BIC

Book Industry Communication

BIC Realtime for Libraries Web Services API Standards
Retrieve Price and Availability

Version 1.0, 3 September 2019

This document: https://www.bic.org.uk/files/pdfs/API/BIC Realtime for Libraries - Retrieve Price and Availability - Version 1.0.pdf
XML schema: https://www.bic.org.uk/files/pdfs/API/BICLWSPriceAvailability_V1.0.xsd
WSDL file: https://www.bic.org.uk/files/pdfs/API/BICLWSPriceAvailabilitySOAP_V1.0.wsdl
XML namespace: http://www.bic.org.uk/librarywebservices/priceandavailability
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This document specifies in human-readable form the Request and Response formats for the *BIC Realtime for Libraries* Retrieve Price and Availability API.

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A Price and Availability (P&A) Request may be implemented using either SOAP or the basic HTTPS protocol[1] and POST method. The payload of a P&A Request may be formatted either as an XML document or as an equivalent JSON document.

The same Response payload format options (payload in XML or JSON) will apply to both basic HTTP and SOAP exchanges.

The complete specification of the Retrieve P&A 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.

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[1] Throughout the term 'HTTPS protocol' is to be interpreted as a secure internet protocol that is implemented either at the application layer (i.e. HTTPS) or at the transport layer (e.g. SSL/TLS).

Business requirements

This API has been designed not only to allow libraries to find out price, discount and availability from their suppliers, which will aid decisions on where to purchase, but also to provide details about any constraints and, for e-books, licenses that apply to the purchase. For e-books available under different licenses this API is even more important, as it provides the information required to allow the library system to purchase the e-book under the correct license for their requirements – budgetary or otherwise.

Corrections made 16 October 2018

Page 2:	Business requirements revised.

Corrections made 8 March 2019

Page 1:	Editorial corrections to introduction.
Page 7:	Line 9 re-numbered line 8.
Page 8:	Reference to non-existent note deleted in description of element 'SupplyQuantity'.
Page 11:	Correction to example: element DiscountPercentage moved inside Price.

Changes made for version 1.0, September 2019

General	Changed version number from "0.9" to "1.0".
Page 4, line 1:	Added element LineNumber inside Product in the request detail.
Page 4, lines 5, 6:	Added elements IncludeAlternativeProducts and AlternativeProductForms inside 'Product' in the request detail.
Pages 4–5:	Examples modified to show use of new element IncludeAlternativeProducts.
Page 7, line 1:	Added element LineNumber inside ProductPriceAvailability in the response detail.
Page 7, line 4:	Added element ReferenceCoded inside ProductPriceAvailability in the response detail.
Page 7, lines 6–9:	Added elements ProductForm, EditionStatement, DateOfPublication and YearOfPublication inside ProductPriceAvailability in the response detail, to facilitate comparison of successor and alternative products.
Page 8, line 7:	Elements SuccessorProductIdentifier and SuccessorProductForm replaced by composite element SuccessorProduct.
Page 8, line 8:	Elements AlternativeProductIdentifier and AlternativeProductForm replaced by composite element AlternativeProduct.
Pages 9–10:	Element Price re-organized to incorporate all aspects of a supplier's single unit price-point and associated terms and conditions of supply, and to enable Tax information to be included when appropriate.
Pages 11–12:	Examples modified to show new structure of Price element.

PRICE AND AVAILABILITY REQUEST

Requests should include an XML or JSON document as specified below as the body of a request message.

Request document name and version

Price and availability request Version 1.0		<PriceAvailabilityRequest version="1.0"> { "PriceAvailabilityRequest": { "version": ,...	

Header

	Request header	**M[2]**	**Header.**	**[3]**
1	A unique identifier for the sender of the request. An alphanumeric string not containing spaces or punctuation	D	ClientID	
2	A password to further authenticate the sender of the request	D	ClientPassword	
3	Account identifier for this request	D	AccountIdentifier.	

	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:
	    01 Proprietary
	    06 EAN-UCC GLN
	    07 SAN
	    11 PubEasy PIN
		M	AccountIDType	

	Account identifier for this request, using the specified scheme	M	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, i.e. 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).	D	SupplierIdentifier.	R
	Supplier ID type – see ONIX codelist 92	M	SupplierIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Identifier	M	IDValue	
7	Region(s) in which all supplier(s) to which the request applies must be located (use only for requests sent to aggregators)	D	SupplierRegionsCoded	
	Region code scheme *01* ISO 3166 country codes	M	SupplierRegionCodeType	
	Region codes, separated by commas	M	RegionCodes	
8	Currency in which the requester would prefer prices to be quoted	D	CurrencyCode	

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[2] In the third column "M" means mandatory and "D" means dependent upon the business or message context.
[3] An 'R' in the right-most column means that the element is repeatable.

Request detail

	Product	M	Product.	R
1	Request line number. Mandatory if there is more than one product item in the request.	D	LineNumber	
2	EAN-13 product number (mandatory unless trading partners have agreed to use an alternative product identifier)	D	EAN13	
3	Alternative product identifier	D	ProductIdentifier.	R
	Product ID type – see ONIX codelist 5	M	ProductIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Product number	M	IDValue	
4	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	
5	Include alternative product details in the response. If this empty element flag is included, the response should include details for the product itself and zero or more lines detailing each alternative product, which may be restricted by product form – see next line.	D	IncludeAlternativeProducts	
6	Alternative product forms. May only be included if the preceding element is included for this product item. A space-separated list of two-letter product form code values from ONIX code list 150. The second letter of a code value may be replaced by a wild-card character *, providing a short-hand for all product form code values commencing with the first letter, e.g. "B*" for all printed books. If included, only alternative products whose product form matches one of the listed code values are to be included in the response. If omitted, alternative products of any product form are to be included in the response.	D	AlternativeProductForms	

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

```
<PriceAvailabilityRequest version="1.0"
 xmlns="http://www.bic.org.uk/librarywebservices/priceandavailability">
  <Header>
    <AccountIdentifier>
      <AccountIDType>01</AccountIDType>
      <IDValue>12345</IDValue>
    </AccountIdentifier>
    <PriceAvailabilityRequestNumber>001</PriceAvailabilityRequestNumber>
    <IssueDateTime>20180418T152500</IssueDateTime>
    <SupplierIdentifier>
      <SupplierIDType>01</SupplierIDType>
      <IDValue>XYZ</IDValue>
    </SupplierIdentifier>
  </Header>
  <Product>
    <ProductIdentifier>
      <ProductIDType>03</ProductIDType>
      <IDValue>9781234567890</IDValue>
    </ProductIdentifier>
    <IncludeAlternativeProducts/>
  </Product>
</PriceAvailabilityRequest>
```

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

```
{
    "PriceAvailabilityRequest": {
        "version": "1.0",
        "xmlns": "http://www.bic.org.uk/librarywebservices/priceandavailability",
        "Header": {
            "AccountIdentifier": {
                "AccountIDType": "01",
                "IDValue": "12345"
            },
            "PriceAvailabilityRequestNumber": "001",
            "IssueDateTime": "20180418T152500",
            "SupplierIdentifier": {
                "SupplierIDType": "01",
                "IDValue": "XYZ"
            }
        },
        "Product": {
            "ProductIdentifier": {
                "ProductIDType": "03",
                "IDValue": "9781234567890"
            },
            "IncludeAlternativeProducts": {}
        }
    }
}
```

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

Price and availability response Version 1.0	**<PriceAvailabilityResponse version="1.0"> { "PriceAvailabilityResponse": { "version": ,...**	

Response header

	Payload header	**M**	**Header.**	
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, i.e. letter T	M	IssueDateTime	
2	Sender (web service host)	M	SenderIdentifier.	
	Sender ID type – see ONIX codelist 92	M	SenderIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Identifier	D	IDValue	
3	Identification number / string of this response	D	PriceAvailabilityResponseNumber	
4	Account identifier, required if included in the request	D	AccountIdentifier.	
	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: *01* Proprietary *06* EAN-UCC GLN *07* SAN *11* PubEasy PIN	M	AccountIDType	
	Account identifier for this request, using the specified scheme	M	IDValue	
5	References: request number and/or date/time of request must be quoted if included in the request.	D	ReferenceCoded	R
	Reference type *01* Request number or date/time of associated price and availability request	M	ReferenceTypeCode	
	Reference number / string	D	ReferenceNumber	
	Reference date or date and time	D	ReferenceDateTime	
6	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).	D	SupplierRegionsCoded	
	Region code scheme *01* ISO 3166 country codes	M	SupplierRegionCodeType	
	Region codes, separated by spaces	M	RegionCodes	
7	Default currency of prices given in the response – mandatory if response code '05' is included.	D	CurrencyCode	

Response header *(continued)*

	Payload header	M	Header.	
8	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 – a reason should normally be given as a free text description – see below *04* No information for supplier(s) listed below *05* Prices not quoted in preferred currency	M	ResponseType	
	Free text description / reason for response	D	ResponseTypeDescription	
	Supplier identifier, if the exception condition affects a specified supplier	D	SupplierIdentifier.	R
	Supplier ID type – see ONIX codelist 92	M	SupplierIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Identifier	M	IDValue	

Response detail

	Product price and availability: mandatory unless the header reports an exception condition that prevents any response	D	ProductPriceAvailability.	R
1	Response line number	D	LineNumber	
2	EAN-13 product number (mandatory unless trading partners have agreed to use an alternative product identifier)	D	EAN13	
3	Alternative product identifier	D	ProductIdentifier.	R
	Product ID type – see ONIX codelist 5	M	ProductIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Product number	M	IDValue	
4	Reference to request line and other response lines. If the request specified that details of alternative products should be included in the response, each alternative product must reference the request line to which it relates and should also reference the response line for the product for which it is an alternative.	D	ReferenceCoded	R
	Reference type *02* Request line reference *03* Response line reference	M	ReferenceTypeCode	
	Reference number / string	M	ReferenceNumber	
5	Response code, if either no information can be sent for this product or the quoted currency is not the requester's preferred currency. If code value is '06' or '07', elements 6 to 11 below must not be sent.	D	ResponseCoded.	
	Response type code. Suggested code values: *05* Price not quoted in preferred currency *06* Invalid product ID *07* No information for this product	M	ResponseType	
	Free text description	D	ResponseTypeDescription	
6	Product form – see ONIX codelist 150.	D	ProductForm	
7	Edition statement: text	D	EditionStatement	
8	Date of publication: YYYYMMDD	D	DateOfPublication	
9	Year of publication: YYYY	D	YearOfPublication	
10	Height in mm	D	Height	
11	Width in mm	D	Width	
12	Depth in mm	D	Depth	
13	Unit weight in gm	D	UnitWeight	

| 14 | Supplier price and availability – *for details see below.* | D | SupplierPriceAvailability. | R |

Supplier price and availability

	Supplier price and availability – repeatable for each supplier if the response covers more than one source for the requested item	**D**	**ProductPriceAvailability. SupplierPriceAvailability.**	**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	D	SupplierIdentifier.	R
	Supplier ID type – see ONIX codelist 92	M	SupplierIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Identifier	M	IDValue	
3	Location(s) from which supplier is able to ship the item.	D	SupplierLocation	R
	Location identifier	D	LocationIdentifier	R
	Location ID type *01* Proprietary *06* EAN-UCC GLN *07* SAN	M	LocationIDType	
	Proprietary ID type name	D	IDTypeName	
	Location ID value	M	IDValue	
	Location name	D	LocationName	
4	Quantity requested, if applicable	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	D	AvailabilityCoded	
	Supplier item availability code value. See Table 1 for BIC web services availability status codes that should be used in this context.	M	SupplierAvailabilityCode	
	Publisher/distributor product availability code value – see ONIX codelist 65	D	ProductAvailabilityCode	
	Availability date	D	ExpectedShipDate	
	Publishing status code – see ONIX codelist 64	D	PublishingStatusCode	
	On-display date for the product, if ordered (YYYYMMDD) – included if display is embargoed until the specified date, or if mandated by a publishing status code value.	D	LibraryOnDisplayDate	
	Expected order time for a non-stock item – in days	D	OrderTime	
7	Successor product	D	SuccessorProduct	R
	Product identifier	M	ProductIdentifier.	R
	Product ID type – see ONIX codelist 5	M	ProductIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Product number	M	IDValue.	
	Product form – see ONIX codelist 150	D	ProductForm	
	Edition statement: text	D	EditionStatement	
	Date of publication: YYYYMMDD	D	DateOfPublication	
	Year of publication: YYYY	D	YearOfPublication	
8	Alternative format product	D	AlternativeProduct	R
	Product identifier	M	ProductIdentifier.	R
	Product ID type – see ONIX codelist 5	M	ProductIDType	
	ID type name, only if ID type = proprietary	D	IDTypeName	
	Product number	M	IDValue.	
	Product form – see ONIX codelist 150	M	ProductForm	
	Edition statement: text	D	EditionStatement	
	Date of publication: YYYYMMDD	D	DateOfPublication	
	Year of publication: YYYY	D	YearOfPublication	
9	Supplier's expected unit price. Repeated for each price-point for this product from this supplier, if	D	Price	R

| | available under various terms and conditions. | | | | |

Supplier's unit price

	Supplier's expected unit price	D	ProductPriceAvailability. SupplierPriceAvailability.Price.	R
1	Supplier's price identifier. Must be included if the product is available at various identified prices according to the terms, conditions and constraints of supply. If both price amount and price identifier are specified, the buyer must ensure they are consistent. The price identifier must match a price identifier specified in the current ONIX record for the same item.	D	PriceIdentifier	
	Proprietary price identifier scheme – use ONIX code list 217	M	PriceIDType	
	Proprietary scheme name	D	IDTypeName	
	Identifier value	M	IDValue	
2	Price qualifier corresponding to the supplier's price identifier – use ONIX code list 59.	D	PriceTypeQualifier	
3	For digital items, the technical protection method(s) applied as a condition of sale at the supplier's price identifier. Repeatable – use ONIX code list 144.	D	EpubTechnicalProtection	R
4	Usage constraint(s) associated with the supplier's identified price. Repeatable	D	PriceConstraint	R
	Type of constraint – use ONIX code list 230.	M	PriceConstraintType	
	Status of constraint – use ONIX code list 146.	M	PriceConstraintStatus	
	Limit of constraint	D	PriceConstraintLimit	R
	Limiting quantity	M	Quantity	
	Quantity unit – use ONIX code list 147.	M	PriceConstraintUnit	
5	For digital items, the licensing terms applicable as a condition of sale at the supplier's identified price.	D	EpubLicense	
	License name	M	EpubLicenseName	R
	License expression	D	EpubLicenseExpression	
	Expression type – use ONIX code list 218.	M	EpubLicenseExpressionType	
	Expression type name	D	EpubLicenseExpressionTypeName	
	URI of license expression	M	EpubLicenseExpressionLink	
6	Further conditions applicable to the supplier's identified price.	D	PriceCondition	R
	Type of condition – use ONIX code list 167.	M	PriceConditionType	
	Quantity associated with condition	D	PriceConditionQuantity	R
	Type of quantity – use ONIX code list 168.	M	PriceConditionQuantityType	
	Quantity	M	Quantity	
	Quantity unit – use ONIX code list 169.	M	QuantityUnit	

Supplier's unit price *(continued)*

	Supplier's expected unit price	D	ProductPriceAvailability. SupplierPriceAvailability.Price.	R
7	Price amount. Repeatable for different currencies or price types	D	PriceAmount	R
	Monetary amount	D	MonetaryAmount	
	Currency: ISO 4217 currency code	D	CurrencyCode	
	Price type: *01* Suggested retail price including tax *02* Suggested retail price excluding tax *03* Net price (unit cost) including tax *04* Net price (unit cost) excluding tax *05* Fixed retail price including tax *06* Fixed retail price excluding tax	D	PriceQualifierCode	
	Tax details. May be included only if the price amount is inclusive of any tax. May be repeated for split-rate items only.	D	Tax	R
	Product identifier. Included only for split-rate items when trading terms require identification of the item(s) to which this rate applies.	D	ProductIdentifier	R
	Product ID type – see ONIX codelist 5	M	ProductIDType	
	ID type name, only if proprietary	D	IDTypeName	
	Product number	M	IDValue	
	Tax component description	D	PricePartDescription	
	Tax type – see ONIX codelist 171	M	TaxType	
	Tax type name	D	TaxTypeName	
	Tax rate code – see ONIX codelist 62	D	TaxRateCode	
	Tax rate: percentage. Mandatory if either the taxable amount is specified or the tax amount isn't specified	D	TaxRatePercent	
	Taxable amount. Mandatory if either the tax rate is specified or the tax amount isn't specified.	D	TaxableAmount	
	Tax amount. Mandatory if no tax rate or taxable amount is specified.	D	TaxAmount	
8	Price discount percent (specific to the requester)	D	DiscountPercentage	

Example of a Response XML payload:

```xml
<PriceAvailabilityResponse version="1.0"
 xmlns="http://www.bic.org.uk/librarywebservices/priceandavailability">
  <Header>
    <IssueDateTime>20180424T1145</IssueDateTime>
    <SenderIdentifier>
      <SenderIDType>01</SenderIDType>
      <IDValue>XYZ</IDValue>
    </SenderIdentifier>
    <AccountIdentifier>
      <AccountIDType>01</AccountIDType>
      <IDValue>12345</IDValue>
    </AccountIdentifier>
    <ReferenceCoded>
      <ReferenceCodeType>01</ReferenceCodeType>
      <ReferenceNumber>001</ReferenceNumber>
      <ReferenceDateTime>20180418T152500</ReferenceDateTime>
    </ReferenceCoded>
  </Header>
  <ProductPriceAvailability>
    <ProductIdentifier>
      <ProductIDType>03</ProductIDType>
      <IDValue>9780123456789</IDValue>
    </ProductIdentifier>
    <SupplierPriceAvailability>
      <SupplierIdentifier>
        <SupplierIDType>01</SupplierIDType>
        <IDValue>XYZ</IDValue>
      </SupplierIdentifier>
      <AvailabilityCoded>
        <SupplierAvailabilityCode>20</SupplierAvailabilityCode>
        <PublisherAvailabilityCode>21</PublisherAvailabilityCode>
      </AvailabilityCoded>
      <Price>
        <PriceAmount>
          <MonetaryAmount>19.99</MonetaryAmount>
        </PriceAmount>
        <DiscountPercentage>15</DiscountPercentage>
      </Price>
    </SupplierPriceAvailability>
  </ProductPriceAvailability>
</PriceAvailabilityResponse>
```

Example of a Response JSON payload:

```json
{
    "PriceAvailabilityResponse": {
        "version": "1.0",
        "xmlns": "http://www.bic.org.uk/librarywebservices/priceandavailability",
        "Header": {
            "IssueDateTime": "20180424T1145",
            "SenderIdentifier": {
                "SenderIDType": "01",
                "IDValue": "XYZ"
            },
            "AccountIdentifier": {
                "AccountIDType": "01",
                "IDValue": 12345
            },
            "ReferenceCoded": {
                "ReferenceCodeType": "01",
                "ReferenceNumber": "001",
                "ReferenceDateTime": "20180418T152500"
            }
        },
        "ProductPriceAvailability": {
            "ProductIdentifier": {
                "ProductIDType": "03",
                "IDValue": "9780123456789"
            },
            "SupplierPriceAvailability": {
                "SupplierIdentifier": {
                    "SupplierIDType": "01",
                    "IDValue": "XYZ"
                },
                "AvailabilityCoded": {
                    "SupplierAvailabilityCode": "20",
                    "PublisherAvailabilityCode": "21"
                },
                "Price": {
                    "PriceAmount": {
                        "MonetaryAmount": 19.99
                    },
                    "DiscountPercentage": 15
                }
            }
        }
    }
}
```

Table 1: Supplier item availability codes

Used in SupplierAvailabilityCode (page 9, line 6). This code list is derived from ONIX codelist 65, but with significant differences for code values 31 and above.

Code value	Description
10	Not yet available - reason may be provided by publisher product availability code (e.g. 10, 11 or 12) and/or publishing status code (e.g. 02)
20	Available - further information on the precise nature of the availability should normally be provided by publisher/distributor product availability code (e.g. 20, 21, 22 or 23)
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