

Gamma CES API

Web Services for Converged Ethernet Quotes



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Version History

Revision	Author	Change	Date
0.1	Jack Jonas	Initial Version	25/10/2017
0.2	Fred Jones	Added "ShowErrors" and "ErrorMessage"	16/07/2019

1. Overview

1.1 About This Document

This document describes the specification of the Gamma Ethernet Quoting Web Service. It includes:

- An outline of the service provided
- A summary of how the API is designed;
- Details on what is needed to start development with the CES API
- Support for common issues, as well as details of whom to contact for support;

1.2 Feedback

At Gamma we aim to produce high quality products and services. If you have any comments or suggestions about this documentation, please e-mail them to document@gamma.co.uk, with the subject heading "Gamma CES API Documentation Feedback". Please include the following information with your feedback:

- The name of the publication, the document and version number
- The page number if applicable
- Your suggestions for correcting or improving the documentation

2. API Principles and Process

2.1 Overview

The aim of the CES Web Service is to provide a Restful API for raising Converged Ethernet quotes.

This document assumes familiarity with the Gamma's CES quoting process, and proficiency in the following technical areas:

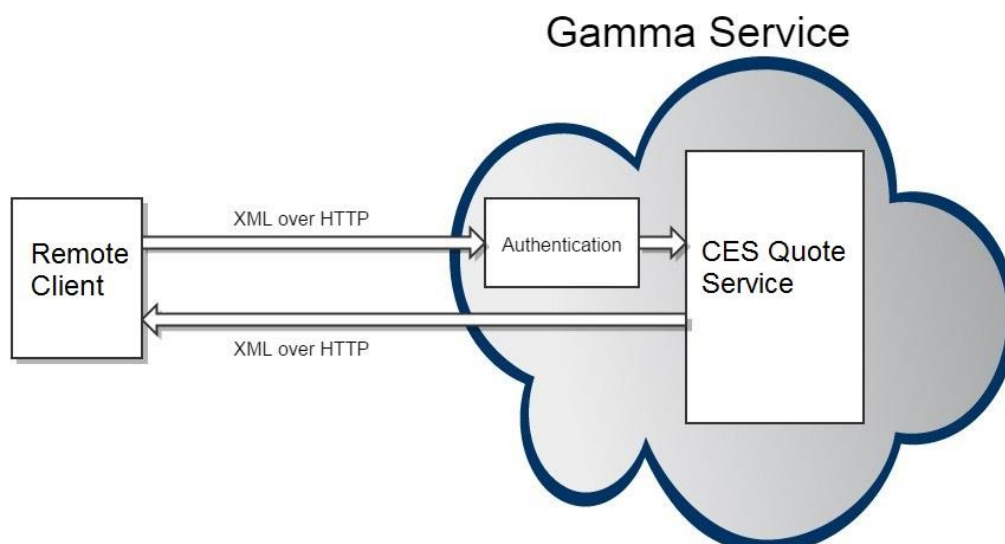
- Web Services
- Messaging via Hypertext Transfer Protocol (HTTP)
- eXtended Markup Language (XML)

Each API call is initiated via a client using XML over HTTP messaging.

2.2 Functional Description

2.2.1 Architecture and Messaging

The CES API is a web application that is exposed as a restful web service and communication takes place using an XML over HTTP messaging architecture.



A remote client can submit an HTTP request containing:

- Authentication credentials in the request header
- Raw XML payload comprising the service request

The HTTP request from the remote client is firstly authenticated by the web service then processed by the API engine, resulting in an appropriate response contained in an XML message.

2.2.2 Authorization

The CES web service performs authorization using the following credentials:

- HTTP Basic Authorisation (Base 64 encoded username/password)
- Client ID

These are defined as header elements in the HTTP request. The username and password credentials correspond to Gamma API user accounts and Client ID is the integer value that represents the user's organization within the Gamma system.

Users must request authentication credentials from Gamma Support. These credentials are not the same as for Gamma Portal accounts.

2.3 Message Encoding

2.3.1 HTTP Headers

HTTP headers will contain username and password attributes to fulfill the security requirements specified in section 2.2.2.

Both headers should look as follows:

```
Authorization: Basic <base64 username:password>  
  
Clientid <client_id_value>  
  
Content-Type: application/xml
```

2.3.2 HTTP Body

2.3.2.1 CES New Quote Request

The HTTP request body should contain a whole well-formed eXtensible Markup Language (XML) document and sent via a POST operation. The XML document must conform to the published XML Schema. It is advisable that the XML be validated against the published schema prior to request submission.

```
<NewQuoteRequest>
  <OperationContext/>
  <ClientId>169</ClientId>
  <Reference>ExampleReference</Reference>
  <Product>Gamma SIP (Converged)</Product>
  <ContractTerms>
    <ContractTerm>12 Months</ContractTerm>
    <ContractTerm>60 Months</ContractTerm>
  </ContractTerms>
  <Suppliers>
    <Supplier>BT Wholesale</Supplier>
  </Suppliers>
  <Bearers>
    <Bearer>FTTC-80</Bearer>
    <Bearer>FTTC-40</Bearer>
    <Bearer>100Mb Fibre</Bearer>
  </Bearers>
  <BackupBearers>
    <BackupBearer>ADSL2+</BackupBearer>
  </BackupBearers>
  <CircuitSpeed>45</CircuitSpeed>
  <Codec>G711</Codec>
  <Channels>44</Channels>
  <CLI></CLI>
  <SiteAddress>
    <BuildingName>Kings House</BuildingName>
    <BuildingNumber></BuildingNumber>
    <SubPremises></SubPremises>
    <Street>Kings Road West</Street>
    <Town>Newbury</Town>
    <Postcode>RG14 5BY</Postcode>
  </SiteAddress>
</NewQuoteRequest>
```

2.3.2.2 CES New Quote Response

A single HTTP request may generate multiple CES quotes, and the HTTP response message will contain information relating to each individual quoted price. Successful quotes will report the newly created CAE reference, CP reference, supplier, bearer, contract term, as well as the install and rental prices.

For example:

```
<NewQuoteResponse>
  <NewQuoteRequest>
    <ClientId>169</ClientId>
    <Reference>ExampleReference</Reference>
    <Product>Gamma SIP (Converged)</Product>
    <ContractTerms>
      <ContractTerm>12 Months</ContractTerm>
      <ContractTerm>60 Months</ContractTerm>
    </ContractTerms>
    <Suppliers>
      <Supplier>BT Wholesale</Supplier>
    </Suppliers>
    <Bearers>
      <Bearer>FTTC-80</Bearer>
      <Bearer>FTTC-40</Bearer>
      <Bearer>100Mb Fibre</Bearer>
    </Bearers>
    <BackupBearers>
      <BackupBearer>ADSL2+</BackupBearer>
    </BackupBearers>
    <CircuitSpeed>45</CircuitSpeed>
    <Codec>G711</Codec>
    <Channels>44</Channels>
    <CLI></CLI>
    <SiteAddress>
      <BuildingName>Kings House</BuildingName>
      <BuildingNumber></BuildingNumber>
      <SubPremises></SubPremises>
      <Street>Kings Road West</Street>
      <Town>Newbury</Town>
      <Postcode>RG14 5BY</Postcode>
    </SiteAddress>
  </NewQuoteRequest>
  <Quotes>
    <Quote>
      <CAE>CAE2598352</CAE>
      <Reference>ExampleReference</Reference>
      <Product>Gamma SIP (Converged)</Product>
      <Supplier>BT Wholesale</Supplier>
      <Bearer>100Mb Fibre</Bearer>
      <CircuitSpeed>45</CircuitSpeed>
      <Codec/>
      <Channels>0</Channels>
      <PrimaryRouterModel/>
      <BackupRouterModel/>
      <Backup>ADSL2+</Backup>
      <InstallPrice>813.00</InstallPrice>
      <MonthlyRentalPrice>278.48</MonthlyRentalPrice>
      <ContractTerm>12 Months</ContractTerm>
    </Quote>
    <Quote>
      <CAE>CAE2598351</CAE>
      <Reference>ExampleReference</Reference>
      <Product>Gamma SIP (Converged)</Product>
```

```

    <Supplier>BT Wholesale</Supplier>
    <Bearer>100Mb Fibre</Bearer>
    <CircuitSpeed>45</CircuitSpeed>
    <Codec/>
    <Channels>0</Channels>
    <PrimaryRouterModel/>
    <BackupRouterModel/>
    <Backup>ADSL2+</Backup>
    <InstallPrice>41.00</InstallPrice>
    <MonthlyRentalPrice>249.59</MonthlyRentalPrice>
    <ContractTerm>60 Months</ContractTerm>
  </Quote>
</Quotes>
</NewQuoteResponse>

```

If there is an issue with the values entered in the request then this will be reported in the response. A 'FieldErrors' section will be returned which will contain a list of 'FieldError' elements. These will identify the affected field, the errorCode and a message to describe the issue. An example error response:

```

<NewQuoteResponse>
  <NewQuoteRequest>
    <ClientId>169</ClientId>
    <Reference/>
    <Product/>
    <Bearers>
      <Bearer>That one that goes very fast please</Bearer>
    </Bearers>
    <CircuitSpeed/>
    <Codec/>
    <Channels/>
    <CLI/>
    <SiteAddress/>
  </NewQuoteRequest>
  <FieldErrors>
    <FieldError>
      <Field>reference</Field>
      <ErrorCode>E0106</ErrorCode>
      <Message>Reference required</Message>
    </FieldError>
    <FieldError>
      <Field>product</Field>
      <ErrorCode>E0110</ErrorCode>
      <Message>Product required</Message>
    </FieldError>
    <FieldError>
      <Field>bearers</Field>
      <ErrorCode>E0114</ErrorCode>
      <Message>Bearer unknown (was 'That one that goes very fast
please')</Message>
    </FieldError>
    <FieldError>
      <Field>siteAddress</Field>
      <ErrorCode>E0201</ErrorCode>

```

```

    <Message>At least one of Building Name or Number required for
Site Address</Message>
  </FieldError>
  <FieldError>
    <Field>siteAddress.street</Field>
    <ErrorCode>E0206</ErrorCode>
    <Message>Site Address Street required</Message>
  </FieldError>
  <FieldError>
    <Field>siteAddress.town</Field>
    <ErrorCode>E0209</ErrorCode>
    <Message>Site Address Town required</Message>
  </FieldError>
  <FieldError>
    <Field>siteAddress.postcode</Field>
    <ErrorCode>E0212</ErrorCode>
    <Message>Site Address Postcode required</Message>
  </FieldError>
</FieldErrors>
</NewQuoteResponse>

```

2.4 XML Schema

The XML Schema is fully defined in Appendix A.

2.5 XML Request Field Details

The input fields and any expected values are listed below. The XML Schema should be referred to for full technical details, and the below serves only as a guide.

Field	Description	Datatype	Restricted Inputs
ClientId	The unique client identifier associated with your Gamma Reseller Account.	Integer Mandatory	-
Reference	A user specified reference which is associated to the quote once raised.	String Mandatory	-
Product	The Gamma Ethernet product which you wish to quote for.	String Mandatory	Internet Access (Wires Only) Internet Access (Managed) Gamma SIP (Voice Only) Gamma SIP (Converged) Horizon (Voice Only) Horizon (Converged)
ContractTerms. ContractTerm	Optional, allows for quotes to be raised for specific contract	String Optional	12 Months 36 Months

	terms. Will default to all if left blank.		60 Months
<code>Suppliers. Supplier</code>	Optional, allows for quotes to be raised against specific suppliers. Will default to all if left blank.	String Optional	BT Wholesale Virgin Media TalkTalk Business
<code>Bearers. Bearer</code>	Optional, allows for quotes to be raised for specific bearers/access types. Will default to all available types if left blank.	String Optional	EFM FTTC-40 FTTC-80 100Mb Fibre 1Gb Fibre
<code>CircuitSpeed</code>	The requested circuit speed in Mb.	Integer Mandatory	-
<code>Codec</code>	The voice codec. Mandatory if a product with voice has been selected.	String Conditional Mandatory	G711 G729
<code>Channels</code>	The number of voice channels. Mandatory if a product with voice has been selected	Integer Conditional Mandatory	-
<code>CLI</code>	Optional phone number to quote against. Will use the specified address if left blank.	String Optional	-
<code>SiteAddress. BuildingName</code>	The building name for the site which is being quoted for.	String Conditional Mandatory	-
<code>SiteAddress. BuildingNumber</code>	The building name for the site which is being quoted for.	String Conditional Mandatory	-
<code>SiteAddress. SubPremises</code>	The building name for the site which is being quoted for.	String Conditional Mandatory	-
<code>SiteAddress. Street</code>	The name of the street for the site which is being quoted for.	String Mandatory	-
<code>SiteAddress. Town</code>	The name of the town for the site which is being quoted for.	String Mandatory	-
<code>SiteAddress. Postcode</code>	The postcode for the site which is being quoted for.	String Mandatory	-
<code>ShowErrors</code>	Optional, if this is true the response will include quotes that have failed. Defaults to false.	Boolean Optional	-

2.6 Error Codes and Messages

E0001 General Error

E0002 Server Error

E0003 Unsupported Media Type

E0101 ClientId required

E0102 ClientId invalid

E0103 Error resolving user

E0104 Username invalid

E0105 User not authorized for supplied ClientId {0,number,#}

E0106 Reference required

E0107 Reference contains invalid characters, please only enter letters, numbers or punctuation

E0108 Reference is below minimum length

E0109 Reference is above maximum length

E0110 Product required

E0111 Product unknown (was "{0}")

E0112 Contract Term unknown (was "{0}")

E0113 Supplier unknown (was "{0}")

E0114 Bearer unknown (was "{0}")

E0115 Backup bearer unknown (was "{0}")

E0116 Codec required for Voice Product

E0117 Codec unknown (was "{0}")

E0118 Invalid integer for Channels (was "{0}")

E0119 Channels are required for Voice Product

E0120 Channels minimum (was {0} but limit is {1})

E0121 Channels maximum (was {0} but limit is {1})

E0122 Invalid integer for Circuit Speed (was "{0}")

E0123 Circuit speed required for Data Product

E0124 Circuit speed is below minimum (was {0} but limit is {1})

E0125 Circuit speed is above maximum (was {0} but limit is {1})

E0126 CLI invalid (was "{0}")

E0127 Site Address required

E0201 At least one of Building Name or Number required for Site Address

E0202 Site Address Building Name contains invalid characters

E0203 Site Address Building Name maximum length

E0204 Site Address Building Number contains invalid characters

E0205 Site Address Building Number maximum length

E0206 Site Address Street required

E0207 Site Address Street contains invalid characters

E0208 Site Address Street exceeds maximum length

E0209 Site Address Town required

E0210 Site Address Town contains invalid characters

E0211 Site Address Town exceeds maximum length

E0212 Site Address Postcode required

E0213 Site Address Postcode invalid (was {0})

3. API In Practice – Worked examples

The following sections outline connection details to a test service that can be used for development and testing of CES quote requests. Use Cases define example XML requests that can be submitted for raising different quote types

3.1 Test Environment

TBC

3.2 General Quote Use Cases

3.2.1 Use Case 1: New Internet Access Only Quote

URI	http://<API_URL>/access-external-ws/ces/v1/quote
Method	POST
Request XML	<pre> <NewQuoteRequest> <OperationContext/> <ClientId>169</ClientId> <Reference>Example_OnlyInternetAccess</Reference> <Product>Internet Access (Wires Only)</Product> <CircuitSpeed>35</CircuitSpeed> <SiteAddress> <BuildingName>Kings House</BuildingName> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> </pre>
Response XML	<pre> <NewQuoteResponse> <NewQuoteRequest> <ClientId>169</ClientId> <Reference>Example_OnlyInternetAccess</Reference> <Product>Internet Access (Wires Only)</Product> <CircuitSpeed>35</CircuitSpeed> <Codec/> <Channels/> <CLI/> <SiteAddress> <BuildingName>Kings House</BuildingName> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> </pre>

	<pre> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> <Quotes> <Quote> <CAE>CAE2598558</CAE> <Reference>Example_OnlyInternetAccess</Reference> <Product>Internet Access (Wires Only)</Product> <Supplier>BT Wholesale</Supplier> <Bearer>EFM</Bearer> <CircuitSpeed>35</CircuitSpeed> <Codec/> <Channels>0</Channels> <PrimaryRouterModel/> <BackupRouterModel/> <Backup>ADSL Max Premium</Backup> <InstallPrice>2512.00</InstallPrice> <MonthlyRentalPrice>238.00</MonthlyRentalPrice> <ContractTerm>12 Months</ContractTerm> </Quote> <!-- Removed a few quotes to reduce documentation size --> <Quote> <CAE>CAE2598503</CAE> <Reference>Example_OnlyInternetAccess</Reference> <Product>Internet Access (Wires Only)</Product> <Supplier>TalkTalk Business</Supplier> <Bearer>1Gb Fibre</Bearer> <CircuitSpeed>100</CircuitSpeed> <Codec/> <Channels>0</Channels> <PrimaryRouterModel/> <BackupRouterModel/> <Backup>AnnexM</Backup> <InstallPrice>1277.00</InstallPrice> <MonthlyRentalPrice>453.00</MonthlyRentalPrice> <ContractTerm>12 Months</ContractTerm> </Quote> </Quotes> </NewQuoteResponse> </pre>
Prerequisites	<ul style="list-style-type: none"> •

Restrictions	•
--------------	---

3.2.2 Use Case 2: New Voice Only (Horizon) Quote

URI	http://<API_URL>/access-external-ws/ces/v1/quote
Method	POST
Request XML	<pre> <NewQuoteRequest> <OperationContext/> <ClientId>169</ClientId> <Reference>Example_HorizonVoiceOnly</Reference> <Product>Horizon (Voice Only)</Product> <Codec>G711</Codec> <Channels>60</Channels> <CLI></CLI> <SiteAddress> <BuildingName>Kings House</BuildingName> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> </pre>
Response XML	<pre> <NewQuoteResponse> <NewQuoteRequest> <ClientId>169</ClientId> <Reference>Example_HorizonVoiceOnly</Reference> <Product>Horizon (Voice Only)</Product> <CircuitSpeed/> <Codec>G711</Codec> <Channels>60</Channels> <CLI></CLI> <SiteAddress> <BuildingName>Kings House</BuildingName> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> <Quotes> <Quote> </pre>

	<pre> <CAE>CAE2598564</CAE> <Reference>Example_HorizonVoiceOnly</Reference> <Product>Horizon (Voice Only)</Product> <Supplier>BT Wholesale</Supplier> <Bearer>EFM</Bearer> <CircuitSpeed>6</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> <PrimaryRouterModel/> <BackupRouterModel/> <Backup>ADSL Max Premium</Backup> <InstallPrice>1453.00</InstallPrice> <MonthlyRentalPrice>155.48</MonthlyRentalPrice> <ContractTerm>12 Months</ContractTerm> </Quote> <!-- Removed a few quotes to reduce documentation size --> <Quote> <CAE>CAE2598593</CAE> <Reference>Example_HorizonVoiceOnly</Reference> <Product>Horizon (Voice Only)</Product> <Supplier>BT Wholesale</Supplier> <Bearer>EFM</Bearer> <CircuitSpeed>6</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> <PrimaryRouterModel/> <BackupRouterModel/> <Backup>ADSL Max Premium</Backup> <InstallPrice>41.00</InstallPrice> <MonthlyRentalPrice>139.59</MonthlyRentalPrice> <ContractTerm>60 Months</ContractTerm> </Quote> </Quotes> </NewQuoteResponse> </pre>
Prerequisites	<ul style="list-style-type: none"> •
Restrictions	<ul style="list-style-type: none"> •

3.2.3 Use Case 3: New Converged (Horizon) Quote

URI	http://<API_URL>/access-external-ws/ces/v1/quote
-----	--

Method	POST
Request XML	<pre> <NewQuoteRequest> <OperationContext/> <ClientId>169</ClientId> <Reference>Example_HorizonConverged</Reference> <Product>Horizon (Converged)</Product> <CircuitSpeed>45</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> <SiteAddress> <BuildingName>Kings House</BuildingName> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> </pre>
Response XML	<pre> <NewQuoteResponse> <NewQuoteRequest> <ClientId>169</ClientId> <Reference>Example_HorizonConverged</Reference> <Product>Horizon (Converged)</Product> <CircuitSpeed>45</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> <CLI/> <SiteAddress> <BuildingName>Kings House</BuildingName> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> <Quotes> <Quote> <CAE>CAE2598651</CAE> </Quote> </Quotes> <Reference>Example_HorizonConverged</Reference> <Product>Horizon (Converged)</Product> <Supplier>BT Wholesale</Supplier> <Bearer>100Mb Fibre</Bearer> <CircuitSpeed>45</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> </pre>

	<pre> <PrimaryRouterModel/> <BackupRouterModel/> <Backup>ADSL Max Premium</Backup> <InstallPrice>41.00</InstallPrice> <MonthlyRentalPrice>249.59</MonthlyRentalPrice> <ContractTerm>60 Months</ContractTerm> </Quote> <!-- Removed a few quotes to reduce documentation size --> <Quote> <CAE>CAE2598657</CAE> <Reference>Example_HorizonConverged</Reference> <Product>Horizon (Converged)</Product> <Supplier>BT Wholesale</Supplier> <Bearer>100Mb Fibre</Bearer> <CircuitSpeed>45</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> <PrimaryRouterModel/> <BackupRouterModel/> <Backup>ADSL Max Premium</Backup> <InstallPrice>41.00</InstallPrice> <MonthlyRentalPrice>256.65</MonthlyRentalPrice> <ContractTerm>36 Months</ContractTerm> </Quote> </Quotes> </NewQuoteResponse> </pre>
Prerequisites	<ul style="list-style-type: none"> •
Restrictions	<ul style="list-style-type: none"> •

3.3 Bearer, Term and Supplier Specific Use Cases

3.3.1 Use Case 1: Filtering by Bearer

The elements <bearers> and <bearer> are optional and allow for requesting specific access types. If present, the server will request quotes for only the input bearers, which can help speed up the quotation process and reduce the number of results returned.

URI	http://<API_URL>/access-external-ws/ces/v1/quote
Method	POST

Request XML	<pre> <NewQuoteRequest> <ClientId>169</ClientId> <Reference>Example_BearerFilter</Reference> <Product>Internet Access (Wires Only)</Product> <Bearers> <Bearer>FTTC-80</Bearer> <Bearer>100Mb Fibre</Bearer> </Bearers> <CircuitSpeed>45</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> <SiteAddress> <BuildingName>Kings House</BuildingName> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> </pre>
Response XML	
Prerequisites	<ul style="list-style-type: none"> •
Restrictions	<ul style="list-style-type: none"> •

3.3.2 Use Case 2: Filtering by Contract Term

As with bearers in 3.3.1, a list of contract term elements can also optionally be supplied to narrow down the requested quote options. These are entered using the <contractTerms> and <contractTerm> elements.

URI	http://<API_URL>/access-external-ws/ces/v1/quote
Method	POST
Request XML	<pre> <NewQuoteRequest> <ClientId>169</ClientId> <Reference>Example_ContractTermFilter</Reference> <Product>Internet Access (Wires Only)</Product> <ContractTerms> <ContractTerm>12 Months</ContractTerm> </ContractTerms> <CircuitSpeed>45</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> <SiteAddress> <BuildingName>Kings House</BuildingName> </pre>

	<pre> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> </pre>
Response XML	
Prerequisites	•
Restrictions	•

3.3.3 Use Case 3: Filtering by Supplier

Specific suppliers can also be entered when raising a quote. These should be specified using the <suppliers> and <supplier> elements as outlined below.

URI	http://<API_URL>/access-external-ws/ces/v1/quote
Method	POST
Request XML	<pre> <NewQuoteRequest> <ClientId>169</ClientId> <Reference>Example_SupplierFilter</Reference> <Product>Internet Access (Wires Only)</Product> <Suppliers> <Supplier>BT Wholesale</Supplier> </Suppliers> <CircuitSpeed>45</CircuitSpeed> <Codec>G711</Codec> <Channels>60</Channels> <SiteAddress> <BuildingName>Kings House</BuildingName> <BuildingNumber></BuildingNumber> <SubPremises></SubPremises> <Street>Kings Road West</Street> <Town>Newbury</Town> <Postcode>RG14 5BY</Postcode> </SiteAddress> </NewQuoteRequest> </pre>
Response XML	
Prerequisites	•
Restrictions	•

Appendix

A1. XML Schema

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:ds="http://gamma.co.uk/ds" attributeFormDefault="qualified"
  elementFormDefault="qualified" targetNamespace="http://gamma.co.uk/ds"
  version="1.0">

  <xs:element name="NewQuoteRequest" type="ds:newQuoteRequest"/>

  <xs:element name="NewQuoteResponse" type="ds:newQuoteResponse"/>

  <xs:element name="Quote" type="ds:quote"/>

  <xs:element name="fieldError" type="ds:fieldError"/>

  <xs:element name="globalError" type="ds:globalError"/>

  <xs:element name="siteAddress" type="ds:siteAddress"/>

  <xs:complexType name="fieldError">
    <xs:sequence>
      <xs:element minOccurs="0" name="Field" type="xs:string"/>
      <xs:element minOccurs="0" name="ErrorCode" type="ds:errorCodeEnum"/>
      <xs:element minOccurs="0" name="Message" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="globalError">
    <xs:sequence>
      <xs:element minOccurs="0" name="ErrorCode" type="ds:errorCodeEnum"/>
      <xs:element minOccurs="0" name="Message" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="quote">
    <xs:sequence>
      <xs:element minOccurs="0" name="CAE" type="xs:string"/>
      <xs:element minOccurs="0" name="Reference" type="xs:string"/>
      <xs:element minOccurs="0" name="Product" type="xs:string"/>
      <xs:element minOccurs="0" name="Supplier" type="xs:string"/>
      <xs:element minOccurs="0" name="Bearer" type="xs:string"/>
      <xs:element minOccurs="0" name="CircuitSpeed" type="xs:int"/>
      <xs:element minOccurs="0" name="Codec" type="xs:string"/>
      <xs:element minOccurs="0" name="Channels" type="xs:int"/>
      <xs:element
        minOccurs="0" name="PrimaryRouterModel"
        type="xs:string"/>
      <xs:element minOccurs="0" name="BackupRouterModel" type="xs:string"/>
      <xs:element minOccurs="0" name="Backup" type="xs:string"/>
      <xs:element minOccurs="0" name="InstallPrice" type="xs:decimal"/>
    </xs:sequence>
  </xs:complexType>

```

```

        <xs:element minOccurs="0" name="MonthlyRentalPrice"
type="xs:decimal"/>
        <xs:element minOccurs="0" name="ContractTerm" type="xs:string"/>
    </xs:sequence>
</xs:complexType>

<xs:complexType name="siteAddress">
    <xs:sequence>
        <xs:element minOccurs="0" name="BuildingName" type="xs:string"/>
        <xs:element minOccurs="0" name="BuildingNumber" type="xs:string"/>
        <xs:element minOccurs="0" name="SubPremises" type="xs:string"/>
        <xs:element name="Street" type="xs:string"/>
        <xs:element name="Town" type="xs:string"/>
        <xs:element name="Postcode" type="xs:string"/>
    </xs:sequence>
</xs:complexType>

<xs:complexType name="newQuoteRequest">
    <xs:annotation>
        <xs:documentation><![CDATA[A New Quote Request
Used to generate a new Quote

(author): fjones
(version): 1.0]]></xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element name="ClientId" type="xs:int">
            <xs:annotation>
                <xs:documentation><![CDATA[Client id]]></xs:documentation>
            </xs:annotation>
        </xs:element>
        <xs:element name="Reference" type="xs:string">
            <xs:annotation>
                <xs:documentation><![CDATA[Customer
reference]]></xs:documentation>
            </xs:annotation>
        </xs:element>
        <xs:element name="Product" type="ds:productEnum"/>
        <xs:element minOccurs="0" name="ContractTerms">
            <xs:complexType>
                <xs:sequence>
                    <xs:element maxOccurs="unbounded" minOccurs="0"
name="ContractTerm" type="ds:contractTermEnum"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element minOccurs="0" name="Suppliers">
            <xs:complexType>
                <xs:sequence>
                    <xs:element maxOccurs="unbounded" minOccurs="0" name="Supplier"
type="ds:supplierEnum"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element minOccurs="0" name="Bearers">
            <xs:complexType>

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        <xs:sequence>
          <xs:element maxOccurs="unbounded" minOccurs="0" name="Bearer"
type="ds:bearerEnum"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element minOccurs="0" name="BackupBearers">
      <xs:complexType>
        <xs:sequence>
          <xs:element
name="BackupBearer" type="ds:backupBearerEnum"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element minOccurs="0" name="CircuitSpeed" type="xs:int">
      <xs:annotation>
        <xs:documentation><![CDATA[The minimum circuit speed in Mbp/s
Only include if a product with data has been selected]]></xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element minOccurs="0" name="Codec" type="ds:codecEnum">
      <xs:annotation>
        <xs:documentation><![CDATA[The voice codec
Only include if a product with voice has been selected]]></xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element minOccurs="0" name="Channels" type="xs:int">
      <xs:annotation>
        <xs:documentation><![CDATA[The number of required voice channels
Only include if a product with voice has been selected]]></xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element minOccurs="0" name="CLI" type="xs:string"/>
    <xs:element name="SiteAddress" type="ds:siteAddress">
      <xs:annotation>
        <xs:documentation><![CDATA[The Site Address]]></xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="newQuoteResponse">
  <xs:annotation>
    <xs:documentation><![CDATA[A Response to a New Quote Request
(author): fjones
(version): 1.0]]></xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element minOccurs="0" ref="ds:NewQuoteRequest"/>
    <xs:element minOccurs="0" name="GlobalErrors">
      <xs:complexType>
        <xs:sequence>
          <xs:element
name="GlobalError" type="ds:globalError"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>

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    </xs:complexType>
  </xs:element>
  <xs:element minOccurs="0" name="FieldErrors">
    <xs:complexType>
      <xs:sequence>
        <xs:element
          name="FieldError" type="ds:fieldError"
          maxOccurs="unbounded" minOccurs="0"
        />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element minOccurs="0" name="Quotes">
    <xs:complexType>
      <xs:sequence>
        <xs:element
          ref="ds:Quote"
          maxOccurs="unbounded" minOccurs="0"
        />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:sequence>
</xs:complexType>

<xs:simpleType name="errorCodeEnum">
  <xs:restriction base="xs:string">
    <xs:enumeration value="E0114"/>
    <xs:enumeration value="E0111"/>
    <xs:enumeration value="E0113"/>
    <xs:enumeration value="E0115"/>
    <xs:enumeration value="E0123"/>
    <xs:enumeration value="E0202"/>
    <xs:enumeration value="E0003"/>
    <xs:enumeration value="E0104"/>
    <xs:enumeration value="E0002"/>
    <xs:enumeration value="E0112"/>
    <xs:enumeration value="E0117"/>
    <xs:enumeration value="E0001"/>
    <xs:enumeration value="E0116"/>
    <xs:enumeration value="E0126"/>
    <xs:enumeration value="E0102"/>
    <xs:enumeration value="E0211"/>
    <xs:enumeration value="E0106"/>
    <xs:enumeration value="E0107"/>
    <xs:enumeration value="E0109"/>
    <xs:enumeration value="E0124"/>
    <xs:enumeration value="E0110"/>
    <xs:enumeration value="E0203"/>
    <xs:enumeration value="E0210"/>
    <xs:enumeration value="E0122"/>
    <xs:enumeration value="E0213"/>
    <xs:enumeration value="E0201"/>
    <xs:enumeration value="E0105"/>
    <xs:enumeration value="E0101"/>
    <xs:enumeration value="E0118"/>
    <xs:enumeration value="E0121"/>
    <xs:enumeration value="E0120"/>
    <xs:enumeration value="E0108"/>
    <xs:enumeration value="E0125"/>
  </xs:restriction>
</xs:simpleType>

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    <xs:enumeration value="E0207"/>
    <xs:enumeration value="E0212"/>
    <xs:enumeration value="E0206"/>
    <xs:enumeration value="E0205"/>
    <xs:enumeration value="E0209"/>
    <xs:enumeration value="E0127"/>
    <xs:enumeration value="E0208"/>
    <xs:enumeration value="E0119"/>
    <xs:enumeration value="E0103"/>
    <xs:enumeration value="E0204"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="productEnum">
  <xs:annotation>
    <xs:documentation><![CDATA[A Gamma Product
+-----+-----+-----+
|           Product           | Data | Voice |
+-----+-----+-----+
| Internet Access (Wires Only) | Yes  | No   |
| Internet Access (Managed)  | Yes  | No   |
| Horizon Over Ethernet       | No   | Yes  |
| Converged Horizon and Internet Access | Yes  | Yes  |
| SIP over Ethernet          | No   | Yes  |
| Converged SIP and Internet Access | Yes  | Yes  |
+-----+-----+-----+
+]]]></xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:enumeration value="Gamma SIP (Voice Only)"/>
    <xs:enumeration value="Gamma SIP (Converged)"/>
    <xs:enumeration value="Horizon (Converged)"/>
    <xs:enumeration value="Horizon (Voice Only)"/>
    <xs:enumeration value="Internet Access (Wires Only)"/>
    <xs:enumeration value="Internet Access (Managed)"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="contractTermEnum">
  <xs:restriction base="xs:string">
    <xs:enumeration value="60 Months"/>
    <xs:enumeration value="12 Months"/>
    <xs:enumeration value="36 Months"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="supplierEnum">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Gamma"/>
    <xs:enumeration value="Virgin Media"/>
    <xs:enumeration value="TalkTalk Business"/>
    <xs:enumeration value="BT Wholesale"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="bearerEnum">

```

```
<xs:restriction base="xs:string">
  <xs:enumeration value="1Gb Fibre"/>
  <xs:enumeration value="FTTC-80"/>
  <xs:enumeration value="100Mb Fibre"/>
  <xs:enumeration value="EFM"/>
  <xs:enumeration value="FTTC-40"/>
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="backupBearerEnum">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="FTTC-40/10"/>
    <xs:enumeration value="FTTC-80/20"/>
    <xs:enumeration value="ADSL2+"/>
    <xs:enumeration value="ADSL Max Premium"/>
    <xs:enumeration value="AnnexM"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="codecEnum">
  <xs:restriction base="xs:string">
    <xs:enumeration value="G711"/>
    <xs:enumeration value="G729"/>
  </xs:restriction>
</xs:simpleType>
</xs:schema>
```