Specification BMEcat® 2005

Module Integrated Procurement Point

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Expression of thanks

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1 Introduction

1.1 Overview

The BMEcat® format has been developed with the purpose of standardizing the exchange of product catalogs between suppliers and purchasing companies and thus simplifying it. In the underlying model the supplier creates a catalog in electronic form corresponding to the BMEcat® standard. In the following this catalog will be named catalog document. The catalog document enables additionally the integration of multimedia product data, for example illustrations, charts, technical documents, operating instructions etc.

BMEcat® supports multilingual catalog content as well as multiple languages. The BMEcat® format is not limited to tangible products, but can also be used for the description of software, services, rights, information goods, digital products etc. Therefore, in the following the term 'product' respectively 'product catalog' will be expanded to all kinds of commercial goods as far as they are suitable for being represented in a catalog.

Typically the supplier transmits the BMEcat® catalog document to a purchasing organization that processes the contents of the catalog document and, for example, imports it into an e-procurement or catalog management system. This procedure is called catalog data exchange. The BMEcat® format does not only enable the supplier the transfer of the complete product data, but also for example the update of price data or individual products.

BMEcat® catalog documents, however, are not limited to the mere use for transmission to purchasing companies. Rather they are suitable just the same for the update of on-line shops administered by the suppliers, for sales support, for the supply of electronic market places, and quite generally for the transmission of product data - either externally between different companies or internally within a single company.

The use of BMEcat® represents an important step on the way to standardized business-to-business e-commerce. Companies which place BMEcat® catalogs at their customers' disposal or are able to process their suppliers' BMEcat® catalogs, are complying with an important requirement for electronic business transactions, the participation in new trading platforms and the automation of their sales respectively procurement processes. Additionally to BMEcat®, openTRANS (see **www.opentrans.org**), a transaction standard based on BMEcat® can be employed for the data exchange within the context of order processing.

BMEcat® is being developed unter the umbrella of the Bundesverband Materialwirtschaft, Einkauf und Logistik e.V. (BME), which is the German Association of Purchasing Managers. The BME is a service provider for its about 6,000 members, which represent more than 80 percent of the purchasing volume of the German industry (about 700 Billion Euros). More information on the BMEcat® organization and possibilites to contribute to the standard is available at **www.bmecat.org** .

1.2 Application of XML

BMEcat® catalog documents are coded in XML, the "eXtensible Markup Language". XML is the de-facto standard for data exchange in the internet and is being developed by the World Wide Web Consortium (see **http://www.w3.org/XML**). XML enables the simultaneous codification of structures and data in a catalog document as opposed to, for instance, conventional, less efficient formats like MS Excel files or comma-separated value lists (CSV files). The structure of BMEcat® catalog documents is formally very exactly described by use of the language XML Schema (XSDL); this formal specification is published in an accompanying separate document in the form of XSD files and can be accessed via the website **www.bmecat.org**.

1.3 Supplementary activities and standards

BMEcat® standardizes the exchange of electronic product catalogs. Another, though supplementing area of standardization concerns the classification and description of products (and services). For this purpose, product classes and classification hierarchies are being defined for various applications and branches of industry. In addition, the standardized description of products is enabled by product features assigned to the classes. Both are subject of product classification systems such as eCl@ss, ETIM, profiCl@ss, and UNSPSC. The BMEcat® standard is not committed to any one of these classification systems and does not in any case recommend any specific BMEcat® classifications. Rather the BMEcat® standard is conceived in such a way that almost all classification systems known at present can be used for the classification and description of products in BMEcat® catalogs.

1.4 Implementation support

The BMEcat® standard is meanwhile being supported by numerous software providers and systems. In particular, this applies to e-procurement systems, sell-side shop systems, electronic market places, service providers taking care of content supply and content maintenance as well as product data and catalog management systems. BMEcat® catalogs can be created and processed with the help of these systems. In addition, special software tools for the production and evaluation of BMEcat® catalogs as well as the conversion of data into the BMEcat® format are offered. For supplementary information, please refer to **www.bmecat.org**.

The BMEnet GmbH (daughter of BME) offers the certification of BMEcat® catalogs. Target group for the certification are suppliers who receive a test seal for their catalog. Thus they can prove that their catalog fulfills the BMEcat® standard up to 100 %; this information is helpful for customers, operators of procurement portals, market places, electronic procurement systems, and clearing centres. With the presentation of the certified catalogs in the BME portal and the on-line position of the certified catalogs, an efficient research tool for the purchase is provided, and thus a target group-specific marketing and sales platform for the suppliers. For further information please refer to **www.bmenet.de**.

1.5 Website www.bmecat.org

Inter alia, the following information is provided in German and English on the website www.bmecat.org:

- Download of the specification in different formats
- Download of the specification in form of XML DTD and XML Schema
- Download of example catalogs

Error messages and change messages as well as known errors respectively their corrections can be accessed via the website.

Furthermore, also information about the participation in the BMEcat® development via the BMEcat® change forum can be found.

2 Specification

2.1 Specification structure

The BMEcat® format is described in detail in a total by five documents. These are:

- Specification BMEcat ®
- Specification BMEcat ® - Module Price Formulas
- Specification BMEcat ® - Module Integrated Procurement Point
- Specification BMEcat ® - Module Product Configuration
- Specification BMEcat ® - Module Classification Systems, Catalog Groups Systems, and Feature Systems

In the module specifications, functions and data areas are described that can be used optionally in each case. For the facilitation of the handling, these have been stored outside in separate partial specifications which are needed only in case the extended functions are used. Wherever necessary in the specification, the module specifications are referred to. The module specifications have been arranged in such a way that they describe a range exclusively within themselves, without having to fall back upon the other modules. This signifies that the module specifications are not non-overlapping. There are for example also formula specifications in the module product configuration, since formulas take care of both the price calculation as well as the calculation of feature values in the course of the configuration.

The detailed specification is supplemented by the technical specification in the form of XSD files as well as example files of BMEcat catalogs®.

In order to facilitate the navigation within the specification documents, relevant key terms (e.g., element names) with cross references are provided that allow the direct jump to the respective place in the document. The cross references are clearly marked in green letters.

References to external resources in the World Wide Web are likewise available (e.g., for definitions of standardized data types) and are shown as blue hyperlinks to enable the direct jump to the relating website.

The **reference of elements** is the main part of the specification. Herein, all elements are defined in the order

they can appear in a BMEcat® catalog document. The **alphabetical index of BMEcat® elements** allows the quick jump to individual elements. This index as well as the **table of contents** is made of cross references with immediate hyperlinks to the elements.

The appendix is subdivided into three areas: The list of data types describes in detail all data types defined in BMEcat®(i.e., base data types, enumeration data types, and special data types). The change history gives an overview in alphabetical order of the elements changed in BMEcat® 2005. Last but not least, there are two additional lists of all BMEcat® elements (illustration of the document hierarchy, and a-z list).

2.2 Description of elements

Each element is described according to the same scheme. The description is structured as follows:

- the **designation: descriptive element name**,
- the **element name** for the use in XML documents,
- the **explanation** describes the function respectively meaning of the element,
- a chart for the visualization of the sub elements of the element as well as the structural context:

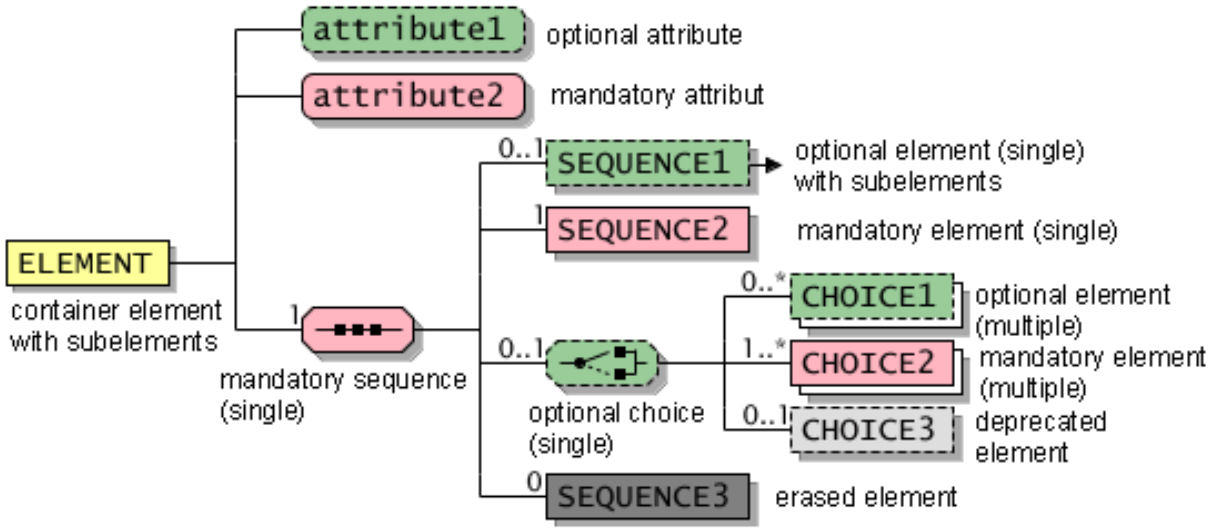
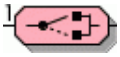
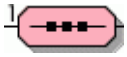


Figure 2-1: Visualization of elements and sub elements

The described element always appears on the left side and is yellow (light); the sub elements appear on the right side one beneath the other; the elements have angular edges, XML attributes have round edges; if a sub element is red (respectively dark), it is a mandatory field; if it is green (respectively light), then it is optionally usable (optional field, also refer to section **mandatory and optional fields**); elements omitted in the next BMEcat® version are light grey, elements that are already no longer permitted in the current version are dark grey; the symbols and abbreviations connected with the elements have the following meaning:

- **"0...1"** as well as a dotted border indicate an optional element that can appear, but does not have to appear;
- **"1"** as well as a continuous border indicate an element that has to appear exactly once in this place;
- **"0...*x*"** as well as a dotted border indicate that the element can appear *x* times in this place, but it is not required to appear; an "*" (asterisk) stands for an infinite number of appearances;
- **"1...*x*"** as well as a continuous border indicate that the element can appear *x* times in this place, however, it has to appear at least once, an "*" (asterisk) stands for an infinite number of appearances;
- the -symbol indicates that the element can have at least one sub element; if this character is missing, it refers to a leaf element, i.e. a data type has to be indicated in this case.
- the  -symbol indicates that exactly one of the following elements has to appear;
- the  -symbol indicates that the following elements can appear in the given order; mandatory elements have to, optional elements can appear;

- the **table "general"** describes briefly the following characteristics of the element: the column "Used in" demonstrates in which superior elements the respective element can be used; the column "Default value" indicates which value is assigned, if the element is not existing (also refer to section **mandatory**

and optional fields); the column “Data type“ indicates the domain of values for the element (if it has no sub elements); the column “Field length” indicates the maximal number of characters that can be assigned to the element (also refer to **symbol codification in XML**); the column "Lang.specific" indicates whether the field contents is dependendt on the language; the column “l.chg. in ver.” indicates the BMEcat® version in which the element has been changed last,

- the **table "attributes“** lists the attributes used in the element: the column "Designation" contains the name describing the attribute, if possible, in one single word; the column “Attribute name“ indicates the XML attribute; the column “Mandatory/optional“ indicates, whether the attribute is mandatory or optional (also refer to section **mandatory and optional fields**); the column “Explanation" describes the use of the attribute; the columns "Default value", "Data type", "Field length", "Lang.specific", and "L.chg. in ver." are used like in table "general"; rows with light grey background indicate attributes that will be omitted in the next BMEcat® version; attributes that are already no longer permitted in the current version are further listed for the sake of completeness, however, the respective row has a dark grey background,
- if it is further specified how values are to be assigned to an attribute, for each attribute a **table with a list of values** can follow; thereby it is to be differentiated whether the list containes predefined values (i.e., these values are suggested, but also other values can be used in accordance with the description of the attribute), or whether the list contains all permitted values (i.e., only values from this list, no others may be used); the column "Attribute value" indicates the values which can or which have to be assigned to the attribute; the columns "Designation", "Explanation", and "l.chg. in ver." are used like in table "Attributes",
- in the **table "elements"** the sub elements of the respective element are listed in their order; the sub elements are described by the following columns: the column "Element name" contains the notation which has to be used in the XML document; if the sub element itself has no more sub elements, in this column the attributes of the sub element are listed additionally; the columns "Designation", "Mandatory/optional", "Default value", "Data type", "Field length", "Lang.specific", and "l.chg. in ver." are used like in the table "Attributes" respectively "General"; rows with light grey background indicate elements, which are omitted in the next BMEcat® versions; attributes which are already no longer permitted in the current BMEcat® version are further listed for the sake of completeness, however, the respective row has a dark grey background,
- an **example** complements the element specification; in these examples, all BMEcat® elements are black and its values as well as attribute values are blue.

The XML examples show the BMEcat® application on the basis of cut-outs from a catalog document. Partly because of space restrictions, the more complex elements are not shown with their complete contents, but only schematically by opening and closing tags, e.g., `<BUYER>...</BUYER>` .

In the describing texts the following symbols are used for giving important information:

Symbol	Meaning
	Attention: reference to possible source of error
	Note: describing note containing additional information
	New from BMEcat® 1.2 to BMEcat® 2005 final draft

Figure 2-1: Symbols in the BMEcat® specification

2.3 Mandatory and optional fields

The BMEcat® format makes a distinction between mandatory und optional fields. Mandatory fields are XML elements that have to appear in an XML file adhering to BMEcat® within the encompassing context. Optional fields are XML elements that can appear in an XML file adhering to BMEcat® within its context. Optional fields in the tables of this specification are green (respectively light), and mandatory fields are red (respectively dark).

A catalog document is adhering to the BMEcat® format, if it contains all mandatory fields, and no other than the optional fields defined in the specification are used in the given order and with the specified cardinality.

For example, in BMEcat® the short description **DESCRIPTION_SHORT** of a product is a mandatory field within the context **PRODUCT_DETAILS**, whereas the long description **DESCRIPTION_LONG** is an optional field in the same context.

Therefore, if the parent element **PRODUCT_DETAILS** appears in a catalog document, the element **DESCRIPTION_SHORT** has to be existing and must not be empty, whereas the element **DESCRIPTION_LONG** can follow **DESCRIPTION_SHORT**. The next examples illustrate this requirement.

Example 1: Short description only (mandatory field):

```
<PRODUCT_DETAILS>
    <DESCRIPTION_SHORT>File</DESCRIPTION_SHORT>
</PRODUCT_DETAILS>
```

Example 2: Not permitted - Empty short description (mandatory field):

```
<PRODUCT_DETAILS>
    <DESCRIPTION_SHORT></DESCRIPTION_SHORT>
</PRODUCT_DETAILS>
```

Example 3: Short description (mandatory field) and long description (optional field)

```
<PRODUCT_DETAILS>
    <DESCRIPTION_SHORT>File</DESCRIPTION_SHORT>
    <DESCRIPTION_LONG>This file is made of very solid material.</DESCRIPTION_LONG>
</PRODUCT_DETAILS>
```

Determining whether an element has to be used in its context can be resolved by parsing from the outside to the inside. The following example is to illustrate this: The element for skeleton agreement information **AGREEMENT** is an optional field in the context of **HEADER**. Thus, information on skeleton agreements can be stored in the catalog header, though it is not required to provide this information at all. If the decision is made, however, to use the element **AGREEMENT**, in this element the sub elements **AGREEMENT_ID** for the contract number and **DATETIME** have to be indicated for the end date of the contract, since both elements are mandatory in the context of **AGREEMENT**.

The two following examples illustrate this fact.

Example 4 (HEADER without skeleton agreement information):

```
<HEADER>
    <CATALOG>...</CATALOG>
    <BUYER>...</BUYER>
    <SUPPLIER>...</SUPPLIER>
</HEADER>
```

Example 5 (HEADER with skeleton agreement information):

```
<HEADER>
    <CATALOG>...</CATALOG>
    <BUYER>...</BUYER>
    <!-- Here AGREEMENT can be indicated (optional field) -->
    <AGREEMENT>
        <!-- Here AGREEMENT_ID has to be indicated (mandatory field) -->
        <AGREEMENT_ID>21312</AGREEMENT_ID>
        <!-- Here DATETIME (or AGREEMENT_END_DATE) has to be indicated (mandatory field) -->
        <DATETIME type="agreement_end_date">
            <!-- Here DATE has to be indicated (mandatory field) -->
            <DATE>2002-05-31</DATE>
        </DATETIME>
        <!-- Here AGREEMENT_DESCR could be indicated (optional field) -->
    </AGREEMENT>
    <SUPPLIER>...</SUPPLIER>
</HEADER>
```

2.4 Data types

Data types determine the format and the range of values for the elements defined in BMEcat®. Exactly one data type is assigned to each atomic element. The use of data types enables a detailed description of the way how to use an element correctly.

In the BMEcat® format a distinction is made between basic data types, enumeration data types, and special data types.

The **basic data types** define current and frequently used data formats, e.g., character strings, integers, yes/no values etc. Refer to the **Table of basic data types** in the appendix.

Furthermore, **enumeration data types** are used that are based on international standards. An enumeration data type is defined by a set of permissible values being character strings. If an enumeration data type is assigned to an element, then this element can only take on a value from the set of the permissible values. All enumeration data types are indicated in the **table of enumeration data types**.

In the **table of special data types** in the appendix some **special data types** with dedicated functions can be found. For the time being these data types are empty in BMEcat®, thus defined without contents and do not have to be taken further into account by the user. Only in the case of the user specific or module based extension of the BMEcat® format, these data types are defined and concretized anew.

2.5 Character codification in XML

The codification of the individual characters in the XML elements should be indicated in each BMEcat® file. This takes place in the attribute "encoding" of the XML text declaration, e.g., `<?xml version="1.0" encoding="UTF-8"?>` .

BMEcat® supports all sets of characters mentioned in the XML specification (i.e., ISO-8859-1, UTF-8, and UTF-16). Concerning the UTF sets, each character is usually stored in one or more bytes.

It is important to note that the field length in the column "Field length" refers to the individual character and not to the number of bytes used by the set of characters. For example the "Ü" codified as "Ü" represents a single character.

Concerning this, also refer to **Chapter: Multilingual catalog documents**.

2.6 Version history

Version	Date	Description
1.0	1999-11-08	First version
1.01	2000-01-02	Elimination of individual inconsistencies and revision of the examples
1.2 final draft	2000-12-19	Error corrections, smaller extensions and a general improvement of the documentation
1.2	2001-03-27	Translation of the feedback received on version 1.2 final draft
2005 final draft	2005-05-10	Revision and extension of the functionality; revised form and content of the specification
2005	2005-11-14	Translation of the feedback received on version 2005 final draft

Table 2-1: Version history of BMEcat®

3 Integrated Procurement Point (IPP)

In BMEcat® 2005 the closer integration of both business partners supplementary to the to a large extent decoupled catalog production at the supplier's site and the subsequent catalog use at the purchasing company's site is supported. This is expressed in the term Integrated Procurement Point (IPP): The catalog used by the purchaser offers extended functions in order to query information administered by the supplier or to call up systems administered by the supplier.

With the IPP concept the inter-company integration of catalog-based transaction systems (i.e., sell side, buy side and market place systems) can be improved in case the information systems involved communicate synchronously with each another via defined messages. Synchronous communication means that in the context of a session a sequence of documents referring to one another is mutually exchanged. Depending on the application, this document sequence can include user interactions or can also be processed completely automatically.

The following IPP applications are at hand:

- **External catalog**
- **Product request**
- **Price request**
- **Availability request**
- **Request for quotation**

External catalog is the most important IPP application. Depending on the software provider, it is also called PunchOut or Roundtrip.

3.1 IPP applications

3.1.1 External catalog

The external catalog is an alternative to the conventional exchange of catalog data between suppliers and buyers. While conventionally the catalog data of the supplier is transferred with the use of the BMEcat® transaction **T_NEW_CATALOG** and is imported into a catalog system of the buyer, the IPP application external catalog calls up a remote catalog. The re-transfer to the calling system contains the product data selected by the user or automatically accessed. In the first case, the user accesses the remote system and selects demanded products or configures a product in this system (i.e., remote product configurator). The result of the selection is re-transferred as a product list into the calling system and into the procurement process started there. The data exchange between supplier and buyer is shown in **Figure IPP-1**.

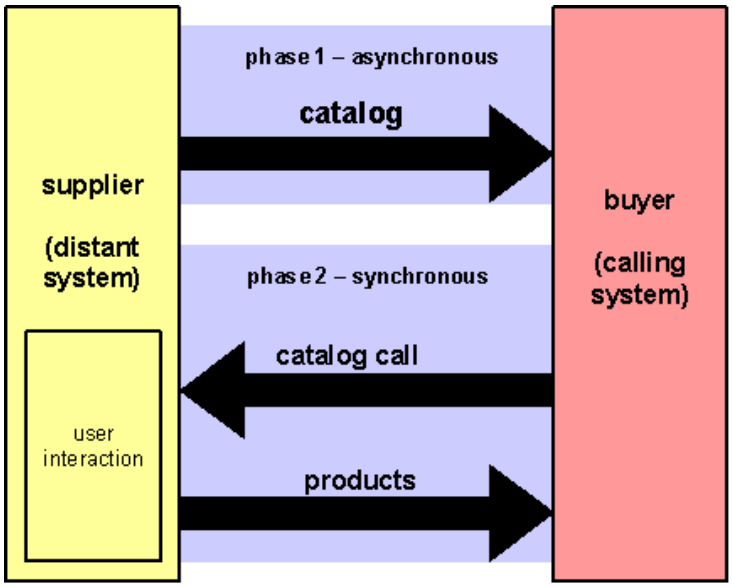


Figure IPP-1: Data exchange with the IPP application external catalog

IWith this IPP application, the catalog data can remain largely at the supplier's site. This application is most suitable for product whose administration would require high expenditures for the buyer (or in a market place system) respectively is not possible at all due to missing data. These are extensive, strongly changing assortments, permanently growing catalogs (e.g., literature) as well as complex products, whose configuration is only possible or desired via a configuration system administered by the supplier. Also the often close integration of the supplier's external catalog with the supplier's ERP system permits better catalog applications that can, for example, fall back on stock, delivery period, and customer-specific price data.

3.1.2 Product request

The IPP application product request is used for requesting product data from the remote system in order to support product search or to supplement, update or validate product data that already exists in the calling system. The request is created by an e-procurement system (respectively market place) administered by the buyer, and is sent to the supplier. Product requests can be initiated by end-users or they can run automatically in the background. The supplier replies to the request synchronously, so that the product data can be presented to the user in the calling system. The data exchange is shown in **Figure IPP-2**.

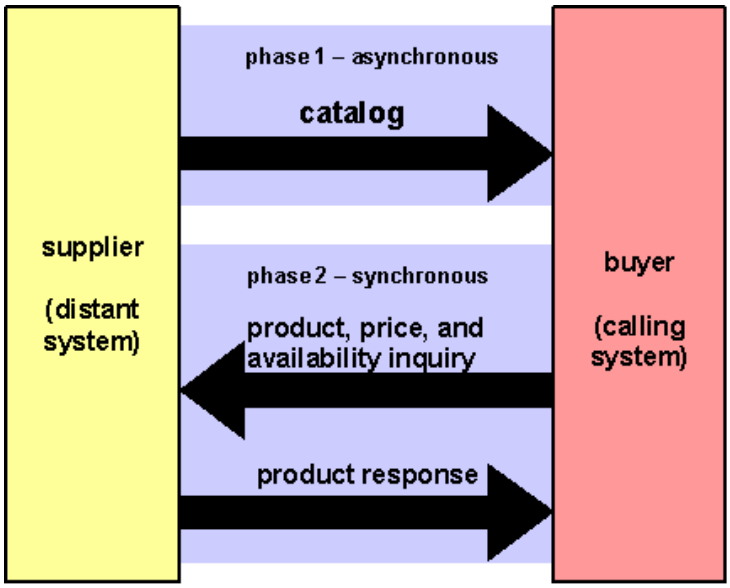


Figure IPP-2: Data exchange with the IPP application product request, price request, and availability request

3.1.3 Price request

The IPP application price request is used for requesting the current and often individual price for the respective buyer for one or several products from the supplier. The request is created by an e-procurement system (respectively market place) administered by the buyer, and is sent to the supplier. Typically price requests are initiated by end-users, who require the current price for a selected product or the current prices for the entire content of a shopping cart. The supplier replies to the request synchronously, so that the price information can be presented to the user in the calling system. The data exchange is shown in **Figure IPP-2**. The exchange formats used for implementing this process provide specific document types; in case of xCBL these are "PriceCheckRequest" and "PriceCheckResult".

The employment of the synchronous price request offers several application benefits:

- Also such products can be shown in electronic catalogs, whose prices are subject to changes (e.g., current market prices).
- It becomes possible to integrate customer-specific and current prices in the catalog applications beyond the price information contained in the catalog document, and thus to provide the buyer better information for making procurement decisions.
- For the reply to the price request, the supplier can use pricing rules that are stored in his ERP system. These rules go clearly beyond the possibilities of price modeling and price differentiation of conventional catalog-based procurement systems (and its respective catalog formats).
- Also the transfer of price information in catalogs can be completely omitted (phase 1), when this information is provided via synchronous communication (phase 2) in a dynamic way.

3.1.4 Availability request

The IPP application availability request is used for requesting the current and often individual availability information for one or several products. Availability means: if and under which restrictions are the products available, and thus deliverable by the supplier. Restrictions can cover price conditions, delivery periods, splitting the order size into partial deliveries, and the availability commitment degree.

The availability request is created by an e-procurement (respectively market place) administered by the buyer, and is sent to the supplier. Typically availability request are initiated by end-users, who require the current availability for a selected product or for the entire contents of a shopping cart. The supplier replies to the request synchronously, so that availability information can be presented to the user in the calling system. The data exchange is shown in **Figure IPP-2**. The exchange formats used for implementing this process provide specific document types; in case of xCBL these are "AvailabilityCheckRequest" and "AvailabilityCheckResult".

The employment of the synchronous availability request improves catalog-based sales and procurement processes as follows:

- Now such products can be represented more suitable in catalogs, whose availability is subject to deviations, so that orders can hardly be processed on the assumptions of fixed prices, fixed delivery periods and total delivery.
- It becomes possible to integrate customer-specific and current availability information in the catalog applications beyond the restricted availability information that is usually contained in catalog, if any (e.g., planning delivery periods), and thus to provide the buyer better information for making procurement decisions.
- Also the transfer of availability information including price information in catalogs can be completely omitted (phase 1), when this information is provided via synchronous communication (phase 2) in a dynamic way.

3.1.5 Request for quotation

The IPP application request for quotation (RFQ) is used for transferring a RFQ specified in the calling system to the remote system; thus an offer generation process should be started in the remote system. A RFQ can refer to products contained in the respective BMEcat® catalog document or to any other product.

Different from the other IPP applications, the response to a RFQ does not take place synchronously, since the offer generation needs a longer time period, and this cannot be covered by a single user session. The data exchange is shown in **Figure IPP-3**. The exchange formats used for implementing the request for quotation process provide specific document types; in case of xCBL these are "RequestForQuotation" and "Quote", in case of openTRANS these are "RFQ" and "QUOTATION".

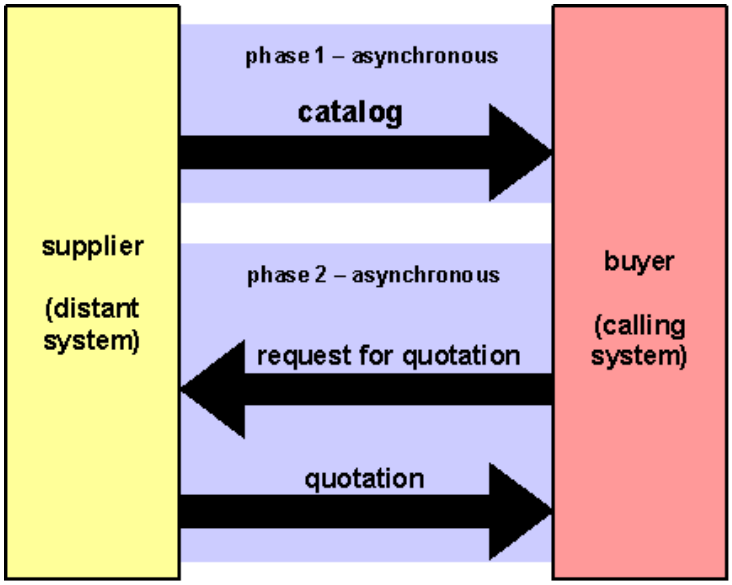


Figure IPP-3: Data exchange with the IPP application request for quotation

3.2 IPP operations

The IPP concept is outlined in such a way that very different processes can be described. For this purpose, for each IPP application so-called IPP operations, which indicate the form of usage of the IPP application, are available.

For example three IPP operations are assigned to the IPP application "external catalog":

- "create": This operation describes the calling-up of the external catalog; it is to be defined for all respective IPPs.
- "show": This operation shows a shopping basket on the exsternal system; therefore, it allows to call-up a product list that has been created prior. Such a catalog call is not used for searching for products in the supplier's system, but it addresses the order process (i.e., status check).

- "recreate": This operation creates a copy of a previously created product list (or configured product) in the remote system; thus it supports repeating the same or similar purchases. The completion of this operation is formed by the re-transfer of the created and, if necessary, modified product list into the calling system.

The following table shows for each IPP application the allowed operations:

IPP applicaton	IPP operation	Explanation
External catalog	Selection and submittal (create)	Jumps to the external website of the IPP provider to build up a product list via user interaction (e.g., product search or product configuration)
	Display (show)	Shows a shopping basket on the external system (may include status information).
	Reselection and submittal (recreate)	Makes a copy of the (old) product list and creates from that a new changeble product list on the external web-site
Product request	Carry out (process)	Starts a product request for a list of products
Price request	Carry out (process)	Starts a price request for a list of products
Availability request	Carry out (process)	Starts an availability request for a list of products
Request for quotation	Carry out (process)	Starts a request for quotation for a list of products
	Display (show)	Shows the status of a started request for quotation on the external system

Table IPP-1: IPP applications and IPP operations

3.3 IPP information in the BMEcat® catalog document

3.3.1 Product-overlapping IPP information

The IPPs available for a catalog are to be defined in the BMEcat® catalog document. The **IPP_DEFINITION** element takes care of that in the product-overlapping data area. Each IPP represents an implementation of exactly one IPP application, i.e. for each different IPP application a single IPP has to be defined. Likewise a catalog can support several IPPs of the otherwise same IPP application, e.g., two different remote product configurators.

The IPP definition covers the following information:

- IPP identifier to be able to assign the IPP to one or several products on the product level.
- Indication of the IPP application (external catalog, price request, ...),
- Indication of the supported IPP operations,
- if necessary, naming of the IPP provider in the case of multi-supplier catalogs,
- if necessary, IPP description for representation in the target system.

For each IPP the supported IPP operations are to be described in detail (see **IPP_OPERATION**):

- Operation identifier to be able to assign the operation to one or several products on the product level,
- Indication of the IPP operation (create, recreate, show, process),
- Specification of the IPP calling-up, i.e. the outbound parameter for the remote system,
- Specification of the IPP resubmittal, i.e. the inbound parameter from the remote system,
- if necessary, description of the operation for representation in the target system.

3.3.2 IPP call-up specification

The specification of the IPP call-up takes place via the **IPP_OUTBOUND**element . The format used for the data exchange (**IPP_OUTBOUND_FORMAT**) as well as the calling address (**IPP_URI**) is to be indicated.

The IPP call-up itself takes place via the used exchange format. These exchange formats differ in the functionalities provided. The IPP operator can, however, already indicate in the BMEcat® catalog, in which way the exchange format has to be used concretely. The sub element **IPP_OUTBOUND_PARAMS** fulfills this role by taking over two tasks.

On one hand, the capabilities of the remote system can be described, i.e.:

- supported languages of the user interface,
- supported currency for price data,
- supported price types,
- supported availability areas.

On the other hand, parameter values from the catalog can be submitted directly to the remote system, or their submittal can be specified in a binding way, inter alia:

- Product number
- Identification of a product configuration,
- Identification of a product list,
- Authentification data (login, password),
- User-defined parameters that extend the used exchange format (see **IPP_PARAM_DEFINITION**).

3.3.3 IPP-inbound specification

The IPP-inbound specification takes place via the **IPP_INBOUND** element. With this element, the IPP operator can describe which values the remote system can return. It depends mainly on the used exchange format (**IPP_INBOUND_FORMAT**), i.e. the indication of this format already gives information about the inbound parameters. In the BMEcat® catalog, if necessary, only the bilaterally agreed extensions of the underlying exchange format (**IPP_INBOUND_PARAMS**) can be described.

3.3.4 Product-related IPP information

The IPPs defined in the BMEcat® catalog are usable, when they are assigned to one or several products. This means for example that an IPP for price requires is not automatically applicable for all products of the catalog. The mapping takes place on the product level (**PRODUCT**) in the container element (**PRODUCT_IPP_DETAILS**) via referencing both the IPP and its IPP operation. Besides that the following information can be indicated:

- product-specific values for outbound parameters previously defined in **IPP_PARAM_DEFINITION**
- product-specific calling address which replaces the general calling address
- product-specific response time which replaces the general respone time.

Apart from the allocation of IPPs to regular catalog products in the BMEcat® catalog, also dummy products that are intended for IPP applications exclusively can be entered. From these dummy products the call-up of the remote system takes place in the catalog system. For example, dummy products can be inserted for jumping to remote configuration systems; a further application case are "representations" for complete product assortments, which can only be accessed in the remote catalog. In all cases the entire BMEcat® vocabulary for describing these dummy products is at hand, i.e. names, texts, references, classification, features, multimedia information, product references etc. Therefore, the dummy products integrate themselves completely into the regular catalog; especially, they can be found via the same search functions, since they do not differ from the other products.

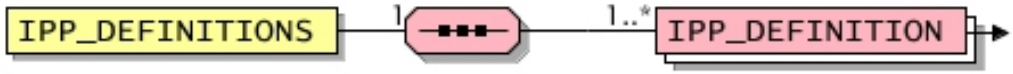
Reference of elements - order by appearance

IPP_DEFINITIONS

(IPP applications of the catalog)

This element holds definitions of IPP applications that are supported by the catalog.For that purpose each IPP application has to be defined in detail.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
-	-	-	-	-	2005fd

Elements

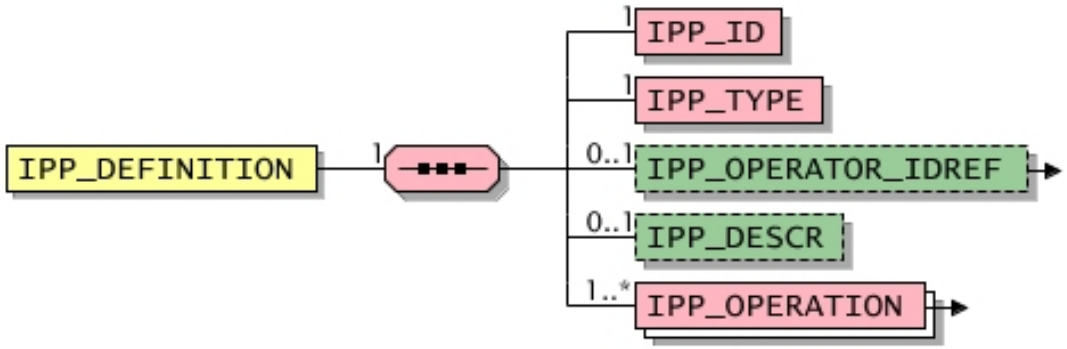
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP definition	**IPP_DEFINITION**	Mandatory	Multiple	Definition of an IPP	-	-	-	-	2005fd

IPP_DEFINITION

(IPP definition)

This element defines an IPP.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_DEFINITIONS	-	-	-	-	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP application ID	**IPP_ID**	Mandatory	Single	Unique identifier of the IPP application 2005fd: New element	-	**dtSTRING**	60	-	2005fd
IPP application	**IPP_TYPE**	Mandatory	Single	This element determines the IPP application, e.g., external catalog, price request. 2005fd: New element See also: **Permitted values for element IPP_TYPE**	-	**dtSTRING**	20	-	2005fd
Reference to IPP provider	**IPP_OPERATOR_IDREF - type**	Optional	Single	Reference to the IPP provider. It contains the unique identifier (**PARTY_ID**) of the respective party that is defined in the document.	-	**dtSTRING**	250	-	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Description of the IPP application	**IPP_DESCR**	Optional	Single	This element is used to describe the IPP application (e.g., "Configurator for Office Chairs").	-	**dtML-STRING**	250	Yes	2005fd
IPP operation	**IPP_OPERATION**	Mandatory	Multiple	Specification of an IPP operation supported by the respective IPP 	-	-	-	-	2005fd

Permitted values for element IPP_TYPE

Designation	Element value	Explanation	I.chg. in ver.
Availability request	availability_request	This IPP application starts a **request for availability information**.	2005fd
External catalog	external_catalog	This IPP application starts an **external catalog**.	2005fd
Price request	price_request	This IPP application starts a **request for price information**.	2005fd
Product request	product_request	This IPP application starts a **request for product information** and validation respectively.	2005fd
Request for quotation	rfq	This IPP application starts a **request for quotation**.	2005fd

Example "external catalog"

In the subsequent example an IPP application "external catalog" is defined with the following charcteristics: it decribes an office chair cofigurator which can be started via the 'show' operation; call and return are realized with the format OCI 4.0; one of two possible languages has to be selected; the prices shown in the configurator are net customer end prices in euro; when calling the catalog the login name has to be transferred; finally the IPP requires the transfer of a user-defined parameter, which extends the OCI format.

```
<IPP_DEFINITION>
    <IPP_ID>1</IPP_ID>
    <IPP_TYPE>external_catalog</IPP_TYPE>
    <IPP_DESCR>Office Chair Configurator</IPP_DESCR>
    <IPP_OPERATION>
        <IPP_OPERATION_ID>1</IPP_OPERATION_ID>
        <IPP_OPERATION_TYPE>show</IPP_OPERATION_TYPE>
        <IPP_OUTBOUND>
            <IPP_OUTBOUND_FORMAT>OCI-4.0</IPP_OUTBOUND_FORMAT>
            <IPP_OUTBOUND_PARAMS>
                <IPP_LANGUAGES occurence="mandatory">
                    <LANGUAGE>deu</LANGUAGE>
                    <LANGUAGE>eng</LANGUAGE>
                </IPP_LANGUAGES>
                <IPP_PRICE_CURRENCIES occurence="optional">
                    <PRICE_CURRENCY>EUR</PRICE_CURRENCY>
                </IPP_PRICE_CURRENCIES>
                <IPP_PRICE_TYPES>
                    <PRICE_TYPE>net_customer</PRICE_TYPE>
                </IPP_PRICE_TYPES>
                <IPP_AUTHENTIFICATION_INFO>
                    <AUTHENTIFICATION>
                        <LOGIN>EXTERNAL834646</LOGIN>
                    </AUTHENTIFICATION>
                </IPP_AUTHENTIFICATION_INFO>
                <IPP_PARAM_DEFINITION occurence="mandatory">
                    <IPP_PARAM_NAME>JOBSHOP</IPP_PARAM_NAME>
                    <IPP_PARAM_DESCR>customer job-shop</IPP_PARAM_DESCR>
                </IPP_PARAM_DEFINITION>
            </IPP_OUTBOUND_PARAMS>
            <IPP_URI>https://config.mymarket.com</IPP_URI>
        </IPP_OUTBOUND>
        <IPP_INBOUND>
            <IPP_INBOUND_FORMAT>OCI-4.0</IPP_INBOUND_FORMAT>
        </IPP_INBOUND>
    </IPP_OPERATION>
</IPP_DEFINITION>
```

Example "price request"

In the subsequent example an IPP application "price request" is defined with the following charcteristics:call and return are realized with the format OCI 4.0; one of three possible currencies has to be selected; net customer or net list prices can be returned (must be specified during the call); during the call the specified login name has to be used; the return of the requested price information is carried out in a garantied response time of 15 seconds at most.

```
<IPP_DEFINITION>
    <IPP_ID>8</IPP_ID>
    <IPP_TYPE>price_request</IPP_TYPE>
    <IPP_DESCR>Realtime Prices</IPP_DESCR>
    <IPP_OPERATION>
        <IPP_OPERATION_ID>1</IPP_OPERATION_ID>
        <IPP_OPERATION_TYPE>process</IPP_OPERATION_TYPE>
        <IPP_OUTBOUND>
            <IPP_OUTBOUND_FORMAT>OCI-4.0</IPP_OUTBOUND_FORMAT>
            <IPP_OUTBOUND_PARAMS>
                <IPP_PRICE_CURRENCIES occurence="mandatory">
                    <PRICE_CURRENCY>EUR</PRICE_CURRENCY>
                    <PRICE_CURRENCY>GBP</PRICE_CURRENCY>
                    <PRICE_CURRENCY>USD</PRICE_CURRENCY>
                </IPP_PRICE_CURRENCIES>
                <IPP_PRICE_TYPES occurence="mandatory">
                    <PRICE_TYPE>net_customer</PRICE_TYPE>
                    <PRICE_TYPE>net_list</PRICE_TYPE>
                </IPP_PRICE_TYPES>
                <IPP_AUTHENTIFICATION_INFO>
                    <AUTHENTIFICATION>
                        <LOGIN>EXTERNAL834646</LOGIN>
                    </AUTHENTIFICATION>
                </IPP_AUTHENTIFICATION_INFO>
            </IPP_OUTBOUND_PARAMS>
            <IPP_URI>https://pricing.mymarket.com</IPP_URI>
        </IPP_OUTBOUND>
        <IPP_INBOUND>
            <IPP_INBOUND_FORMAT>OCI-4.0</IPP_INBOUND_FORMAT>
            <IPP_RESPONSE_TIME>PT15S</IPP_RESPONSE_TIME>
        </IPP_INBOUND>
    </IPP_OPERATION>
</IPP_DEFINITION>
```

Example "request for quotation"

In the subsequent example an IPP application "request for quotation" is defined with the following charcteristics:return is realized with the format openTRANS 1.0; the one of three possible currencies has to be selected; net customer or net list prices can be returned (must be specified during the call); during the call the specified login name has to be used; the return of the requested price information is carried out in a garantied response time of 15 seconds at most.

```
<IPP_DEFINITION>
    <IPP_ID>31</IPP_ID>
    <IPP_TYPE>rfq</IPP_TYPE>
    <IPP_DESCR>Get quotations here, 24/7!</IPP_DESCR>
    <IPP_OPERATION>
        <IPP_OPERATION_ID>1</IPP_OPERATION_ID>
        <IPP_OPERATION_TYPE>process</IPP_OPERATION_TYPE>
        <IPP_OUTBOUND>
            <IPP_OUTBOUND_FORMAT>OPENTRANS-1.0</IPP_OUTBOUND_FORMAT>
            <IPP_OUTBOUND_PARAMS>
                <IPP_LANGUAGES occurence="mandatory">
                    <LANGUAGE>deu</LANGUAGE>
                    <LANGUAGE>eng</LANGUAGE>
                </IPP_LANGUAGES>
                <IPP_PRICE_CURRENCIES occurence="mandatory">
                    <PRICE_CURRENCY>EUR</PRICE_CURRENCY>
                    <PRICE_CURRENCY>GBP</PRICE_CURRENCY>
                    <PRICE_CURRENCY>USD</PRICE_CURRENCY>
                </IPP_PRICE_CURRENCIES>
                <IPP_AUTHENTIFICATION_INFO>
                    <AUTHENTIFICATION>
                        <LOGIN>EXTERNAL834646</LOGIN>
                    </AUTHENTIFICATION>
                </IPP_AUTHENTIFICATION_INFO>
            </IPP_OUTBOUND_PARAMS>
            <IPP_URI>https://quoting.mymarket.com</IPP_URI>
        </IPP_OUTBOUND>
        <IPP_INBOUND>
            <IPP_INBOUND_FORMAT>OPENTRANS-1.0</IPP_INBOUND_FORMAT>
            <IPP_RESPONSE_TIME>P10D</IPP_RESPONSE_TIME>
        </IPP_INBOUND>
        <IPP_INBOUND>
            <IPP_INBOUND_FORMAT>fax</IPP_INBOUND_FORMAT>
            <IPP_RESPONSE_TIME>P10D</IPP_RESPONSE_TIME>
        </IPP_INBOUND>
    </IPP_OPERATION>
</IPP_DEFINITION>
```

IPP_OPERATOR_IDREF

(Reference to IPP provider)

This element provides a reference to the IPP provider. The reference must point to an existing **PARTY_ID**.

2005fd: New element

General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_DEFINITION	-	**dtSTRING**	250	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Coding standard	type	Optional	This attribute is used to state the coding standard to which the identifier (**PARTY_ID**) adheres. The most common coding standards are predefined. See also: **Predefined values for attribute "type"**	-	**dtSTRING**	250	-	1.2_fd

Predefined values for attribute "type"

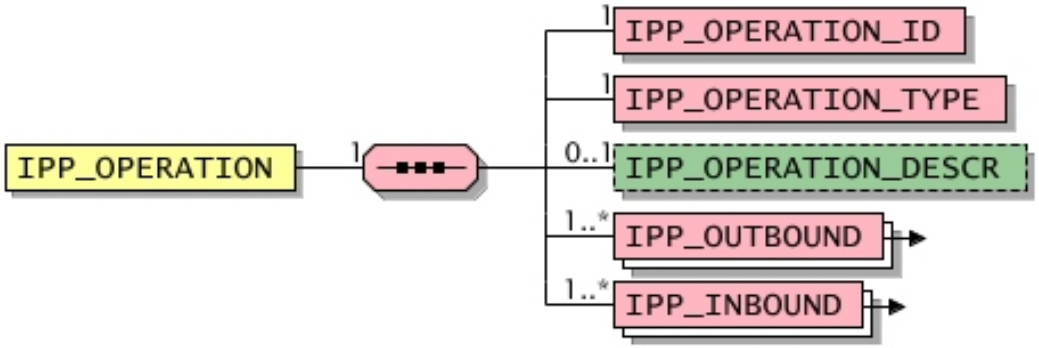
Designation	Attribute value	Explanation	l.chg. in ver.
Buyer-specific number	buyer_specific	Identification number defined by the buyer	-
Customer specific number	customer_specific	Identification number defined by the customer	2005fd
Dun & Bradstreet	duns	DUNS-Number (see also **http://dbuk.dnb.com/english/DataBase/duns.htm**)	-
Global location number	iln	Internationally called GLN (see GLN below)	-
Global location number	gln	Global Location Number GLN (see also **http://www.ean-int.org/locations.html**)	2005fd
Party-specific number	party_specific	Identification number defined by the respective party	2005fd
Supplier-specific number	supplier_specific	Identification number defined by the supplier	-
Other codification standard	User defined value, format: \w{1,250}	Identificator of codification standard. "\w{1,250}" means that the identificator of the codification standard has to be at least 1 chraracter long up to a maximum of 250 characters.	-

IPP_OPERATION

(IPP operation)

This element serves for specifying an IPP operation.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_DEFINITION	-	-	-	-	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP operation ID	**IPP_OPERATION_ID**	Mandatory	Single	Unique identifier of the IPP operation 2005fd: New element	-	**dtSTRING**	60	-	2005fd
IPP operation type	**IPP_OPERATION_TYPE**	Mandatory	Single	An IPP application can provide more than one operation. This element sets the operation. 2005fd: New element See also: **Permitted values for element IPP_OPERATION_TYPE**	-	**dtSTRING**	20	-	2005fd
Description of the IPP operation	**IPP_OPERATION_DES-CR**	Optional	Single	This element is used to describe the IPP operation.	-	**dtML-STRING**	250	Yes	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP call	**IPP_OUTBOUND**	Mandatory	Multiple	Spezification of the IPP call 	-	-	-	-	2005fd
IPP return	**IPP_INBOUND**	Mandatory	Multiple	Spezification of the IPP return 	-	-	-	-	2005fd

Permitted values for element IPP_OPERATION_TYPE

Designation	Element value	Explanation	I.chg. in ver.
Create	create	IPP application "external catalog": jumps to the external website of the IPP provider to build up a product list vie user interaction (e.g. product search or product configuration)	2005fd
Process	process	The meaning depends on the type of the IPP application (see **IPP_TYPE**). IPP application "product inquiry": starts a product inquiry for a list of products. IPP application "price inquiry": starts a price inquiry for a list of products. IPP application "availability inquiry": starts an availability inquiry for a list of products. IPP application "request for quotation": starts a request for quotation for a list of products.	2005fd
Recreate	recreate	The meaning depends on the type of the IPP application (see **IPP_TYPE**). IPP application "external catalog": makes a copy of the (old) product list and creates out of that a new changeble product list on the external website.	2005fd
Show	show	The meaning depends on the type of the IPP application (see **IPP_TYPE**). IPP application "external catalog": shows a shopping basket on the exsternal system (may include status information). IPP application "request for quotation": shows the status of a started request for quotation on the external system.	2005fd

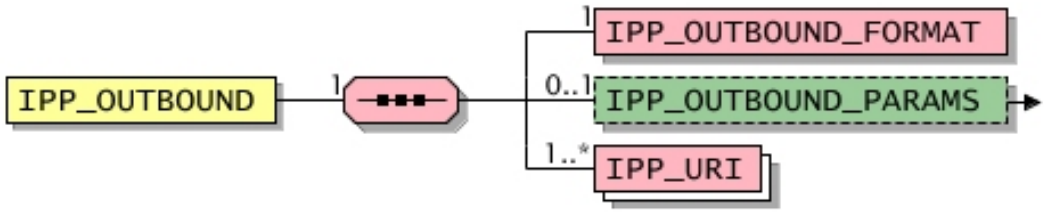
Example
see example for element **IPP_DEFINITION , Beispiel 1**

IPP_OUTBOUND

(IPP call)

This element contains information about the exchange format used for the IPP call and the exchanged parameter.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_OPERATION	-	-	-	-	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Exchange format	**IPP_OUTBOUND_FORMAT**	Mandatory	Single	Exchange format used for implementing the IPP operation, e.g., OCI 4.0 (Open Catalog Interface) 2005fd: New element See also: **Predefined values for element IPP_OUTBOUND_FORMAT**	-	**dtSTRING**	50	-	2005fd
IPP input parameters	**IPP_OUTBOUND_PARAMS**	Optional	Single	List of input parameters and their allowed values	-	-	-	-	2005
IPP operation URL	**IPP_URI**	Mandatory	Multiple	Calling address of the IPP operation 2005fd: New element	-	**dtMLSTRING**	255	Yes	2005fd

Predefined values for element IPP_OUTBOUND_FORMAT

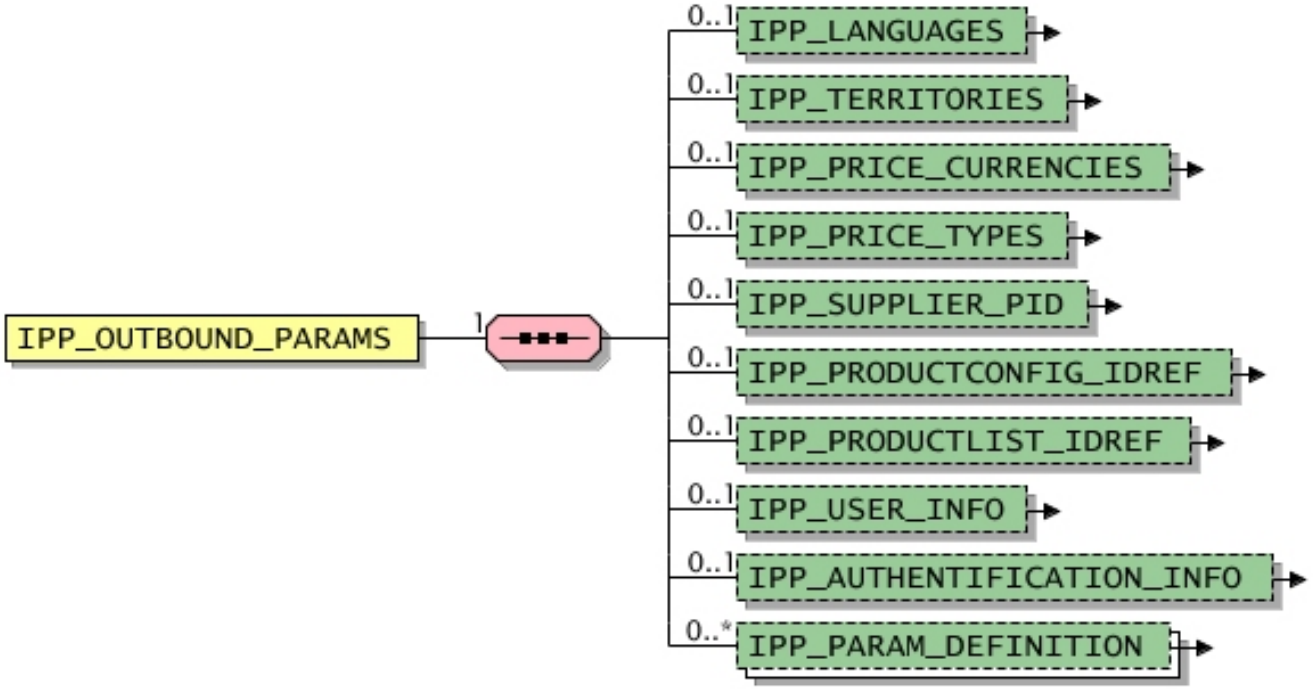
Designation	Element value	Explanation	l.chg. in ver.
BMEcat	BMECAT-2005	Use of the exchange format BMEcat 2005. Attention: The needed document types are not specified yet; they may be available in future versions	2005fd
cXML	CXML-x.y.zzz	Use of the exchange format cXML by Ariba (e.g., CXML-1.2.011; see also **http://www.cxml.org**)	2005fd
cXML	OCI-x.yZ	Use of the exchange format OCI (Open Catalog Interface) by SAP (e.g., OCI-2.0B oder OCI-4.0; see also **http://help.sap.com/saphelp_crm20c/helpdata/en/0F/F2573901F0FE7CE10000000A114084/frameset.htm**)	2005fd
openTRANS	OPENTRANS-x.y	Use of the exchange openTRANS (e.g., OPENTRANS-1.0; see also **www.opentrans.org**) especially for the exchange of a quotation (see also **IPP_TYPE =rfq**))	2005fd
Other exchange format	User defined value, format: [\w\-\.]{1,50}	All other exchange formats not covered here shoul be described the same way: Name of the format in capital letters, ein hyphen and version with majorversion.minorversion(s) e.g. NAME-3.0. The combination of name and version information must not be empty or longer than 50 characters.	2005fd

IPP_OUTBOUND_PARAMS

(IPP input parameters)

This element contains a list of input parameters that control the IPP application.

2005fd: New element
2005: The sub-element **IPP_CLASSIFICATION_INFO** was removed.



General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_OUTBOUND	-	-	-	-	2005

Elements

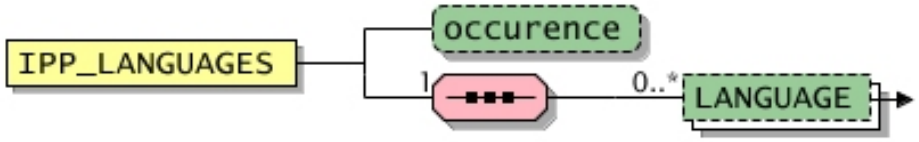
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP languages	**IPP_LANGUAGES - occurence**	Optional	Single	List of languages that are supported by the IPP application. 	-	-	-	-	2005fd
IPP countries and regions	**IPP_TERRITORIES - occurence**	Optional	Single	List of languages that are supported by the IPP application 	-	-	-	-	2005fd
IPP currencies	**IPP_PRICE_CURRENCIES - occurence**	Optional	Single	List of currencies that are supported by the IPP application. 	-	-	-	-	2005fd
IPP price types	**IPP_PRICE_TYPES - occurence**	Optional	Single	List of price types that are supported by the IPP application. 	-	-	-	-	2005fd
IPP product ID	**IPP_SUPPLIER_PID - occurence**	Optional	Single	Product identifier as input for the IPP application 	-	-	-	-	2005fd
Reference to an IPP product configuration	**IPP_PRODUCTCONFIG_IDREF - occurence**	Optional	Single	Reference to the unique identifier of a product configuration that is input for the IPP application. 	-	-	-	-	2005fd
Reference to an IPP shopping cart	**IPP_PRODUCTLIST_IDREF - occurence**	Optional	Single	Specification if and how identifiers of product lists are used with an IPP application call. 	-	-	-	-	2005fd
IPP user information	**IPP_USER_INFO - occurence**	Optional	Single	Specification if and how user information are used with an IPP application call. 	-	-	-	-	2005fd
IPP authentification information	**IPP_AUTHENTIFICATION_INFO - occurence**	Optional	Single	Specification if and how authentification information are used with an IPP application call. 	-	-	-	-	2005fd
Other IPP input parameters	**IPP_PARAM_DEFINITION - occurence**	Optional	Multiple	Specification if and how additional parameters have to be used in the IPP application 	-	-	-	-	2005fd

IPP_LANGUAGES

(IPP languages)

This element contains a list of languages that are supported by the IPP application.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

Designation	Attribute value	Explanation	I.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Language	**LANGUAGE** **- default**	Optional	Multiple	Specification of used languages, especially the default language of all language-dependent information	-	**dtLANG**	-	-	-

LANGUAGE

(Language)

This element specifies the used languages, especially the default language of all language-dependent information.

Single-langual catalogs: This element contains the used language. If the default-attribute is set, then it is not necessary to name the language in all elements that contain language-dependent information (default language).

Multi-lingual catalogs: This element must be used to specify each language that occurs in the document, therefore the element appears more than once. If the default-attribute is set for the most frequently or always used language, then it is not necessary to name for all language-dependent information this language (default language); it is sufficient to mark information in other languages.

General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_LANGUAGES	-	**dtLANG**	-	-	-

Attributes

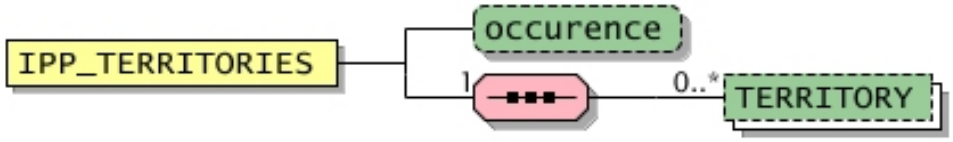
Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Default flag	default	Optional	This element determines the default language of all language-dependent information in the document. * 2005fd: New attribute	-	**dtBOO-LEAN**	-	-	2005fd

IPP_TERRITORIES

(IPP countries and regions)

This element contais a list of languages that are supported by the IPP application.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

Designation	Attribute value	Explanation	I.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

Elements

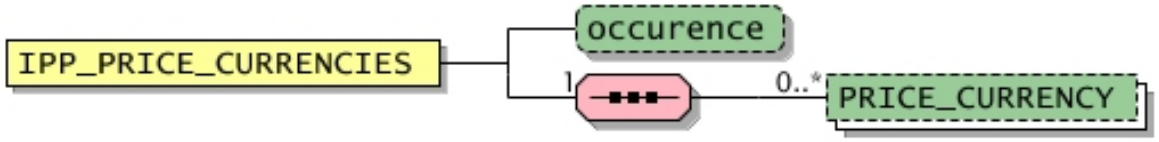
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Territory	**TERRITORY**	Optional	Multiple	Territory (i.e. country, state, region) coded according to ISO 3166	-	**dtCOUN-TRIES**	-	-	1.2_fd

IPP_PRICE_CURRENCIES

(IPP currencies)

This element contains a list of currencies that are supported by the IPP application.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

Designation	Attribute value	Explanation	I.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

Elements

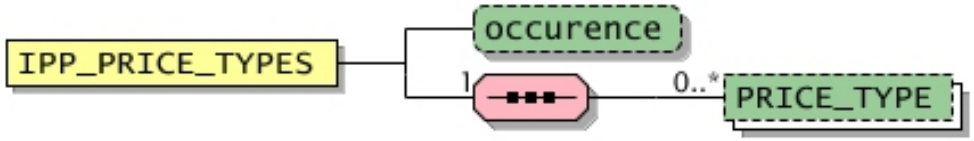
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Price currency	**PRICE_CURRENCY**	Optional	Multiple	Currency of the price If nothing is specified in this field, the currency defined in the document header (**HEADER**) in the element **CURRENCY** is used for all prices.	-	**dtCUR-RENCIES**	-	-	-

IPP_PRICE_TYPES

(IPP price types)

This element contains a list of price types that are supported by the IPP application.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

Designation	Attribute value	Explanation	I.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Price type	**PRICE_TYPE**	Optional	Multiple	This element determines the default price type for all products. The default price type can be replaced (or set) on the product level by the **PRODUCT_PRICE -->price_type** attribute.  2005fd: New element See also: **Predefined values for element PRICE_TYPE**	-	**dtSTRING**	20	-	2005fd

Predefined values for element PRICE_TYPE

Designation	Element value	Explanation	l.chg. in ver.
List price	gros_list	(Purchasing) list price including sales tax	-
Customer price	net_customer	Customer-specific end price excluding sales tax	-
Price for express delivery	net_customer_exp	Customer-specific end price for express delivery excluding sales tax  This price type is not clearly defined enough. If it is to be used regardless, the supplier and the customer must clarify the exact meaning of the price.	-
List price	net_list	(Purchasing) list price excluding sales tax	-
Nonbinding recommended price	nrp	Nonbinding recommended (retail) price	1.2_fd
Price on request	on_request	The price is not given and has to be requested.	2005fd
User-defined price type	User defined value, format: udp_\w{1,16}	Any other user-defined prices with own price types are allowed to be transferred. These types must then have a type description beginning with "udp". User-defined types are likewise only allowed to be specified once per article. Example: udp_aircargo_price  It is essential to clarify beforehand whether or not the target systems are able to process user-defined price types. Furthermore, the exact meaning of the prices must be clarified between the supplier and the customer.	-

IPP_SUPPLIER_PID

(IPP product ID)

This element contains the identifier ID which is input for the IPP application.

2005fd: New element

General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

Designation	Attribute value	Explanation	l.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

IPP_PRODUCTCONFIG_IDREF

(Reference to an IPP product configuration)

This element determines if and how identifiers of product configurations have to be used when calling an IPP application. This element must be empty and the occurence-attribute specifies, whether providing such an identifier is optional or mandatory.

2005fd: New element

General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

Designation	Attribute value	Explanation	l.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

IPP_PRODUCTLIST_IDREF

(Reference to an IPP shopping cart)

This element specifies if and how identifiers of product lists are used with an IPP application call. The element has to be empty and the the attribute "occurance" states wether the transfer of this identifier is mandatory or optional.

2005fd: New element

General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

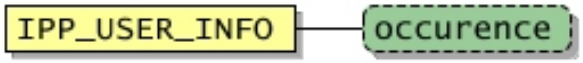
Designation	Attribute value	Explanation	l.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

IPP_USER_INFO

(IPP user information)

This element specifies if and how user information are used with an IPP application call. Two cases have to be distinguished: If there are user information included in this element these user information have to be transfered during the IPP application call. If the element is empty the attribute "occurance" states wether the user information is mandatory or optional in the IPP call but not which are the user information.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

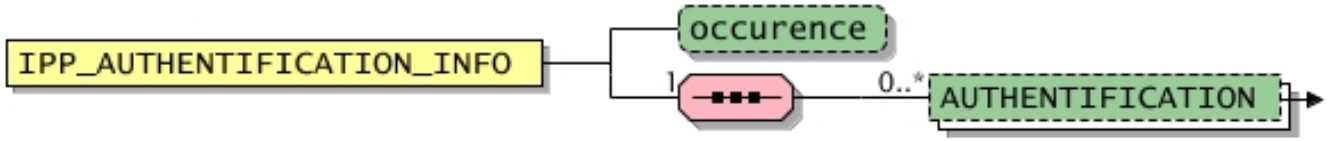
Designation	Attribute value	Explanation	l.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

IPP_AUTHENTIFICATION_INFO

(IPP authentification information)

This element specifies if and how authentification information are used with an IPP application call. Two cases have to be distinguished: If there are authentification information included in this element these authentification information have to be transfered during the IPP application call. If the element is empty the attribute "occurance" states wether the authentification information is mandatory or optional in the IPP call but not which are the authentification information.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_OUTBOUND_PARAMS	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

Designation	Attribute value	Explanation	I.chg. in ver.
Optional	optional	Optional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

Elements

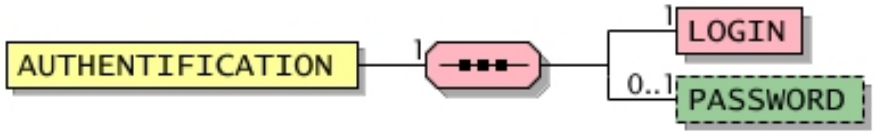
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Authentification information	**AUTHENTIFICATION**	Optional	Multiple	Authentification information	-	-	-	-	2005fd

AUTHENTIFICATION

(Authentification information)

This element contains authentification information that is forwarded to the respective application.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_AUTHENTIFICATION_INFO	-	-	-	-	2005fd

Elements

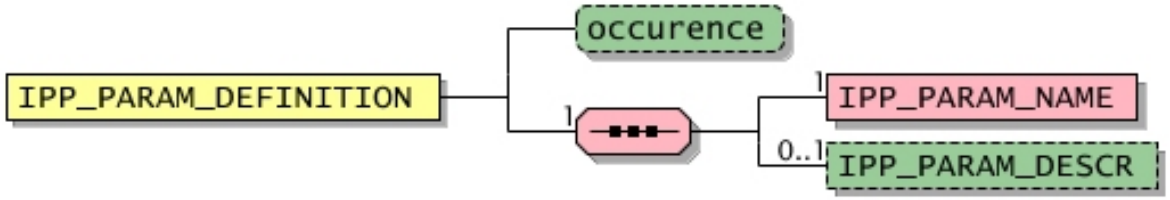
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Login	**LOGIN**	Mandatory	Single	Login as part of the authentification 2005fd: New element	-	**dtSTRING**	60	-	2005fd
Password	**PASSWORD**	Optional	Single	Password for the login. 2005fd: New element	-	**dtSTRING**	20	-	2005fd

IPP_PARAM_DEFINITION

(Other IPP input parameters)

This element is used to define if and how additional parameters have to be used in the IPP application.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_INBOUND_PARAMS, **IPP_OUTBOUND_PARAMS**	-	-	-	-	2005fd

Attributes

Designation	Attribute name	Mandatory/ optional	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Occurence	occurence	Optional	Declares whether the parameter is optional or mandatory. See also: **Permitted values for attribute "occurence"**	-	**dtSTRING**	20	-	2005fd

Permitted values for attribute "occurence"

Designation	Attribute value	Explanation	l.chg. in ver.
Optional	optional	Otional occurence	2005fd
Mandatory	mandatory	Mandatory occurence	2005fd

Elements

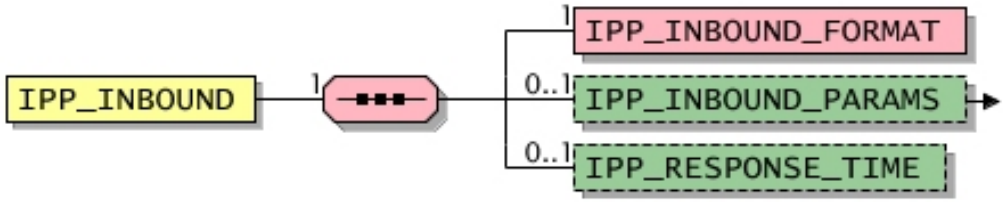
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Parameter name	**IPP_PARAM_NAME**	Mandatory	Single	Name of the parameter  2005fd: New element	-	**dtSTRING**	100	-	2005fd
Description of the parameter	**IPP_PARAM_DESCR**	Optional	Single	This element is used to describe the parameter.  2005fd: New element	-	**dtML-STRING**	250	Yes	2005fd

IPP_INBOUND

(IPP return)

This element contains information about the exchange format used for the IPP return and the exchanged parameter.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
IPP_OPERATION	-	-	-	-	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Exchange format	**IPP_INBOUND_FORMAT**	Mandatory	Single	Exchange format used for implementing the IPP operation, e.g., OCI 4.0 (Open Catalog Interface) 2005fd: New element See also: **Predefined values for element IPP_INBOUND_FORMAT**	-	**dtSTRING**	50	-	2005fd
IPP output parameters	**IPP_INBOUND_PARAMS**	Optional	Single	List of output parameters and their allowed values of the IPP application	-	-	-	-	2005fd
Response time	**IPP_RESPONSE_TIME**	Optional	Single	Guaranteed response time of the IPP application. If no response is received after this time beginning with the IPP initiation, the transaction has failed. 2005fd: New element	-	**dtDURA-TION**	-	-	2005fd

Predefined values for element IPP_INBOUND_FORMAT

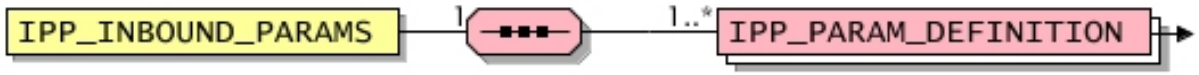
Designation	Element value	Explanation	l.chg. in ver.
BMEcat	BMECAT-2005	Use of the exchange format BMEcat 2005. Attention: The needed document types are not specified yet; they may be available in future versions	2005fd
cXML	CXML-x.y.zzz	Use of the exchange format cXML by Ariba (e.g., CXML-1.2.011; see also **http://www.cxml.org**)	2005fd
cXML	OCI-x.yZ	Use of the exchange format OCI (Open Catalog Interface) by SAP (e.g., OCI-2.0B oder OCI-4.0; see also **http://help.sap.com/saphelp_crm20c/helpdata/en/0F/F2573901F0FE7CE10000000A114084/frameset.htm**)	2005fd
openTRANS	OPENTRANS-x.y	Use of the exchange openTRANS (e.g., OPENTRANS-1.0; see also **www.opentrans.org**) especially for the exchange of a quotation (see also **IPP_TYPE =rfq**))	2005fd
e-mail	email	Usage of e-mail transfer for the IPP return; the e-mail address has to be agreed upon bilateral.	2005fd
fax	fax	Usage of fax for the IPP return; the fax number has to be agreed upon bilateral.	2005fd
Post delivery	mail	Usage of postal letter for the IPP return; the postal address has to be agreed upon bilateral.	2005fd
Other exchange format	User defined value, format: [\w\-\.]{1,50}	All other exchange formats not covered here shoul be described the same way: Name of the format in capital letters, ein hyphen and version with majorversion.minorversion(s) e.g. NAME-3.0. The combination of name and version information must not be empty or longer than 50 characters.	2005fd

IPP_INBOUND_PARAMS

(IPP output parameters)

This element contains a list of output parameters that are received from the IPP application.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_INBOUND	-	-	-	-	2005fd

Elements

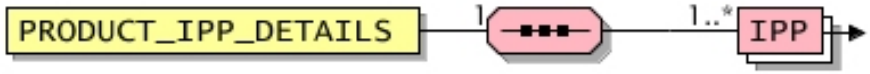
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Other IPP input parameters	**IPP_PARAM_DEFINITION** **- occurence**	Mandatory	Multiple	Specification if and how additional parameters have to be used in the IPP application	-	-	-	-	2005fd

PRODUCT_IPP_DETAILS

(IPP details)

This element contains product-specific information on IPP applications.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
-	-	-	-	-	2005fd

Elements

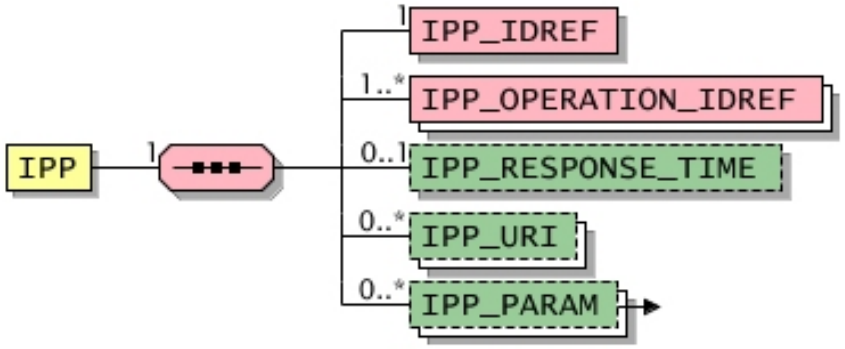
Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP application	**IPP**	Mandatory	Multiple	Is used to overwrite and particularise specifications of an IPP application which have been made in the header in the element **IPP_DEFINITION** with new specifications on product level.	-	-	-	-	2005fd

IPP

(IPP application)

This element is used to overwrite and particularise specifications of an IPP application which have been made in the header in the element **IPP_DEFINITION** with new specifications on product level.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
PRODUCT_IPP_DETAILS	-	-	-	-	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Referenz to an IPP application	**IPP_IDREF**	Mandatory	Single	Reference to the unique identifier of an IPP application. The reference has to link to an **IPP_ID** in the element **IPP_DEFINITION**. 2005fd: New element	-	**dtSTRING**	60	-	2005fd
Referenz to an IPP operation	**IPP_OPERATION_IDREF**	Mandatory	Multiple	Specification of one or more Ipp operations. The reference has to link to an **IPP_OPERATION_ID** in the element **IPP_DEFINITION**. 2005fd: New element	-	**dtSTRING**	60	-	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	I.chg. in ver.
Response time	**IPP_RESPONSE_TIME**	Optional	Single	Guaranteed response time of the IPP application. If no response is received after this time beginning with the IPP initiation, the transaction has failed.  2005fd: New element	-	**dtDURA-TION**	-	-	2005fd
IPP operation URL	**IPP_URI**	Optional	Multiple	Calling address of the IPP operation  2005fd: New element	-	**dtML-STRING**	255	Yes	2005fd
IPP transfered parame-ter	**IPP_PARAM**	Optional	Multiple	Paramter that has to be transferred in the IPP call 	-	-	-	-	2005fd

Example

In this example, a previously defined IPP is assigned to a product, hence the **PRODUCT_IPP_DETAILS** element appears in the context of **PRODUCT**. We use the same IPP that was already defined in the example "external catalog" **IPP_DEFINITION , Beispiel 1**. The assignment is realized with the idenitifiers of the IPP application and the IPP operation (here: process). In addition, we assign the value 'true' to the user-defined parameter JOBSHOP. This value has to be transfered in the call of the external catalog, depending on the transaction protocol; in this case, the value has to be inserted in the respectiveOCI message.

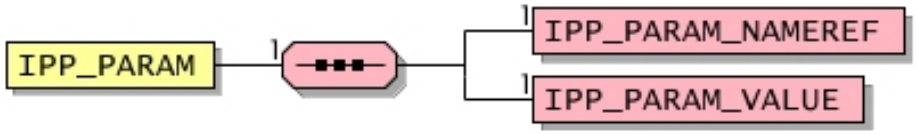
```
<PRODUCT_IPP_DETAILS>
    <IPP>
        <IPP_IDREF>1</IPP_IDREF>
        <IPP_OPERATION_IDREF>1</IPP_OPERATION_IDREF>
        <IPP_PARAM>
            <IPP_PARAM_NAMEREF>JOBSHOP</IPP_PARAM_NAMEREF>
            <IPP_PARAM_VALUE>true</IPP_PARAM_VALUE>
        </IPP_PARAM>
    </IPP>
</PRODUCT_IPP_DETAILS>
```

IPP_PARAM

(IPP transfered parameter)

This element contains a paramter which has to be transferred in the IPP call.

2005fd: New element



General

Used in	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP	-	-	-	-	2005fd

Elements

Designation	Element name	Mandatory/ Optional	Single/ Multiple	Explanation	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
Reference to IPP parameter	**IPP_PARAM_NAMEREF**	Mandatory	Single	This element references to the specification of a parameter in a definition of an IPP application (**IPP_DEFINITION**). 2005fd: New element	-	**dtSTRING**	100	-	2005fd
IPP parameter value	**IPP_PARAM_VALUE**	Mandatory	Single	This element contains the value of an IPP parameter. 2005fd: New element	-	**dtSTRING**	3000	-	2005fd

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Annex

Basic data types

Designation	Data type name	Explanation	Underlying standards	Format	l.chg. in ver.
Boolean value	dtBOOLEAN	The values "true" or "false" can be entered, case-insensitive, i.e. regardless of capital or small letters. **Examples:** TRUE or true or True	Leaned on: XML Schema Part 2: Data types Second Edition W3C Recommendation 28 October 2004 Data type **boolean** **http://www.w3.org/TR/xmlschema-2/#boolean**		-
Duration	dtDURATION	Duration of time Coded as follows: • P: Period (is mandatory) • nY: n Years • nM: n Months • nD: n Days • T: Delimiter, required for hours, minutes and seconds • nH: n Hours • nM: n Minutes • nS: n Seconds  2005fd: New data type **Examples:** P5Y P5Y2M10D P5Y2M10DT15H PT15H P5Y	XML Schema Part 2: Data types Second Edition W3C Recommendation 28 October 2004 Data type **duration** **http://www.w3.org/TR/xmlschema-2/#duration** see alos: ISO 8601: Representations of dates and times	PnYnMnDTn-HnMnS	2005fd

Designation	Data type name	Explanation	Underlying standards	Format	l.chg. in ver.

Multilingual string	dtMLSTRING	This data type differs from the **dtSTRING** data type only in the additional "lang" attribute, which is added to the respective element. The "lang" attribute specifies the language of text used in the element. It has to be coded according to the **dtLANG** data type. This new data type allows multilingual catalogs, thus multilangual content (i.e. texts) can be transferred in a single BMEcat document (see also: **Chapter: Multilingual Catalog Documents**). In a multilingual document, all language-dependent elements of cardinality "single" may occur multiple, though the values of the "lang" attribute must be different.
		
		Examples:
		The short description in the **DESCRIPTION_SHORT** element is provided both in German and English . Note that the "lang" attribute in the second **PRODUCT_DETAILS** element is not necessary, if the default language of the catalog (**CATALOG**) has been set to German.
		
		`<PRODUCT_DETAILS>`
		`  <DESCRIPTION_SHORT lang="deu">Schraubendreher`
		`</DESCRIPTION_SHORT>`
		`  <DESCRIPTION_SHORT lang="eng">Screw driver</DESCRIPTION_SHORT>`
		`</PRODUCT_DETAILS>`
		`...`
		`<PRODUCT_DETAILS>`
		`  <DESCRIPTION_SHORT>Bohrer</DESCRIPTION_SHORT>`
		`  <DESCRIPTION_SHORT lang="eng">Drill</DESCRIPTION_SHORT>`
		`</PRODUCT_DETAILS>`
					-

Character string	dtSTRING	Character string according to the encoding standard (see also **Chapter: Coding in XML**) **Example:** Screw driver, yellow			-

Enumeration data types

Designation	Data type name	Explanation	Underlying standards	Format	l.chg. in ver.
Country codes	dtCOUNTRIES	Country codes to indicate areas of availability (**TERRITORY**). The country subdivision codes can be used to subdivide country codes further, for example into regions. **Examples:** DE (Germany); US (USA) DE-NW (North-Rhine Westphalia in Germany) DK-025 (Roskilde Administrative District in Denmark)	ISO 3166-1 Country codes **http://www.iso.org/iso/en/prods-services/iso3166ma/index.html**	6 characters	-
Currency codes	dtCURRENCIES	Currency codes to indicate currencies **Examples:** EUR (Euro); USD (US Dollar)	ISO 4217:1995 Currency codes [ISO-4217:1995] **http://www.unece.org/cefact/recommendations/rec09/rec09.zip** Since 1997 the code "EUR" instead of "XEU" has been in place for Euro. This is proscribed as the official code ISO 4217:2000. It is therefore urgently recommended that "EUR" be used as code for Euro.	3 characters	-
Language codes	dtLANG	Language codes to indicate the language used in texts or pictures **Example:** deu (German)	ISO 639-2:1998 Language code [ISO-639-2:1998]	3 characters	-

History of changes Version 2005fd

Change	Description of changes
AUTHENTIFICATION	New element
dtDURATION	New data type
IPP	New element
IPP_AUTHENTIFICATION_INFO	New element
IPP_DEFINITION	New element
IPP_DEFINITIONS	New element
IPP_ID	New element
IPP_IDREF	New element
IPP_INBOUND	New element
IPP_INBOUND_FORMAT	New element
IPP_INBOUND_PARAMS	New element
IPP_LANGUAGES	New element
IPP_OPERATION	New element
IPP_OPERATION_ID	New element
IPP_OPERATION_IDREF	New element
IPP_OPERATION_TYPE	New element
IPP_OPERATOR_IDREF	New element
IPP_OUTBOUND	New element
IPP_OUTBOUND_FORMAT	New element
IPP_OUTBOUND_PARAMS	New element
IPP_PARAM	New element
IPP_PARAM_DEFINITION	New element
IPP_PARAM_DESCR	New element
IPP_PARAM_NAME	New element
IPP_PARAM_NAMEREF	New element

Change	Description of changes
IPP_PARAM_VALUE	New element
IPP_PRICE_CURRENCIES	New element
IPP_PRICE_TYPES	New element
IPP_PRODUCTCONFIG_IDREF	New element
IPP_PRODUCTLIST_IDREF	New element
IPP_RESPONSE_TIME	New element
IPP_SUPPLIER_PID	New element
IPP_TERRITORIES	New element
IPP_TYPE	New element
IPP_URI	New element
IPP_USER_INFO	New element
LANGUAGE -->default	New attribute
LOGIN	New element
PASSWORD	New element
PRICE_TYPE	New element
PRICE_TYPE =on_request	New value
PRODUCT_IPP_DETAILS	New element

History of changes Version 2005

Change	Description of changes
IPP_OUTBOUND_PARAMS	The sub-element **IPP_CLASSIFICATION_INFO** was removed.

Overview of elements - order by appearance

Amount	Element name	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
1	|_ **IPP_DEFINITIONS**	-	-	-	-	2005fd
1	| |_ SEQUENCE	-	-	-	-	-
1..*	| | |_ **IPP_DEFINITION**	-	-	-	-	2005fd
1	| | | |_ SEQUENCE	-	-	-	-	-
1	| | | | |_ **IPP_ID**	-	**dtSTRING**	60	-	2005fd
1	| | | | |_ **IPP_TYPE**	-	**dtSTRING**	20	-	2005fd
0..1	| | | | |_ **IPP_OPERATOR_IDREF**	-	**dtSTRING**	250	-	2005fd
0..1	| | | | |_ **IPP_DESCR**	-	**dtMLSTRING**	250	Yes	2005fd
1..*	| | | | |_ **IPP_OPERATION**	-	-	-	-	2005fd
1	| | | | | |_ SEQUENCE	-	-	-	-	-
1	| | | | | | |_ **IPP_OPERATION_ID**	-	**dtSTRING**	60	-	2005fd
1	| | | | | | |_ **IPP_OPERATION_TYPE**	-	**dtSTRING**	20	-	2005fd
0..1	| | | | | | |_ **IPP_OPERATION_DESCR**	-	**dtMLSTRING**	250	Yes	2005fd
1..*	| | | | | | |_ **IPP_OUTBOUND**	-	-	-	-	2005fd
1	| | | | | | | |_ SEQUENCE	-	-	-	-	-
1	| | | | | | | | |_ **IPP_OUTBOUND_FORMAT**	-	**dtSTRING**	50	-	2005fd
0..1	| | | | | | | | |_ **IPP_OUTBOUND_PARAMS**	-	-	-	-	2005
1	| | | | | | | | | |_ SEQUENCE	-	-	-	-	-
0..1	| | | | | | | | | | |_ **IPP_LANGUAGES**	-	-	-	-	2005fd
1	| | | | | | | | | | | |_ SEQUENCE	-	-	-	-	-
0..*	| | | | | | | | | | | | |_ **LANGUAGE**	-	**dtLANG**	-	-	-
0..1	| | | | | | | | | | |_ **IPP_TERRITORIES**	-	-	-	-	2005fd
1	| | | | | | | | | | | |_ SEQUENCE	-	-	-	-	-
0..*	| | | | | | | | | | | | |_ **TERRITORY**	-	**dtCOUNTRIES**	-	-	1.2_fd
0..1	| | | | | | | | | | |_ **IPP_PRICE_CURRENCIES**	-	-	-	-	2005fd
1	| | | | | | | | | | | |_ SEQUENCE	-	-	-	-	-
0..*	| | | | | | | | | | | | |_ **PRICE_CURRENCY**	-	**dtCURRENCIES**	-	-	-
0..1	| | | | | | | | | | |_ **IPP_PRICE_TYPES**	-	-	-	-	2005fd
1	| | | | | | | | | | | |_ SEQUENCE	-	-	-	-	-
0..*	| | | | | | | | | | | | |_ **PRICE_TYPE**	-	**dtSTRING**	20	-	2005fd
0..1	| | | | | | | | | | |_ **IPP_SUPPLIER_PID**	-	-	-	-	2005fd
0..1	| | | | | | | | | | |_ **IPP_PRODUCTCONFIG_IDREF**	-	-	-	-	2005fd
0..1	| | | | | | | | | | |_ **IPP_PRODUCTLIST_IDREF**	-	-	-	-	2005fd
0..1	| | | | | | | | | | |_ **IPP_USER_INFO**	-	-	-	-	2005fd
0..1	| | | | | | | | | | |_ **IPP_AUTHENTIFICATION_INFO**	-	-	-	-	2005fd
1	| | | | | | | | | | | |_ SEQUENCE	-	-	-	-	-
0..*	| | | | | | | | | | | | |_ **AUTHENTIFICATION**	-	-	-	-	2005fd
1	| | | | | | | | | | | | | |_ SEQUENCE	-	-	-	-	-
1	| | | | | | | | | | | | | | |_ **LOGIN**	-	**dtSTRING**	60	-	2005fd
0..1	| | | | | | | | | | | | | | |_ **PASSWORD**	-	**dtSTRING**	20	-	2005fd
0..*	| | | | | | | | | | | |_ **IPP_PARAM_DEFINITION**	-	-	-	-	2005fd
1	| | | | | | | | | | | |_ SEQUENCE	-	-	-	-	-
1	| | | | | | | | | | | | |_ **IPP_PARAM_NAME**	-	**dtSTRING**	100	-	2005fd
0..1	| | | | | | | | | | | | |_ **IPP_PARAM_DESCR**	-	**dtMLSTRING**	250	Yes	2005fd
1..*	| | | | | | | | |_ **IPP_URI**	-	**dtMLSTRING**	255	Yes	2005fd

Amount	Element name	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
1..*	| | | | | | |_ **IPP_INBOUND**	-	-	-	-	2005fd
1	| | | | | | | |_ SEQUENCE	-	-	-	-	-
1	| | | | | | | | |_ **IPP_INBOUND_FORMAT**	-	**dtSTRING**	50	-	2005fd
0..1	| | | | | | | | |_ **IPP_INBOUND_PARAMS**	-	-	-	-	2005fd
1	| | | | | | | | | |_ SEQUENCE	-	-	-	-	-
1..*	| | | | | | | | | | |_ **IPP_PARAM_DEFINITION**	-	-	-	-	2005fd
1	| | | | | | | | | | | |_ SEQUENCE	-	-	-	-	-
1	| | | | | | | | | | | | |_ **IPP_PARAM_NAME**	-	**dtSTRING**	100	-	2005fd
0..1	| | | | | | | | | | | | |_ **IPP_PARAM_DESCR**	-	**dtMLSTRING**	250	Yes	2005fd
0..1	| | | | | | | | | |_ **IPP_RESPONSE_TIME**	-	**dtDURATION**	-	-	2005fd
1	|_ **PRODUCT_IPP_DETAILS**	-	-	-	-	2005fd
1	| |_ SEQUENCE	-	-	-	-	-
1..*	| | |_ **IPP**	-	-	-	-	2005fd
1	| | | |_ SEQUENCE	-	-	-	-	-
1	| | | | |_ **IPP_IDREF**	-	**dtSTRING**	60	-	2005fd
1..*	| | | | |_ **IPP_OPERATION_IDREF**	-	**dtSTRING**	60	-	2005fd
0..1	| | | | |_ **IPP_RESPONSE_TIME**	-	**dtDURATION**	-	-	2005fd
0..*	| | | | |_ **IPP_URI**	-	**dtMLSTRING**	255	Yes	2005fd
0..*	| | | | |_ **IPP_PARAM**	-	-	-	-	2005fd
1	| | | | | |_ SEQUENCE	-	-	-	-	-
1	| | | | | | |_ **IPP_PARAM_NAMEREF**	-	**dtSTRING**	100	-	2005fd
1	| | | | | | |_ **IPP_PARAM_VALUE**	-	**dtSTRING**	3000	-	2005fd

Overview of elements - alphabetical order

Element name	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
AUTHENTIFICATION	-	-	-	-	2005fd
IPP	-	-	-	-	2005fd
IPP_AUTHENTIFICATION_INFO	-	-	-	-	2005fd
IPP_DEFINITION	-	-	-	-	2005fd
IPP_DEFINITIONS	-	-	-	-	2005fd
IPP_DESCR	-	**dtMLSTRING**	250	Yes	2005fd
IPP_ID	-	**dtSTRING**	60	-	2005fd
IPP_IDREF	-	**dtSTRING**	60	-	2005fd
IPP_INBOUND	-	-	-	-	2005fd
IPP_INBOUND_FORMAT	-	**dtSTRING**	50	-	2005fd
IPP_INBOUND_PARAMS	-	-	-	-	2005fd
IPP_LANGUAGES	-	-	-	-	2005fd
IPP_OPERATION	-	-	-	-	2005fd
IPP_OPERATION_DESCR	-	**dtMLSTRING**	250	Yes	2005fd
IPP_OPERATION_ID	-	**dtSTRING**	60	-	2005fd
IPP_OPERATION_IDREF	-	**dtSTRING**	60	-	2005fd
IPP_OPERATION_TYPE	-	**dtSTRING**	20	-	2005fd
IPP_OPERATOR_IDREF	-	**dtSTRING**	250	-	2005fd
IPP_OUTBOUND	-	-	-	-	2005fd
IPP_OUTBOUND_FORMAT	-	**dtSTRING**	50	-	2005fd
IPP_OUTBOUND_PARAMS	-	-	-	-	2005
IPP_PARAM	-	-	-	-	2005fd
IPP_PARAM_DEFINITION	-	-	-	-	2005fd
IPP_PARAM_DESCR	-	**dtMLSTRING**	250	Yes	2005fd
IPP_PARAM_NAME	-	**dtSTRING**	100	-	2005fd

Element name	Default value	Data type	Field length	Lang. specific	l.chg. in ver.
IPP_PARAM_NAMEREF	-	**dtSTRING**	100	-	2005fd
IPP_PARAM_VALUE	-	**dtSTRING**	3000	-	2005fd
IPP_PRICE_CURRENCIES	-	-	-	-	2005fd
IPP_PRICE_TYPES	-	-	-	-	2005fd
IPP_PRODUCTCONFIG_IDREF	-	-	-	-	2005fd
IPP_PRODUCTLIST_IDREF	-	-	-	-	2005fd
IPP_RESPONSE_TIME	-	**dtDURATION**	-	-	2005fd
IPP_SUPPLIER_PID	-	-	-	-	2005fd
IPP_TERRITORIES	-	-	-	-	2005fd
IPP_TYPE	-	**dtSTRING**	20	-	2005fd
IPP_URI	-	**dtMLSTRING**	255	Yes	2005fd
IPP_USER_INFO	-	-	-	-	2005fd
LANGUAGE	-	**dtLANG**	-	-	-
LOGIN	-	**dtSTRING**	60	-	2005fd
PASSWORD	-	**dtSTRING**	20	-	2005fd
PRICE_CURRENCY	-	**dtCURRENCIES**	-	-	-
PRICE_TYPE	-	**dtSTRING**	20	-	2005fd
PRODUCT_IPP_DETAILS	-	-	-	-	2005fd
TERRITORY	-	**dtCOUNTRIES**	-	-	1.2_fd