sending a Refusal to the Print Buyer or letting the RFQ expire.

References: N/A (RFQ can be the initiating transaction), Confirmation, PurchaseOrder, Quotation

Flow: Print Buyer to Print Provider

### Table 3.15: RFQ Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AmountPrices</td>
<td>IntegerList</td>
<td>@AmountPrices SHALL specify a list of base quantities, for each of which the resulting Quotation SHOULD provide (in Quote/Pricing) a Price element with the cost in @Price and quantity in @Amount. If @AmountPrices is specified then the Quote/Pricing/Price elements SHOULD also contain Additional elements. If @AmountPrices is not specified the requested amounts SHALL be extracted from xjdf:XJDF/ProductList/Product/@Amount.</td>
</tr>
<tr>
<td>Currency</td>
<td>Currency</td>
<td>The value of @Currency SHALL be copied to all returned Quotation/Quote/Pricing/@Currency attributes. Note: See Section 1.3.1 Currency for definition of valid currency values, and refer to [ISO4217].</td>
</tr>
<tr>
<td>Estimate</td>
<td>boolean</td>
<td>If &quot;false&quot;, the Print Provider SHALL provide prices in the responding Quotation that will be binding and not altered in any subsequent Invoice that is raised as a result of this Quotation. If not &quot;false&quot;, the Print Provider SHOULD provide prices in the responding Quotation that are estimates; consequently the prices in any subsequent Invoice may vary from those in the Quotation. However, the Print Provider MAY provide prices that are binding. In all cases the Print Provider SHALL clearly indicate whether the responding Quotation is a binding amount or an estimate in Quotation/@Estimate.</td>
</tr>
<tr>
<td>Expires</td>
<td>dateTime</td>
<td>Date/time when this RFQ becomes Invalid.</td>
</tr>
<tr>
<td>ReorderID</td>
<td>NMTOKENS</td>
<td>Whitespace separated @BusinessID values that refer to PurchaseOrder Print-Talk documents that are the basis for this (collected) RFQ. The RFQ is intended to lead to a re-order.</td>
</tr>
<tr>
<td>ReplaceID</td>
<td>NMTOKEN</td>
<td>@ReplaceID contains the Request/@BusinessID of the original RFQ Business Object that this RFQ is intended to Supercede.</td>
</tr>
<tr>
<td>xjdf:Comment</td>
<td>element</td>
<td>Human readable comments about this request for quote.</td>
</tr>
<tr>
<td>xjdf:XJDF</td>
<td>element</td>
<td>Description of one or more Print Products or Catalog Items that a Quotation is requested for. See [XJDF 2.0].</td>
</tr>
</tbody>
</table>

### 3.14 StockLevelRequest

A StockLevelRequest allows the Print Buyer to query the Print Provider for the available stock levels of pre-printed or non-printed items.

References: N/A (StockLevelRequest is the initiating transaction)

Flow: Print Buyer to Print Provider
3.15 StockLevelResponse

A StockLevelResponse is the response to a StockLevelRequest.

If a Print Provider receives a StockLevelRequest, it SHALL send to the Print Buyer a StockLevelResponse whose @BusinessRefID references the StockLevelRequest.

References: StockLevelRequest

Flow: Print Provider to Print Buyer

3.15.1 StockLevel

Referenced by: StockLevelResponse

Table 3.16: StockLevelRequest Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability ?</td>
<td>enumerations</td>
<td>@Availability SHALL specify a list of availabilities for the items whose stock levels are being requested. Allowed values are from: Table 3.17 Availability Attribute Values.</td>
</tr>
<tr>
<td>Currency ?</td>
<td>Currency</td>
<td>The value of @Currency SHALL be copied to all returned StockLevelResponse/StockLevel/Pricing/@Currency attributes. Note: See Section 1.3.1 Currency for definition of valid currency values, and refer to [ISO4217].</td>
</tr>
<tr>
<td>DisplayPrice ?</td>
<td>boolean</td>
<td>If true then the response SHALL include a StockLevel/Pricing element and all StockLevel/Pricing/Price elements SHALL have a value in the @Price attribute.</td>
</tr>
<tr>
<td>ExternalID ?</td>
<td>regexp</td>
<td>Regular expression that filters the returned list of StockLevel elements to only include elements whose StockLevel/@ExternalID matches @ExternalID. If @ExternalID is not specified, StockLevel elements SHALL be returned for all products.</td>
</tr>
</tbody>
</table>

Table 3.17: Availability Attribute Values

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available</td>
<td>Defines stocked items that are currently available. StockLevel/@Amount SHALL show the number of items currently available. StockLevel/@ProductionDuration SHALL NOT be specified.</td>
</tr>
<tr>
<td>Deliverable</td>
<td>Defines stocked items that are currently not available, but are expected to be available at some future time. StockLevel/@Amount SHALL show the amount and StockLevel/@ProductionDuration SHALL show when the items are expected to be available.</td>
</tr>
<tr>
<td>Undeliverable</td>
<td>Defines either stocked items that are out of stock and for whom no future availability can be estimated, or items that are no longer stocked and may never be available. StockLevel/@Amount and StockLevel/@ProductionDuration SHALL NOT be specified.</td>
</tr>
</tbody>
</table>

3.15 StockLevelResponse

A StockLevelResponse is the response to a StockLevelRequest.

If a Print Provider receives a StockLevelRequest, it SHALL send to the Print Buyer a StockLevelResponse whose @BusinessRefID references the StockLevelRequest.

References: StockLevelRequest

Flow: Print Provider to Print Buyer

Table 3.18: StockLevelResponse Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>StockLevel *</td>
<td>element</td>
<td>Level of available stock.</td>
</tr>
</tbody>
</table>

3.15.1 StockLevel

Referenced by: StockLevelResponse

Table 3.19: StockLevel Element (Sheet 1 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>integer</td>
<td>Number of items that are currently available or will be available within the time defined by @ProductionDuration.</td>
</tr>
</tbody>
</table>
Table 3.19: StockLevel Element (Sheet 2 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>enumeration</td>
<td>@Availability SHALL specify the availability of the item. Allowed values are from: Table 3.17 Availability Attribute Values.</td>
</tr>
<tr>
<td>DescriptiveName</td>
<td>string</td>
<td>Human-readable descriptive name of the item that this StockLevel relates to. @DescriptiveName SHALL be provided to allow the item to be successfully identified.</td>
</tr>
<tr>
<td>ExternalID</td>
<td>NMTOKEN</td>
<td>The xjdf:Product/@ExternalID of the respective item.</td>
</tr>
<tr>
<td>LotID ?</td>
<td>NMTOKEN</td>
<td>Production lot of this item. Used to separate available stock with different pricing based on production lots.</td>
</tr>
<tr>
<td>ProductionDuration ?</td>
<td>duration</td>
<td>Estimated time until item will be available. Note: @ProductionDuration excludes shipping times to the recipient.</td>
</tr>
<tr>
<td>Pricing ?</td>
<td>element</td>
<td>List of Price definitions for the Item specified by this StockLevel. Multiple Price elements in this Pricing element specify the price for orders with an order amount greater than or equal to Price/@Amount. Price/@DescriptiveName SHALL be identical for all Pricing/Price elements in the scope of one StockLevel.</td>
</tr>
<tr>
<td>xjdf:Contact ?</td>
<td>element</td>
<td>If present, xjdf:Contact SHALL specify the location of the item in stock. Both xjdf:Contact/xjdf:Company and xjdf:Contact/xjdf:Address SHOULD be specified.</td>
</tr>
<tr>
<td>xjdf:XJDF</td>
<td>element</td>
<td>Detailed description of the Print Product or Catalog Item that is described by this StockLevel.</td>
</tr>
</tbody>
</table>
4 Subelements

The elements in this chapter are subelements that are used as children of other elements or Business Objects.

4.1 Additional

Referenced by: Price

Table 4.1: Additional Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>double</td>
<td>The additional number of Items that @Price refers to.</td>
</tr>
<tr>
<td>Price</td>
<td>double</td>
<td>The price of the additional number of Items as specified in @Amount.</td>
</tr>
</tbody>
</table>

4.2 Payment

Payment contains additional details about a payment.

Referenced by: Pricing

Table 4.2: Payment Element (Sheet 1 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AuthorizationExpires ?</td>
<td>dateTime</td>
<td>Expiration date of the @Authorization.</td>
</tr>
<tr>
<td>Expires ?</td>
<td>dateTime</td>
<td>@Expires contains a future date regarding the Payment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For payment types that require an expiry date as part of the payment valida-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tion, e.g. “CreditCard”, “DebitCard”, @Expires SHALL contain the expiry date.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the expiration date for the Payment requires less detail than that given</td>
</tr>
<tr>
<td></td>
<td></td>
<td>by dateTime, then the writer SHALL set @Expires to a valid dateTime value and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the reader SHALL use only those details of @Expires that are required to con-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>struct a valid expiration for the payment type of the Payment. In either case</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the value SHALL NOT be rounded.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For payment types that involve a transfer, e.g. “BankTransfer”, “DigitalCurrency”,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>@Expires MAY be used to define when the sending system will cease attempt-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ing to make the payment should it be rejected for any reason.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For ongoing payment types, e.g. “Contract”, @Expires MAY be used to indicate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>when the ongoing arrangement expires.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For other payment types the use of @Expires is implementation dependent.</td>
</tr>
<tr>
<td>IsPaid ?</td>
<td>boolean</td>
<td>If @IsPaid is &quot;true&quot;, the payment transaction has been finalized and no fur-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ther payment is due. If @IsPaid is &quot;false&quot;, then there remain outstanding pay-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ments due. @IsPaid SHALL NOT be provided in the context of a quotation.</td>
</tr>
<tr>
<td>Number ?</td>
<td>NMTOKEN</td>
<td>Credit card number. The format is specified without blanks or any other sepa-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>rator characters.</td>
</tr>
</tbody>
</table>
4.2.1 xjdf:GeneralID - Payment

This section specifies particular values for xjdf:GeneralID/@IDUsage in the context of Payment.

Referenced by:  Payment

---

### Table 4.2: Payment Element (Sheet 2 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| PaymentType | enumeration | If @IsPaid is "true", @PaymentType SHALL specify the method of payment. If @IsPaid is "false", @PaymentType SHALL specify an acceptable payment type. Additional details SHOULD be provided in @PaymentTypeDetails.  

**Allowed values are:**

- BankTransfer - A bank transaction such as a SEPA payment.
- Contract - A general negotiated contract between Print Buyer and Print Provider. The contract SHOULD be identified in @PaymentTypeDetails.
- CreditCard - A credit card. The credit card type SHOULD be identified in @PaymentTypeDetails.
- DebitCard - A debit card. The debit card type SHOULD be identified in @PaymentTypeDetails.
- DigitalCurrency - A digital currency. The currency type SHOULD be identified in @PaymentTypeDetails.
- Invoice - An invoice that is provided with or after delivery. Invoice SHALL NOT be specified in the context of an Invoice. Other - Any payment type that cannot be described by one of the other values in this list. If @PaymentType="Other", @PaymentTypeDetails SHALL be specified.  

| PaymentTypeDetails | string | Additional details of the payment type such as provider brand. |
| xjdf:Comment [ @Type="ptk:PaymentTerms" ] | element | Human readable text that SHALL specify the terms and conditions of the payment. |
| xjdf:Contact | element | Contact details of the person such as the credit card holder or bank account holder that this Payment refers to. |
| xjdf:GeneralID * | element | Additional identifiers related to the Payment. |

---

### Table 4.3: xjdf:GeneralID Element (For use with Payment)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| IDUsage   | NMTOKEN   | Values include:  

- Bank - The name of the bank.  
- BankAccount - The local bank account number.  
- BIC - The SWIFT bank identifier code.  
- IBAN - The international bank account number.  

| IDValue   | string | See › [XJDF 2.0]. |

---

4.3 Price

The Price element specifies the price of an Item which includes the price, a description of the Item and additional metadata.

Referenced by:  Pricing

---

### Table 4.4: Price Element (Sheet 1 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount ?</td>
<td>double</td>
<td>Amount of items that this Price refers to. If @UnitPrice is specified, @Amount SHALL be specified.</td>
</tr>
</tbody>
</table>
### 4.4 Pricing

**Pricing** SHALL specify a list of **Price** elements, each of which in turn specifies the price for a single **Item**.

**Note:** The usage of **Pricing** depends upon its parent **Business Object** and is clarified for each occurrence.

Referenced by: [Invoice](#), [PurchaseOrder](#), [Quote](#), [StockLevel](#)

#### Table 4.4: Price Element (Sheet 2 of 2)

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DescriptiveName</td>
<td>string</td>
<td>The description of the Item.</td>
</tr>
<tr>
<td>DropID</td>
<td>NMTOKEN</td>
<td>@DropID SHALL reference the delivery that this Price applies to and SHALL match xjdf:ResourceSet[@Name=&quot;DeliveryParams&quot;]/xjdf:Resource/xjdf:Part/ @DropID from the XJDF.</td>
</tr>
<tr>
<td>ItemRefs</td>
<td>NMTOKENS</td>
<td>Each value in @ItemRefs SHALL refer to an xjdf:Product/@ExternalID within an associated xjdf:XJDF of the Business Object that this Price relates to.</td>
</tr>
<tr>
<td>LineID</td>
<td>ID</td>
<td>The unique identifier for the Item that this Price represents.</td>
</tr>
<tr>
<td>LineIDRefs</td>
<td>IDREFS</td>
<td>References to Price/@LineID of the Items that have been added to calculate @Price. Price elements that have been referenced by @LineIDRefs SHALL be ignored when searching for the total price. <strong>Note:</strong> Due to differing tax regulations for private and business transactions, there can be multiple total values. <strong>Note:</strong> Due to rounding, @Price may vary from the sum of @Price values of each of the referenced Price elements in @LineIDRefs.</td>
</tr>
<tr>
<td>Price</td>
<td>double</td>
<td>@Price SHALL specify the price of the entire amount as specified by @Amount of the Item.</td>
</tr>
<tr>
<td>PriceType</td>
<td>enumeration</td>
<td>@PriceType SHALL specify the machine readable type of the price. <strong>Allowed values are:</strong> Discount - Discount prices SHALL be negative. DownPayment - The amount that SHALL be paid up front. Production will not commence before this amount is received by the Print Provider. Handling - This price relates to handling charges. If shipping and handling are combined in one Item the value 'Shipping' SHOULD be used. Markup - This refers to additional charges that have been incurred. Markup prices SHALL be positive. Other - Any price type not covered by other values in this list. Prepaid - The amount has already been paid and SHALL be deducted from the total. Prepaid prices SHALL be negative. Product - The requested products. If @PriceType = &quot;Product&quot;, then @ItemRefs SHOULD reference the products that this Price applies to. Shipping - This price relates to shipping charges. Subtotal - This refers to a partial sum of other prices. The value is for information only and SHOULD NOT be used to calculate the total price. Total - Total.</td>
</tr>
<tr>
<td>TaxType</td>
<td>enumeration</td>
<td>@TaxType SHALL specify the taxation of the Price. <strong>Allowed values are:</strong> Gross - The price includes taxes. Net - The price excludes taxes. Tax - The price is only the tax. <strong>Note:</strong> The 'Gross' price MAY differ from the sum of 'Net' price and 'Tax' due to rounding.</td>
</tr>
<tr>
<td>UnitPrice</td>
<td>double</td>
<td>Price for one unit of the Item, i.e. the @Price of the Item if @Amount = &quot;1&quot;.</td>
</tr>
<tr>
<td>Additional</td>
<td>element</td>
<td>Price for orders in excess of the nominal delivery quantity specified in @Amount. Additional SHALL NOT be specified in an Invoice.</td>
</tr>
</tbody>
</table>

**4.4 Pricing**

**Pricing** SHALL specify a list of **Price** elements, each of which in turn specifies the price for a single **Item**.

**Note:** The usage of **Pricing** depends upon its parent **Business Object** and is clarified for each occurrence.

Referenced by: [Invoice](#), [PurchaseOrder](#), [Quote](#), [StockLevel](#)
4.5 StatusRequest

Table 4.5: Pricing Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currency</td>
<td>Currency</td>
<td>@Currency SHALL identify the currency of all Price/@Price values. Note: See Section 1.3.1 Currency for definition of valid currency values, and refer to [ISO4217].</td>
</tr>
<tr>
<td>Payment *</td>
<td>element</td>
<td>Details of the method of payment. Multiple Payment elements SHALL specify multiple payment options. At most one Payment element SHALL be specified in the context of a purchase order. If Payment/@IsPaid=&quot;true&quot;, exactly one Payment element SHALL be specified. Payment SHALL be unique and specify the selected methods of payment in the context of a PurchaseOrder and SHALL specify the list of allowed methods of payments in all other contexts.</td>
</tr>
<tr>
<td>Price +</td>
<td>element</td>
<td>Each Price element represents the price for a single Item or service.</td>
</tr>
<tr>
<td>xjdf:Contact ?</td>
<td>element</td>
<td>Contact details of the person that receives the invoice. Note: Payment/xjdf:Contact specifies the details of an account or card holder, which can be different than the formal recipient of an invoice.</td>
</tr>
</tbody>
</table>

Table 4.6: StatusRequest Element

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATA TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JobIDRef ?</td>
<td>NMTOKEN</td>
<td>@JobIDRef SHALL reference an xjdf:XJDF/@JobID that was present in the PurchaseOrder that is referenced by Request/@BusinessRefID. If not specified, this StatusRequest refers to all jobs specified by Request/@BusinessRefID.</td>
</tr>
<tr>
<td>ResponseDetails ?</td>
<td>enumeration</td>
<td>@ResponseDetails determines the level of detail that is requested to be supplied in the OrderStatusResponse. Allowed values are: Brief – Only the latest xjdf:Milestone notification of the current job status SHALL be returned. CompletedMilestones – All completed xjdf:Milestone notification elements of the current job and the xjdf:Milestone notification elements of steps that have begun processing SHALL be returned. Full – All xjdf:Milestone notification elements as defined by &quot;CompletedMilestones&quot; and at least any additional detailed information as specified in @ReturnAudits SHALL be returned. Additional xjdf:AuditResource elements MAY be returned.</td>
</tr>
<tr>
<td>ReturnAudits ?</td>
<td>NMTOKENS</td>
<td>@ReturnAudits SHALL contain a list of tokens that match the @Name value of an xjdf:ResourceSet. The matching resource sets SHALL be returned in an OrderStatusResponse business object. Additional information MAY be returned. Typical values include DeliveryParams for delivery tracking information or QualityControlResult for quality reporting. @ReturnAudits SHOULD be specified if @ResponseDetails=&quot;Full&quot; and SHALL NOT be specified otherwise.</td>
</tr>
<tr>
<td>Subscribed</td>
<td>boolean</td>
<td>If @Subscribed = &quot;true&quot;, then this StatusRequest is a subscription for multiple OrderStatusResponse messages; else this StatusRequest is a request for one individual OrderStatusResponse message. The trigger conditions for subscribed OrderStatusResponse messages are implementation dependent. OrderStatusResponse messages SHOULD be sent whenever a relevant status change of the subscribed order takes place, i.e. whenever a new xjdf:Milestone is reached.</td>
</tr>
</tbody>
</table>
## 5 Building a System

For a Print Buyer and a Print Provider to negotiate a contract for a Print Product, they SHALL exchange one or more of the following Business Objects: RFQ, Quotation, PurchaseOrder, Confirmation, Cancellation and Refusal.

After a contract has been consummated, either a Print Buyer or a Print Provider MAY initiate a Change Order. The negotiation of the Change Order is performed with the same Business Objects as the initial negotiation — RFQ, Quotation, PurchaseOrder, Confirmation, Cancellation and Refusal. The contract, which both parties have agreed on during previous negotiations, is valid during the whole Change Order process. However the Print Provider MAY halt production of the Print Product. The old contract is replaced only if there is a new agreement on a Change Order (expressed by the new Confirmation sent by the Print Provider). If the Change Order process terminates with a Refusal of a Business Object, an expired Business Object, or Cancellation of a Business Object, the Change Order process fails and production continues as originally planned before the Change Order was proposed.

During the Production Phase, interactions other than Change Orders can take place between the Print Buyer and Print Provider. The Print Buyer MAY send one or more OrderStatusRequest elements and receive an OrderStatusResponse from each request. The Print Provider MAY send unsolicited OrderStatusResponse elements. The Print Provider MAY send one or more ProofApprovalRequest elements and receive a ProofApprovalResponse from each request.

Either the Print Buyer or the Print Provider MAY send a Cancellation for the job during the Production Phase, which generally leads to a final Invoice that conforms to the Print Provider’s terms and conditions.

The Print Provider MAY send Invoice elements to the Print Buyer after delivery of the Print Product as well as at various milestones.

### 5.1 System Requirements

A system that uses PrintTalk will typically be deployed over the internet and therefore security and authentication need to be addressed. Since PrintTalk can contain sensitive data, it is strongly encouraged to use encryption technology whenever possible.

#### 5.1.1 Transport protocol

PrintTalk SHALL be implemented using the request–response model using HTTP or HTTPS.

If no error occurred then the synchronous protocol response SHALL be an empty HTTP or HTTPS response with an HTTP status code of 200. If an error occurred then the HTTP status code SHALL be present and SHALL NOT be 200, and the HTTP body MAY be non-empty, e.g. with a human readable text or html representation of the error.

The one-way protocol defined in cXML 3.1.10 One-Way (Asynchronous) Model MAY be implemented as a secondary protocol, e.g. using hot-folders or email attachments.

#### 5.1.2 Encryption

All PrintTalk transactions SHOULD be encrypted using a secure transport protocol. The details and setup of encryption, including the exchange of certificates, are implementation dependent.

#### 5.1.3 HTTP Content-Type

If PrintTalk is posted over HTTP, the respective content type header value SHOULD be set to: application/vnd-cip4-iptk+xml.

#### 5.1.4 Authentication

Whereas encryption allows for secure communication in the internet by hiding the contents of transactions from third parties, authentication is used to verify that the sender of a message is actually the entity that it claims to be. Authentication is therefore extremely important when fulfilling contracts in order to prevent fraud and misuse of the interface. It is strongly encouraged to only allow access to authenticated clients. If authentication is implemented, it SHOULD follow the directions shown in [RFC6750]. All implementations SHOULD support at least section "2.1 Authorization Request Header Field" from [RFC6750].

[RFC6750] provides methods to verify the identity of a message sender. PrintTalk defines no proprietary authentication methods but it is emphasized that authentication is important in all business transactions.

The initial exchange of the token and renewal, as well as the format of the token is not part of this specification and is implementation dependent.

#### 5.1.5 PrintTalk Packaging

Additional assets such as PDF files or images MAY be provided in a PrintTalk transaction. These assets can be referenced in the web as URLs or can be provided in a single ZIP package that also contains the PrintTalk. In this case the ZIP package consists of a single PrintTalk transaction and the digital assets to which the transaction refers.
5.1.5.1 MIME Types and File Extensions
The following MIME types and extensions SHOULD be used when storing PrintTalk as a file or when a MIME type is required, e.g. when setting the http Content-Type header.

Table 5.1: MIME Types and File Extensions

<table>
<thead>
<tr>
<th>MIME TYPE</th>
<th>EXTENSION</th>
<th>USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>application/vnd.cip4-ptk+xml</td>
<td>ptk</td>
<td>Unpackaged PrintTalk.</td>
</tr>
<tr>
<td>application/vnd.cip4-ptk+zip</td>
<td>ptk.zip</td>
<td>Zip packaged PrintTalk. A double extension of .ptk.zip SHOULD be used.</td>
</tr>
</tbody>
</table>

5.1.5.2 ZIP Packaging
Zip is a de facto industry standard for packaging and compressing data. Directory structures can be encoded in a zip package. For details see [ZIP].

5.1.5.2.1 Identifying the PrintTalk transaction
The PrintTalk transaction SHALL be named PrintTalk and SHALL reside in the root directory of the zip package.

5.1.5.2.2 Referencing Digital Assets within a ZIP Package
Referenced digital assets that reside in the zip package, for instance those that are referenced with @URL, SHALL be referenced as local URLs. The base URL for calculating local URLs SHALL be the root of the zip package. Digital assets other than the PrintTalk MAY be placed in a directory tree structure within the zip file.

5.1.5.2.3 ZIP File Name Encoding
All file and directory names in a zip package SHALL be encoded in UTF-8.

Note: Zip allows any encoding but provides no method to declare the encoding.
A Workflow Diagrams

The **PrintTalk** workflow is described in the following diagrams:

- Figure A-1: Simplified Workflow, representative of web-based catalog ordering.
- Figure A-2: Proof Cycle.
- Figure A-3: Status Request Cycle.
- Figure A-4: Change Order Management.

**Note:** The diagrams contain the following abbreviations:

- **PB** Print Buyer.
- **PP** Print Provider.
- **PO** Purchase Order

*Figure A-1: Simplified Workflow*
Figure A-2: Proof Cycle

Start

PP: Generate proof or data for soft proof

PP: Proof Approval Request

PP: Proof Approval Response

Approval success

End

PP: Fix Problem or PB: Upload New Content

Figure A-3: Status Request Cycle

Start

PB: OrderStatusRequest

PB: OrderStatusResponse

End

Start

PB: OrderStatusRequest

PB: OrderStatusResponse

Job Completed

End
Figure A-4: Change Order Management
B Usage of PrintTalk IDs

This section illustrates the semantics and usage of the various IDs in typical workflow scenarios.

B.1 BusinessID and BusinessRefID

This section illustrates the use of the @BusinessID and @BusinessRefID. The @BusinessRefID references a Business Object that originates from the other side of the workflow. Thus, a Business Object that originates from the Print Buyer references a Business Object that originates from the Print Provider and vice versa. Once a Confirmation has been placed, PurchaseOrder/@BusinessID SHALL be used as the @BusinessRefID of all following Business Objects.

B.1.1 Simple Negotiation

B.1.1.1 Print Buyer sends RFQ

```xml
<Request BusinessID="RFQ_1">
  <RFQ/>
</Request>
```

B.1.1.2 Print Provider sends Quotation referencing RFQ "RFQ_1"

```xml
<Request BusinessID="Quotation_1" BusinessRefID="RFQ_1">
  <Quotation>
    <Quote QuoteID="Quote_1"/>
    <Quote QuoteID="Quote_2"/>
  </Quotation>
</Request>
```

B.1.1.3 Print Buyer sends PurchaseOrder referencing Quote "Quote_1"

```xml
<Request BusinessID="Quotation_1" BusinessRefID="Quotation_1">
  <PurchaseOrder QuoteID="Quote_1"/>
</Request>
```

B.1.1.4 Print Provider sends Confirmation referencing PurchaseOrder "PO_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->
<Confirmation BusinessID="Confirmation_1" BusinessRefID="PO_1"/>
```

B.1.2 Change Order Initiated by Print Buyer and Starting with RFQ

B.1.2.1 Print Buyer sends Change Order RFQ referencing earlier "Confirmation_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->
<RFQ BusinessID="CO_RFQ" BusinessRefID="Confirmation_1"/>
```
B.1.2.2 Print Provider sends Change Order Quotation referencing "CO_RFQ"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<Quotation BusinessID="Quotation_4" BusinessRefID="CO_RFQ">
    <Quote QuoteID="Quote_1"/>
    <Quote QuoteID="Quote_2"/>
</Quotation>
```

B.1.2.3 Print Buyer sends Change Order PurchaseOrder referencing "Quote_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<PurchaseOrder BusinessID="PO_3" BusinessRefID="Quotation_4" QuoteID="Quote_1">
</PurchaseOrder>
```

B.1.2.4 Print Provider sends Change Order Confirmation referencing "PO_3"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<Confirmation BusinessID="Confirmation_2" BusinessRefID="PO_3">
</Confirmation>
```

B.1.3 Change Order Initiated by Print Buyer and Starting with PurchaseOrder

B.1.3.1 Print Buyer sends Change Order PurchaseOrder referencing earlier "Confirmation_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<PurchaseOrder BusinessID="PO_4" BusinessRefID="Confirmation_1" QuoteID="Quote_2">
</PurchaseOrder>
```

B.1.3.2 Print Provider sends Change Order Confirmation referencing "PO_4"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<Confirmation BusinessID="Confirmation_3" BusinessRefID="PO_4">
</Confirmation>
```

B.1.4 Change Order Initiated by Print Provider and Starting with Quotation

B.1.4.1 Print Provider sends Change Order Quotation referencing earlier "PO_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<Quotation BusinessID="Quotation_5" BusinessRefID="PO_1">
    <Quote QuoteID="Quote_1"/>
    <Quote QuoteID="Quote_2"/>
</Quotation>
```
B.1.4.2 Print Buyer sends Change Order PurchaseOrder referencing "Quote_2"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<PurchaseOrder BusinessID="PO_5" BusinessRefID="Quotation_5" QuoteID="Quote_2">
</PurchaseOrder>
```

B.1.4.3 Print Provider sends Change Order Confirmation referencing "PO_5"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<Confirmation BusinessID="Confirmation_4" BusinessRefID="PO_5">
</Confirmation>
```

B.1.5 Complex Negotiation

B.1.5.1 Print Buyer sends RFQ

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<RFQ BusinessID="RFQ_1">
</RFQ>
```

B.1.5.2 Print Provider sends Quotation referencing RFQ "RFQ_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<Quotation BusinessID="Quotation_1" BusinessRefID="RFQ_1">
  <Quote QuoteID="Quote_1"/>
  <Quote QuoteID="Quote_2"/>
</Quotation>
```

B.1.5.3 Print Buyer sends an RFQ for a Requote referencing "Quotation_1".

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<RFQ BusinessID="RFQ_2" BusinessRefID="Quotation_1">
</RFQ>
```

B.1.5.4 Print Provider sends Quotation for Requote referencing "RFQ_2"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<Quotation BusinessID="Quotation_2" BusinessRefID="RFQ_2" ReplaceID="Quotation_1">
  <Quote QuoteID="Quote_1" ReplaceID="Quote_1"/>
</Quotation>
```
B.1.5.5 Print Buyer sends *PurchaseOrder* referencing "Quote_1".

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<PurchaseOrder BusinessID="PO_6" BusinessRefID="Quotation_2" QuoteID="Quote_1">
</PurchaseOrder>
```

B.1.5.6 Print Provider sends *Confirmation* referencing "PO_6".

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<Confirmation BusinessID="Confirmation_6" BusinessRefID="PO_6">
</Confirmation>
```

B.2 ReplaceID

This section illustrates the use of @ReplaceID. A Print Buyer or Print Provider uses @ReplaceID to Supersede a previously sent Business Object that has not been answered yet by the counter party.

B.2.1 Print Buyer Supersedes RFQ

B.2.1.1 The Print Buyer sends an original *RFQ* identified by "RFQ_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<RFQ BusinessID="RFQ_1">
</RFQ>
```

B.2.1.2 The Print Buyer send a superseding *RFQ* by referencing *RFQ* "RFQ_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<RFQ BusinessID="RFQ_2" ReplaceID="RFQ_1">
</RFQ>
```

B.2.2 Print Buyer Supersedes PurchaseOrder

B.2.2.1 The Print Buyer sends an original *PurchaseOrder* identified by "PO_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<PurchaseOrder BusinessID="PO_1" BusinessRefID="Quotation_1" QuoteID="Quote_1">
</PurchaseOrder>
```

B.2.2.2 The Print Buyer send a superseding *PurchaseOrder* by referencing *PurchaseOrder* "PO_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->

<PurchaseOrder BusinessID="PO_2" BusinessRefID="PO_1" ReplaceID="PO_1" QuoteID="Quote_2">
</PurchaseOrder>
```
B.2.3 Print Provider Supersedes Quotation

The Print Provider has replaced "Quotation_1" which had two Quote elements. The new "Quotation_2" retains ONLY the Quote[@Quote_ID="Quote_1"].

B.2.3.1 Print Provider sends an original Quotation identified "Quotation_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->
<br:Quotation BusinessID="Quotation_1" BusinessRefID="RFQ_1">
    <br:Quote QuoteID="Quote_1"/>
    <br:Quote QuoteID="Quote_2"/>
</br:Quotation>
```

B.2.3.2 Print Provider sends a superseding Quotation by referencing Quotation "Quotation_1"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->
<br:Quotation BusinessID="Quotation_2" BusinessRefID="RFQ_1" ReplaceID="Quotation_1">
    <br:Quote QuoteID="Quote_1" QuoteID="Quote_1"/>
</br:Quotation>
```

B.3 ReorderID

This section illustrates the @ReorderID. A Print Buyer or Print Provider uses a @ReorderID to place orders of one or more previously sent PurchaseOrder Business Objects for which the Print Provider has also sent a Confirmation. In all three examples below "old_PO_ID_1" and "old_PO_ID_2" refer to confirmed PurchaseOrder Business Objects.

B.3.1 Print Buyer Reorders via an RFQ

B.3.1.1 Print Buyer sends an RFQ to start the reorder process with "old_PO_ID_1" and "old_PO_ID_2"

Note: "Master_PO_ID" could be a contract reference and not require reference to the previous purchase orders.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->
<br:RFQ BusinessID="RFQ_10" ReorderID="Master_PO_ID">
```

B.3.2 Print Buyer Reorders via a PurchaseOrder

B.3.2.1 Print Buyer sends a PurchaseOrder to reorder "old_PO_ID_1" and "old_PO_ID_2"

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--TBD Placeholder -->
<br:PurchaseOrder BusinessID="PO_10" ReorderID="old_PO_ID_1 old_PO_ID_2">
```

B.4 xjdf:XJDF/@JobID

The xjdf:XJDF/@JobID is the ID of the job within the Print Providers workflow system. When an XJDF is created by a Print Buyer, e.g. in an RFQ, then the xjdf:XJDF/@JobID SHOULD be specified. If a Print Provider cannot maintain an external @JobID, the @JobID SHOULD be copied to xjdf:CustomerInfo/@CustomerOrderID.

All interactions between the Print Buyer and Print Provider SHALL be based on the initial @JobID as specified by the Print Buyer.
**Note:** This implies that the `xjdf:XJDF/@JobID` within a production job of the *Print Provider*’s workflow system NEED NOT be identical to `xjdf:XJDF/@JobID` when communicating with the *Print Buyer*.

**B.5 xjdf:CustomerInfo/@CustomerOrderID**

The `xjdf:CustomerInfo/@CustomerOrderID` is the ID of the job in the context of *Print Buyer*’s MIS or ERP system.
C References

Throughout this specification references to other documents are indicated by short symbolic names inside square brackets, (e.g., [RFC6068]). Implementers need to read and conform to such referenced documents when implementing a part of this specification with such a reference. The reader is directed to this section to find the full title, date, source and availability of all such references.

Table C.1: References

<table>
<thead>
<tr>
<th>TERM</th>
<th>DEFINITION</th>
</tr>
</thead>
</table>
| [cXML 1.2] | cXML Reference Guide, version 1.2  
  Date: April 2013  
  Produced by: cXML Organization  
  Available at: [http://cxml.org/files/downloads.html](http://cxml.org/files/downloads.html) |
| [DUNS] | The Data Universal Numbering System or D-U-N-S number is a unique nine-digit identifier for businesses.  
  Produced by: Dun & Bradstreet  
  Available at: [https://www.dnb.com/](https://www.dnb.com/) |
  Codes for the representation of currencies and funds  
  Date: 2015  
  Produced by: ISO  
  Available at: [https://www.iso.org/store.html](https://www.iso.org/store.html) |
| [RFC6068] | RFC 6068  
  The mailto URL scheme  
  Date: October 2010  
  Produced by: Internet Engineering Task Force (IETF), Network Working Group  
  Available at: [http://www.rfc-editor.org/rfcsearch.html](http://www.rfc-editor.org/rfcsearch.html) |
| [RFC6750] | RFC 6750  
  The OAuth 2.0 Authorization Framework: Bearer Token Usage.  
  Date: October 2012  
  Produced by: Internet Engineering Task Force (IETF), Network Working Group  
  Available at: [http://www.rfc-editor.org/rfcsearch.html](http://www.rfc-editor.org/rfcsearch.html) |
| [XJDF 2.0] | Exchange Job Definition Format  
  Version 2.0  
  Date: January 2018  
  Produced by: CIP4 Organization  
  Available at: [http://www.cip4.org](http://www.cip4.org) |
| [XML] | Extensible Markup Language (XML) 1.0 (Fifth Edition)  
  Version (W3C Recommendation of 26 November 2008)  
  Date: 28 November 2008  
  Produced by: World Wide Web Consortium (W3C)  
  Available at: [http://www.w3.org/TR/2008/REC-xml-20081126/](http://www.w3.org/TR/2008/REC-xml-20081126/) |
| [XMLNS] | Namespaces in XML 1.0 (Third Edition)  
  Version (W3C Recommendation of 8 December 2009)  
  Date: 8 December 2009  
  Produced by: World Wide Web Consortium (W3C)  
  Available at: [http://www.w3.org/TR/REC-xml-names/](http://www.w3.org/TR/REC-xml-names/) |
<table>
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| [XMLSchema] | **Namespaces in XML 1.0 (Third Edition)**  
Version (W3C Recommendation of 8 December 2009)  
Date: 8 December 2009  
Produced by: World Wide Web Consortium (W3C)  
Available at: [http://www.w3.org/TR/REC-xml-names/](http://www.w3.org/TR/REC-xml-names/)  
**XML Schema Part 0+1+2: Primer, Structures and Datatypes**  
Date: 28 October 2004  
Produced by: World Wide Web Consortium (W3C) XML Schema working group  
Available at: [http://www.w3.org/TR/xmlschema-0/](http://www.w3.org/TR/xmlschema-0/)  
[http://www.w3.org/TR/xmlschema-1/](http://www.w3.org/TR/xmlschema-1/)  
[http://www.w3.org/TR/xmlschema-2/](http://www.w3.org/TR/xmlschema-2/) |
| [ZIP] | **File compression and archiving**  
.ZIP File Format Specification – Version 6.3.4  
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Produced by: PKWARE Inc.  
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