



# *Book Industry Communication*

## **BIC Web Services Standards**

### **Price and Availability Request and Response**

Version 1.2, 23 April 2009, corrected 5 May 2009

Re-issued with additional text describing CDF use cases, 18 July 2011

This document specifies in human-readable form the BIC web services Price and Availability Request formats and the “payload” for the corresponding Price and Availability Response formats.

Two separate formats are specified for Requests:

- an HTTP query format for use with implementations that use the basic HTTP protocol and HTTP GET method – sometimes referred to as the REST approach
- an XML format for use with both implementations that use either SOAP or the basic HTTP protocol and HTTP POST method.

The same Response payload format will apply to both basic HTTP and SOAP exchanges, but since a Request using the HTTP GET method may be more limited than a Request using the HTTP POST method, the response may use only a correspondingly limited subset of the content defined here.

The complete specification of the Price and Availability Request/Response web service includes two machine-readable resources that are to be used by implementers in conjunction with this document:

- a WSDL Definition for the SOAP protocol version of the web service
- an XML Schema for Requests and Response payloads in XML format.

It is strongly recommended that SOAP client implementations of this web service be constructed using the BIC WSDL Definitions as a starting point, as this will promote interoperability between SOAP client and server implementations. In some development environments it may be easier to implement a SOAP server without using the BIC WSDL Definitions, but in this case care must be taken to ensure that the WSDL Definitions that describe the actual implementation is functionally equivalent to the BIC WSDL Definitions.

NOTE – In the above and throughout this specification, "HTTP" is to be understood to mean "HTTP or HTTPS". HTTPS may be used where secure exchanges over the public internet are required.

#### **Business requirements**

The formats have been designed to handle the supply of price and availability information as a value-added service offered by wholesalers and distributors. The typical user of this service will generally be a bookseller, but occasionally a wholesaler referring a bookseller's enquiry on to the distributor.

The formats support a range of service levels suited to different types of business relationship between the the parties involved and different types of enquiry. A casual request over an insecure Internet connection for price and availability of a single product might trigger a minimal response indicating solely current availability and price if available. A routine enquiry between parties with a well-established trading relationship and using a secure connection might result in a much more detailed response including stock levels and discounts.

## **P&A integration with the CDF Business Model Use Case 1**

This web service can be used in the CDF (Consumer Direct Fulfilment) business model. For example an online bookstore might not hold any stock, instead choosing to list titles available from one or more wholesale suppliers. We recommend that the availability and lead-time shown on product pages is established using batch data exchange via FTP. When the shopping basket is displayed it can improve customer service by using this web service to confirm the current availability in real-time. The website may choose to do this on titles which were showing low stock holding on the last batch feed.

## **P&A integration with the CDF Business Model Use Case 2**

In the CDF business model the carriage cost to the consumer and the speed of delivery are critical factors. Online stores need to deliver to their customer as quickly as possible at the lowest cost. This web service can be used to decide which suppliers to place the order with. For example if one supplier has both lines of a two line order in stock but is offering a slightly lower discount it may be preferable to place the order with this supplier to achieve the best delivery time and offset the carriage cost of splitting the consumers order across two suppliers.

NOTE – We suggest that, where commercially permissible, implementations should always return the quantity available for the customer making the request to order (in the SupplyQuantity element of the response). It is permissible for implementations to cap the available stock figure at a value which is sensible for the typical level of trading expected for the customer – for example you might decide to cap this figure at a low level (99, say) for small customers while capping it at a higher level (9,999, say) for large wholesalers and major retailers. If a cap is put in place this should be agreed between trading partners.

## **Correction made March 2008**

Page 9 Response detail, line 8: In composite elements <SuccessorProductIdentifier> and <AlternativeProductIdentifier> the element containing the product number is <IDValue>.

## **Corrections and additions for Version 1.2 made September 2008**

General: Changes to examples consequent upon the changes listed below.

Page 4: HTTP Request line 13: New element <SupplierRegionCodes> added to support requests to aggregators to limit responses to suppliers located in specified regions (specified by a space-separated list of ISO country codes).

Page 5: Request header line 7: New composite <SupplierRegionsCoded> added to support requests to aggregators to limit responses to suppliers located in specified regions (specified by a space-separated list of ISO country codes).

Page 7: Response header line 7: New composite <SupplierRegionsCoded> added to support requests to aggregators to limit responses to suppliers located in specified regions.

Page 9: Response detail line 8: detailed specification of SupplierPriceAvailability moved to separate table.

Supplier price availability line 1: New element <LastUpdated> added to support inclusion of a date or date and time to indicate when the price and availability information was last updated by the supplier.

Supplier price availability line 2: Usage of <SupplierIdentifier> clarified in description.

Supplier price availability line 3: New composite <SupplierLocation> added to enable the response to indicate the location(s) from which a supplier would be able to ship an item.

Page 10: Supplier price availability line 7: New composite <AvailabilityCoded> added to enable the availability of a product to be specified using a BIC supplier item availability code list with option additional publisher availability information (code values and dates).

Supplier price availability line 9: New element <SuccessorProductForm> added, using ONIX codelist 150.

Supplier price availability line 11: New element <AlternativeProductForm> added, using ONIX codelist 150.

Supplier price availability line 16: New element <DiscountCoded> added to support use of proprietary and other discount coding schemes defined in ONIX codelist 100.

Page 11: Response example: correction to include <SupplierPriceAvailability>.

Page 12: Table 1 added, containing the new BIC supplier item availability code list.

**Correction to Version 1.2 made May 2009**

Page 5 Request header line 3: element name corrected to 'IDValue' for consistency with the example, the XML schema and other BIC web service specifications.

Page 7 Response header line 4: element name corrected to 'IDValue' for consistency with the example, the XML schema and other BIC web service specifications.

## PRICE AND AVAILABILITY REQUEST

### Requests using the HTTP protocol and the HTTP GET method

Requests using the HTTP protocol and the HTTP GET method should include a query string containing parameters as specified below.

	Parameter description	M <sup>1</sup>	Name	2
1	A unique identifier for the sender of the Request. An alphanumeric string not containing spaces or punctuation. The form of the identifier used must be agreed between the parties to an exchange.	M	ClientID	
2	An encrypted password to further authenticate the sender of the request	M	ClientPassword	
3	A code value from a BIC-controlled codelist for the scheme used for the account identifier. Mandatory if including an account identifier. Permitted values are: 02 Proprietary 06 EAN-UCC GLN 07 SAN 11 PubEasy PIN	D	AccountIDType	
4	Account identifier for this request, using the specified scheme	D	AccountIDValue	
5	Identification number of this request	D	PriceAvailabilityRequestNumber	
6	A date/time reference for this request	D	IssueDateTime	
7	EAN-13 product number (mandatory unless trading partners have agreed to use an alternative product identifier)	D	EAN13	
8	A code value from a BIC-controlled codelist for the type of an alternative identifier of the product (see ONIX codelist 5).	D	ProductIDType	
9	An alternative product identifier of the specified type. Only one alternative type of identifier may be carried in a Request using the HTTP GET method.	D	ProductIDValue	
10	If and only if this parameter is supported by the web service implementation, the quantity of single copies of the identified product to be supplied may be specified. An integer value must be specified.	D	SupplyQuantity	
11	If and only if this parameter is supported by the web service implementation, a third party supplier may be specified where the web service host is not the intended supplier, in which case this parameter and the next must be included. This parameter contains a code value from a BIC-controlled codelist for the type of identifier of the supplier – see ONIX codelist 92	D	SupplierIDType	
12	A unique supplier identifier of the specified type	D	SupplierIDValue	
13	A comma-separated list of country codes specifying regions in which all suppliers included in the response are to be located	D	SupplierRegionCodes	
14	Currency in which the requester would prefer prices to be quoted.	D	CurrencyCode	

*Example of a Request using the HTTP protocol and the HTTP GET method:*

<http://www.booksupplier.co.uk/PriceAvailabilityService?ClientID=12345&ClientPassword=x9a44Ysj&ProductIDType=03&ProductIDValue=9781234567890&SupplierRegionCodes=GB,IE>

<sup>1</sup> In the column headed “M”, “M” means mandatory, and “D” means dependent.

<sup>2</sup> An ‘R’ in the right-most column means that the element is repeatable.

**Requests using SOAP or non-SOAP protocols and using the HTTP POST method**

Requests using the HTTP POST method should include a request document as the body of a request message.

**Request document name and version**

	<b>Price and availability request Version 1.2</b>		<b>&lt;PriceAvailabilityRequest version="1.2"&gt;</b>	
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**Header**

	<b>Request header</b>	<b>M</b>	<b>Header.</b>	
1	A unique identifier for the sender of the request. An alphanumeric string not containing spaces or punctuation	M	ClientID	
2	An encrypted password to further authenticate the sender of the request	M	ClientPassword	
3	Account identifier for this request A code value from a BIC-controlled codelist for the scheme used for the account identifier. Mandatory if including an account identifier. Permitted values are: 02 Proprietary 06 EAN-UCC GLN 07 SAN 11 PubEasy PIN Account identifier for this request, using the specified scheme	D M M	AccountIdentifier. AccountIDType  IDValue	
4	Identification number / string of this request	D	PriceAvailabilityRequestNumber	
5	Document date/time: the date/time when the request was generated. Permitted formats are: YYYYMMDD YYYYMMDDTHHMM YYYYMMDDTHHMMZ (universal time) YYYYMMDDTHHMM±HHMM (time zone) where "T" represents itself, ie letter T	D	IssueDateTime	
6	Supplier(s) for whom price and availability is requested, if not the web service host (use only for requests sent to aggregators). Supplier ID type – see ONIX codelist 92 ID type name, only if ID type = proprietary Identifier	D M D M	SupplierIdentifier.  SupplierIDType IDTypeName IDValue	R
7	Region(s) in which all supplier(s) to which the request applies must be located (use only for requests sent to aggregators) Region code scheme 01 ISO 3166 country codes Region codes, separated by commas	D M M	SupplierRegionsCoded  SupplierRegionCodeType  RegionCodes	
8	Currency in which the requester would prefer prices to be quoted	D	CurrencyCode	

**Request detail**

	<b>Product</b>	<b>M</b>	<b>Product.</b>	<b>R</b>
1	EAN-13 product number (mandatory unless trading partners have agreed to use an alternative product identifier)	D	EAN13	
2	Alternative product identifier Product ID type – see ONIX codelist 5 ID type name, only if ID type = proprietary Product number	D M D M	ProductIdentifier. ProductIDType IDTypeName IDValue	R
3	If and only if this parameter is supported by the web service implementation, the quantity of single copies of the identified product to be supplied may be specified. An integer value must be specified	D	SupplyQuantity	

*Example of a Request XML payload using either the SOAP or the HTTP protocol and the HTTP POST method:*

```
<PriceAvailabilityRequest version="1.2"
  xmlns="http://www.bic.org.uk/webservices">
  <Header>
    <ClientID>12345</ClientID>
    <ClientPassword>x9a44Ysj</ClientPassword>
    <AccountIdentifier>
      <AccountIDType>02</AccountIDType>
      <IDValue>12345</IDValue>
    </AccountIdentifier>
    <PriceAvailabilityRequestNumber>001</PriceAvailabilityRequestNumber>
    <IssueDateTime>20060418T152500</IssueDateTime>
    <SupplierIdentifier>
      <SupplierIDType>02</SupplierIDType>
      <IDValue>XYZ</IDValue>
    </SupplierIdentifier>
    <CurrencyCode>GBP</CurrencyCode>
  </Header>
  <Product>
    <ProductIdentifier>
      <ProductIDType>03</ProductIDType>
      <IDValue>9781234567890</IDValue>
    </ProductIdentifier>
  </Product>
</PriceAvailabilityRequest>
```

## PRICE AND AVAILABILITY RESPONSE

The Response will use the protocol corresponding to the Request. If the Request uses the basic HTTP protocol, the Response will be an XML document as specified below attached to a normal HTTP header. If the Request uses the SOAP protocol, the Response will contain a SOAP response message whose body will contain the XML document specified below.

### Response document name and version

	<b>Price and availability response Version 1.2</b>		<b>&lt;PriceAvailabilityResponse version="1.2"&gt;</b>	
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### Response header

	<b>Payload header</b>	<b>M</b>	<b>Header.</b>	
1	Document date/time: the date/time when the response was generated. Permitted formats are: YYYYMMDD YYYYMMDDTHHMM YYYYMMDDTHHMMZ (universal time) YYYYMMDDTHHMM±HHMM (time zone) where "T" represents itself, ie letter T	M	IssueDateTime	
2	Sender (web service host) Sender ID type – see ONIX codelist 92 ID type name, only if ID type = proprietary Identifier	M M D D	SenderIdentifier. SenderIDType IDTypeName IDValue	
3	Identification number / string of this response	D	PriceAvailabilityResponseNumber	
4	Account identifier, required if included in the request A code value from a BIC-controlled codelist for the scheme used for the account identifier. Must be specified if an account identifier is specified. Permitted schemes are: 02 Proprietary 06 EAN-UCC GLN 07 SAN 11 PubEasy PIN Account identifier for this request, using the specified scheme	D M M	AccountIdentifier. AccountIDType  IDValue	
5	References: request number of request must be quoted if included in the request; request date or date and time must be quoted in this composite if both number and date/time are included in the request.  Reference type 01 Request number of associated price and availability request  Reference number / string  Reference date or date and time	D M M D	ReferenceCoded  ReferenceTypeCode  ReferenceNumber ReferenceDateTime	R
6	Reference date or date and time: must be quoted separately if and only if included in the request <i>without</i> a request number. See header line 5 for permitted formats.	D	ReferenceDateTime	
7	Region(s) in which all supplier(s) to which the response applies must be located (for use by aggregators when responses include information from multiple suppliers located in different regions).  Region code scheme 01 ISO 3166 country codes Region codes, separated by spaces	D M M	SupplierRegionsCoded  SupplierRegionCodeType  RegionCodes	
8	Default currency of prices given in the response – mandatory if response code '05' is included.	D	CurrencyCode	

**Response header (continued)**

9	Response code, if there are exception conditions that affect the response as a whole	D	ResponseCoded.	R
	Response type code. Suggested code values: 01 Service unavailable 02 Invalid ClientID or ClientPassword 03 Server unable to process request 04 No information for supplier(s) listed below 05 Prices not quoted in preferred currency	M	ResponseType	
	Free text description	D	ResponseTypeDescription	R
	Supplier identifier, if the exception condition affects a specified supplier	D	SupplierIdentifier.	
	Supplier ID type – see ONIX codelist 92	M	SupplierIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Identifier	M	IDValue	

## Response detail

	<b>Product price and availability: mandatory unless the header reports an exception condition that prevents any response</b>	D	<b>ProductPriceAvailability.</b>	R
1	EAN-13 product number (mandatory unless trading partners have agreed to use an alternative product identifier)	D	EAN13	
2	Alternative product identifier Product ID type – see ONIX codelist 5 ID type name, only if ID type = proprietary Product number	D M D M	ProductIdentifier. ProductIDType IDTypeName IDValue	R
3	Response code, if no information can be sent for this product. If present, elements 4 to 8 below must not be sent.  Response type code. Suggested code values: 05 Price not quoted in preferred currency [??] 06 Invalid product ID 07 No information for this product Free text description	D  M  D	ResponseCoded.  ResponseType  ResponseTypeDescription	
4	Height in mm	D	Height	
5	Width in mm	D	Width	
6	Depth in mm	D	Depth	
7	Unit weight in gm	D	UnitWeight	
8	Supplier price and availability – for details see below.	D	SupplierPriceAvailability.	R

## Supplier price and availability

	<b>Supplier price and availability – repeatable for each supplier if the response covers more than one source for the requested item</b>	D	<b>ProductPriceAvailability.SupplierPriceAvailability.</b>	R
1	Date and possibly time when the price and availability information contained in this supplier's response was last updated (YYYYMMDD or YYYYMMDDTHHMMSS)	D	LastUpdated	
2	Supplier identifier, if web service host is an aggregator responding on behalf of a supplier Supplier ID type – see ONIX codelist 92 ID type name, only if ID type = proprietary Identifier	D M D M	SupplierIdentifier. SupplierIDType IDTypeName IDValue	R
3	Location(s) from which supplier is able to ship the item. Location identifier Location ID type 02 Proprietary 06 EAN-UCC GLN 07 SAN Proprietary ID type name Location ID value Location name	D D M  D M D	SupplierLocation  LocationIdentifier LocationIDType  IDTypeName IDValue LocationName	R
4	Quantity requested, if applicable – see Note on page 1	D	SupplyQuantity	
5	In stock indicator. Suggested code values: 01 In stock, quantity unspecified 02 Out of stock 03 Requested quantity available 04 Requested quantity unavailable	D	InStock	
6	Product availability status – Use of this element is deprecated, but it is retained for backwards compatibility with earlier versions of this format. The composite element in line 7 is normally to be used. <i>Valid codes are specified in ONIX code list 65</i>	D	ProductAvailability	

**Supplier price and availability (continued)**

	<b>Supplier price and availability</b>	<b>D</b>	<b>ProductPriceAvailability.SupplierPriceAvailability.</b>	<b>R</b>
7	Product availability status expressed as a composite <i>NOTE – It is recommended that this element be used instead of the preceding element, which is retained for backwards compatibility.</i> Supplier item availability code value. See Table 1 for BIC web services availability status codes that should be used in this context. Publisher product availability code value – see ONIX codelist 65 Availability date Publishing status code value – see ONIX codelist 64 On-sale date for the product, if ordered (YYYYMMDD) – included if sale is embargoed until the specified date, or if mandated by a publishing status code value. Expected order time for a non-stock item – in days	D M D D D D	AvailabilityCoded  SupplierAvailabilityCode  PublisherAvailabilityCode  ExpectedShipDate PublishingStatusCode  ConsumerOnSaleDate  OrderTime	
8	Successor product Product ID type – see ONIX codelist 5 ID type name, only if ID type = proprietary Product number	D M D M	SuccessorProductIdentifier. ProductIDType IDTypeName IDValue.	R
9	Successor product form – see ONIX codelist 150	D	SuccessorProductForm	
10	Alternative format product Product ID type – see ONIX codelist 5 ID type name, only if ID type = proprietary Product number	D M D M	AlternativeProductIdentifier. ProductIDType IDTypeName IDValue.	R
11	Alternative product form – see ONIX codelist 150	D	AlternativeProductForm	
12	Pack quantity	D	PackQuantity	
13	Recommended retail price Price amount including tax, if any Currency, if different from default Tax rate 1, coded Tax rate 1 percent Amount of price taxable at tax rate 1 Amount of tax at tax rate 1 Tax rate 2, coded Tax rate 2 percent Amount of price taxable at tax rate 2 Amount of tax at tax rate 2	D M D D D D D D D D D	RetailPrice. PriceAmount CurrencyCode TaxRateCode1 TaxRatePercent1 TaxableAmount1 TaxAmount1 TaxRateCode2 TaxRatePercent2 TaxableAmount2 TaxAmount2	
14	BIC discount group code (discount from RRP)	D	BICDiscountGroupCode	
15	Discount percent (discount from RRP, specific to the requester)	D	DiscountPercent	
16	Discount code from a specified scheme Discount code scheme – see ONIX codelist 100 Scheme name, only if scheme is proprietary Discount code value from the specified scheme	D M D M	DiscountCoded DiscountCodeType DiscountCodeTypeName DiscountCode	R
17	Net price to retailer (specific to the requester) Price amount including tax, if any Currency, if different from default Tax rate 1, coded Tax rate 1 percent Amount of price taxable at tax rate 1 Amount of tax at tax rate 1 Tax rate 2, coded Tax rate 2 percent Amount of price taxable at tax rate 2 Amount of tax at tax rate 2	D M D D D D D D D D	NetPrice. PriceAmount CurrencyCode TaxRateCode1 TaxRatePercent1 TaxableAmount1 TaxAmount1 TaxRateCode2 TaxRatePercent2 TaxableAmount2 TaxAmount2	

**Example of a Response XML payload:**

```

<PriceAvailabilityResponse version="1.2"
  xmlns="http://www.bic.org.uk/webservices">
  <Header>
    <IssueDateTime>20060424T1145</IssueDateTime>
    <SenderIdentifier>
      <SenderIDType>02</SenderIDType>
      <IDValue>XYZ</IDValue>
    </SenderIdentifier>
    <AccountIdentifier>
      <AccountIDType>01</AccountIDType>
      <IDValue>12345</IDValue>
    </AccountIdentifier>
    <ReferenceCoded>
      <ReferenceCodeType>01</ReferenceCodeType>
      <ReferenceNumber>001</ReferenceNumber>
      <ReferenceDateTime>20060418T152500</ReferenceDateTime>
    </ReferenceCoded>
  </Header>
  <ProductPriceAvailability>
    <ProductIdentifier>
      <ProductIDType>03</ProductIDType>
      <IDValue>9780123456789</IDValue>
    </ProductIdentifier>
    <SupplierPriceAvailability>
      <SupplierIdentifier>
        <SupplierIDType>02</SupplierIDType>
        <IDValue>XYZ</IDValue>
      </SupplierIdentifier>
      <AvailabilityCoded>
        <SupplierAvailabilityCode>20</SupplierAvailabilityCode>
        <PublisherAvailabilityCode>21</PublisherAvailabilityCode>
      </AvailabilityCoded>
      <RetailPrice>
        <PriceAmount>19.99</PriceAmount>
        <TaxRateCode1>Z</TaxRateCode1>
        <TaxRateAmount1>0</TaxRateAmount1>
        <TaxableAmount1>19.99</TaxableAmount1>
        <TaxAmount1>0.00</TaxAmount1>
      </RetailPrice>
      <BICDiscountGroupCode></BICDiscountGroupCode>
    </SupplierPriceAvailability>
  </ProductPriceAvailability>
</PriceAvailabilityResponse>

```

**Table 1: Supplier item availability codes**

Used in SupplierAvailabilityCode (page 9, line 7).

<b>Code value</b>	<b>Description</b>
10	Not yet available - reason may be provided by publisher product availability code and/or publishing status code
20	Available - further information on the precise nature of the availability should normally be provided by publisher product availability code
21	Available - from stock - no additional availability information would normally be provided
23	Available - manufactured on demand
30	Temporarily unavailable - reason may be provided by publisher product availability code
31	Temporarily unavailable due to stock taking
40	Not available - if due to a supply chain issue, the reason should be provided by publisher product availability code and/or publishing status code
41	Not available - publisher address unknown
42	Not available - publisher no longer trading
43	Not available - rights restricted
44	Not available in pack/set form - only available singly
80	Sold - second-hand or antiquarian item
90	Availability uncertain - no further information
91	Availability uncertain - item not known / identifier not recognised
92	Availability uncertain - apply to customer services