

# UK Government Gateway

## Gateway Document Submission Protocol

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## Revision & Sign-Off Sheet

### Change Record

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Document Status has the following meaning:

- **Drafts** – These are documents for review and liable to significant change.
- **Baseline Candidate** – The document is ready for final issuing and is only expected to have further minor updates.
- **Baseline** – The document is published and is not expected to change significantly. All changes will be listed in the change record table.

Note that minor updates or corrections to a document may lead to multiple versions at a particular status.

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# 1. Introduction

## 1.1. Abstract

This document specifies the submission and query protocol implemented for the Government Gateway. Any further refinements and modifications to this protocol will appear in subsequent revisions of this document. This document shows, and any future versions will continue to show, any changes that are made between the various revisions of this protocol in order to provide technical information to assist with migrating to future versions of the protocol.

## 1.2. Overview

The submission and query protocol, based on a schema known as the *GovTalk* schema, defines the interaction between client applications (browser or server based) and the Gateway. This document does not define the interaction between the gateway and the departmental back-end systems. The protocol provides a mechanism for submitting documents that are destined for back-end systems to the Gateway. It also provides an acknowledgment polling scheme for subsequently querying the status of a message as it passes through the Gateway.

Documents are submitted to the Gateway, preferably in eXtensible Markup Language (XML) format over the Hypertext Transport Protocol (HTTP) or alternatively as Hyper Text Markup Language (HTML) format. This document defines the native eXtensible Markup Language (XML) messaging, but does not discuss the alternative Hyper Text Markup Language (HTML) based formats.

An implementation is not compliant to the Gateway's Document Submission Protocol if it fails to satisfy one or more of the MANDATORY level requirements for the verbs it implements.

An implementation that satisfies all the MANDATORY and OPTIONAL level requirements for the protocols is said to be *unconditionally compliant*.

An implementation that satisfies all the MANDATORY level requirements, but not all the OPTIONAL level requirements, for the protocol is said to be *conditionally compliant*.

## 1.3. Typographical Conventions

Element and attribute names are presented in a monospace font, e.g. `CorrelationID`. Note that this applies to the names; when referring to a value, either the textual description "Correlation ID" or a term such as "the value of the `CorrelationID` element" is used.

Literal values are shown in bold. For example, "the value of the Qualifier must be set to **request**".

XPath expressions are used to identify elements. These are not full expressions, but the subset required to make it obvious which element is being referred to. For example, the type of an error is shown as `Error/Type`, not `GovTalkMessage/GovTalkDetails/GovTalkErrors/Error/Type`.

## 1.4. Base Requirements

The client application must be capable of generating complete HTTP 1.1 POST requests and receiving and interpreting entire HTTP 1.1 Response messages. All traffic will be encoded using the UTF-8 standard. The client application must also be capable of negotiating a 128-bit Secure Sockets Layer (SSL) connection with the server.

**Note:** The server will not require client certificates for client authentication. Instead the server will present a server side certificate in order to establish the SSL connection.

## 1.5. Audience

This document is intended for architects, developers and other parties interested in building Gateway client applications. It is assumed the reader is familiar with the structure and semantics of the GovTalk Envelope (see document entitled 'GovTalk Message Envelope' for further information).

## 1.6. Compliance

This document complies with the e-GIF. It should comply with version 2.0 of the GovTalk envelope schema. It complies with the GovTalk error response schema and the signing requirements for the Government Gateway.

## 2. Protocol Overview

The Submission and Query protocol provides an interface to the Government Gateway and is based on the two design principles of implementing customer design goals and safeguarding the integrity of Gateway should any customer interface fail to behave as expected. This document is divided into the following sections:

- Section 2 provides an overview of the protocol;
- Section 3 describes a client using the protocol as a state engine;
- Section 4 provides examples of the use of the protocol;
- Section 5 provides information on the use of HTTP headers;
- Section 6 describes each message in detail.

### 2.1. Gateway Interface Model

The protocol provides an interface to the Gateway, and is based on two key design principles:

- Implementing customer design goals
- Safeguarding the integrity of the Gateway should any client or back-end system interface fail to behave as expected

The main customer interoperability goals are to support:

- Many transaction types
- Messages of variable size
- Asynchronous and synchronous client side behaviour
- Loose-coupling between Gateway and back-end systems
- Variable response times from back-end systems ranging from seconds to weeks

To best meet these objectives and to safeguard Gateway integrity, the submission protocol adopts an asynchronous design model. This is a common approach in designing messaging and e-Commerce systems that need to scale well and integrate with back office systems whilst still enabling client side developers to provide a compelling and safe user experience. However, guidelines on how developers can build client applications that behave in a synchronous or asynchronous manner is beyond the scope of this document.

The Gateway implements the following key processing steps when handling document submissions:

1. A message is inspected for the appropriate data within the GovTalk envelope elements to ensure it meets the criteria specified in this document.
2. The authentication credentials are extracted and the submission authorized against the requested service.



3. Errors within the document or an authorisation failure will result in an error being returned to the client.
4. A CorrelationID (handle) will be returned to the client. This value is valid only for the duration of the conversation between the client and Gateway for any one submission.
5. The Gateway will deliver the message to the relevant back-end system using a reliable delivery mechanism.
6. The back-end system will generate a suitable response following appropriate business processing.
7. The Gateway will correlate and persist the response received from the back-end system.
8. The Gateway will respond to client requests to confirm when a message has been processed and return any associated response documents.
9. The Gateway will delete all response resources persisted on the Gateway in response to a client delete request.

## 2.2. Message Types

The submission and query protocol comprises ten basic message types. Four message types originate from the client browser or application (SUBMISSION\_REQUEST, SUBMISSION\_POLL, DATA\_REQUEST and DELETE\_REQUEST) and six originate from the Gateway (SUBMISSION\_ACKNOWLEDGEMENT, SUBMISSION\_ERROR, SUBMISSION\_RESPONSE, DATA\_RESPONSE, DELETE\_ACKNOWLEDGEMENT and DELETE\_RESPONSE).

The following sections outline the protocol. Each message within the protocol is described in detail in the *Message Definitions* section.

## 2.3. Submission URL

The current target URL for submitting documents to the Gateway is:

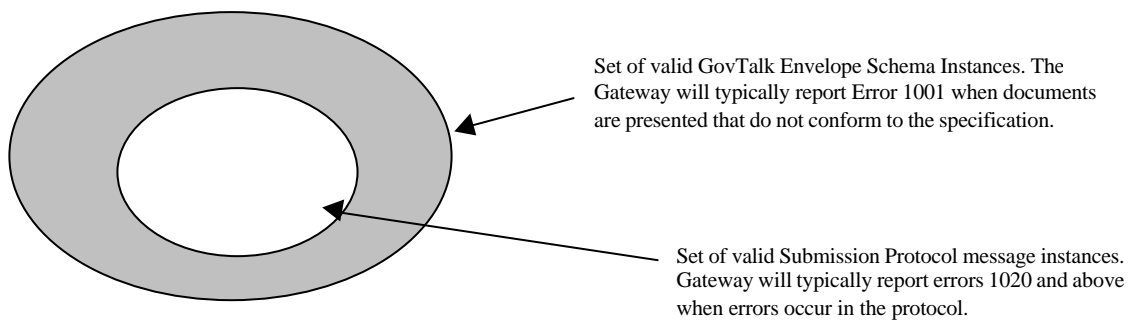
<https://secure.gateway.gov.uk/submission>

## 2.4. Protocol Constraints

The submission protocol uses the GovTalk schema envelope as the basis for each protocol message. All messages exchanged during execution of the protocol **must** conform to the GovTalk schema definition. In general, many of the protocol elements can be omitted (particularly when issuing the Poll and Delete verbs). See the *Message Definitions* section for full details on the requirements for each verb within the protocol.

Often a message can conform to the GovTalk envelope schema but violate a submission protocol rule. When this occurs the Gateway provides additional error messages that illustrate the error to the client. See *Appendix C: Error / Return Codes* for a complete list of these error codes.

The following diagram illustrates the relationship between the requirements of the submission protocol and the GovTalk schema definition.



## 2.5. Formatting/Encoding

All HTTP POST documents should be encoded using the UTF-8 encoding scheme. The XML element ordering must also follow the implicit default sequence ordering defined by the layout of the schema. Unless otherwise specified, fields used by the protocol are case sensitive.

## 2.6. The GovTalk Namespace

All incoming messages received by the Gateway must be associated with the GovTalk schema namespace. This is currently defined at:

[http://www.govtalk.gov.uk/schemasstandards/schemalibrary\\_schema.asp?schemaid=216](http://www.govtalk.gov.uk/schemasstandards/schemalibrary_schema.asp?schemaid=216)

The GovTalk envelope must have a default namespace value of <http://www.govtalk.gov.uk/CM/envelope>

For document submissions, the Body of the GovTalk schema must contain a single, root element for the business document being transmitted. This root element must be associated with a namespace other than <http://www.govtalk.gov.uk/CM/envelope>. An example is shown below:

```
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope" >
  <EnvelopeVersion/>
  <Header>
    <MessageDetails>
      <Class/>
      <Qualifier/>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body>
    <Payload xmlns="abc:namespace:xyz">
      .....
    </Payload>
  </Body>
</GovTalkMessage>
```

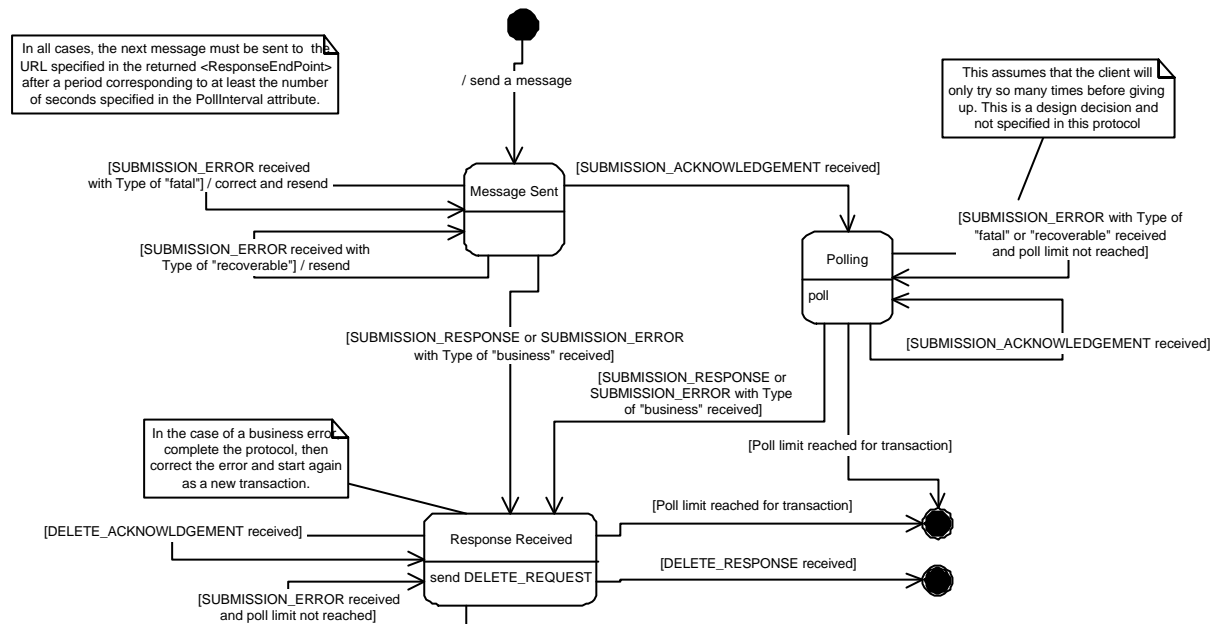
Response messages returned to the client will also contain a root element scoped by another namespace. As with incoming messages, only the GovTalk header values

are of interest to the Gateway. Both incoming and returned payloads are treated as opaque.

The values inserted into the GatewayTimestamp element of the GovTalk schema (if this element is presented by the client) will be unique for all messages generated and processed by the Gateway. The timestamp value added to the ongoing document will be different to that returned in the associated submit/acknowledge message returned to the client. These messages are not linked by the timestamp value as they may be generated/processed at significantly different times and the timestamps are inserted into physically different documents.

### 3. Protocol States

This diagram shows the submitting client as a state engine, with the states and transitions between them. Examples of message sequences are shown in section 4.



## 4. Message Types

The protocol makes extensive use of the envelope portion of the GovTalk schema. Each document submitted to the Gateway must include a Qualifier element immediately after the Class element. Together these two elements denote the message type.

In general four messages will originate from the client browser or application:

- SUBMISSION\_REQUEST
- SUBMISSION\_POLL
- DATA\_REQUEST
- DELETE\_REQUEST

While the six will originate from the Gateway:

- SUBMISSION\_ACKNOWLEDGEMENT
- SUBMISSION\_ERROR
- SUBMISSION\_RESPONSE
- DATA\_RESPONSE
- DELETE\_RESPONSE
- DELETE\_ACKNOWLEDGE

When submitting any message type to the Gateway it is the client's responsibility to ensure each message conforms to the relevant syntactical rules for that particular type of message. These rules are given in the section *Message Definitions* later in this document.

### 4.1. Document Submission

The calling application initiates communication with the Gateway by sending a SUBMISSION\_REQUEST. The Gateway sends one of the following types of replies to this message:

- SUBMISSION\_ACKNOWLEDGEMENT
- SUBMISSION\_RESPONSE
- SUBMISSION\_ERROR

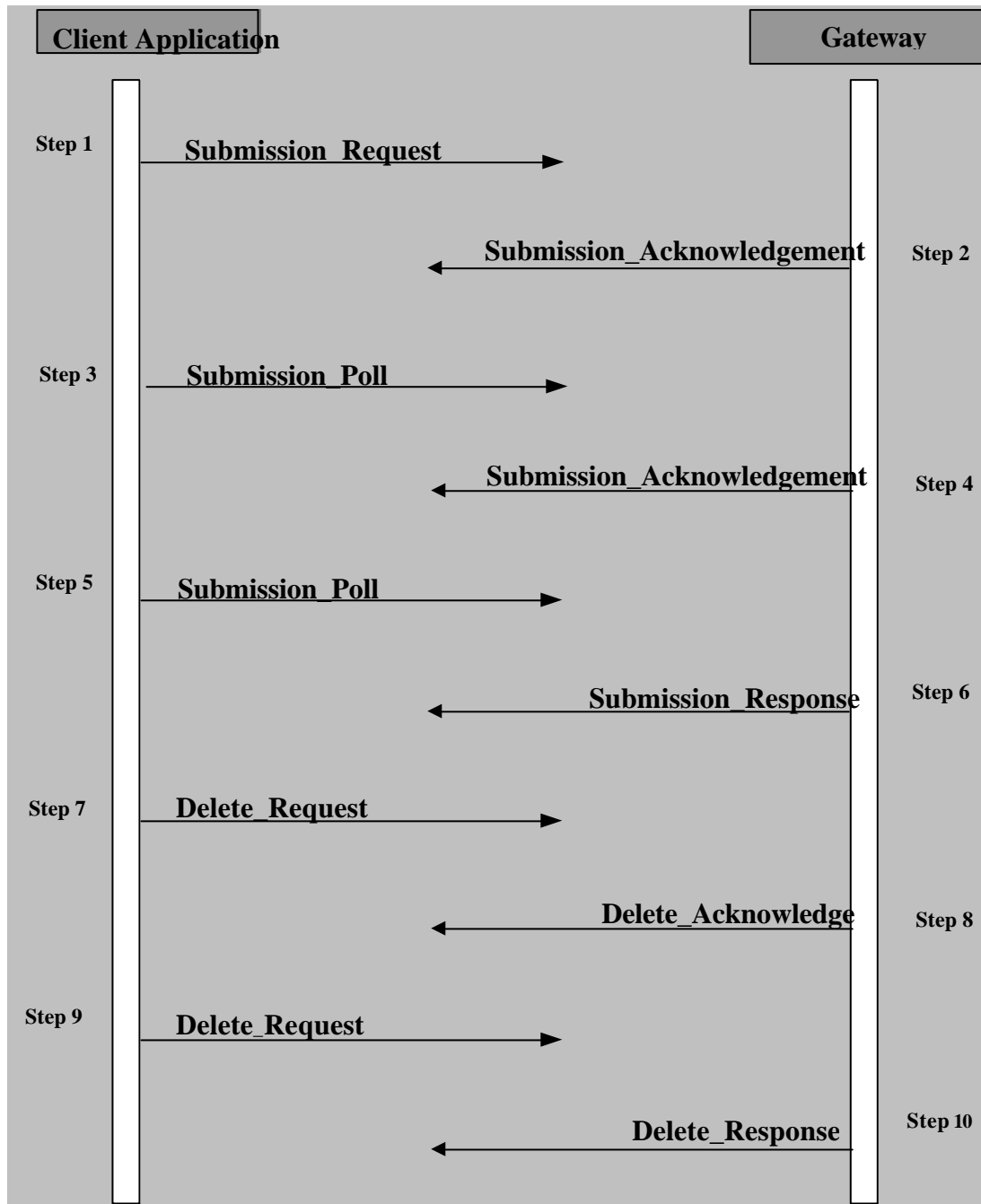
If a SUBMISSION\_ACKNOWLEDGEMENT is returned the client application must keep polling the Gateway until it receives either a SUBMISSION\_RESPONSE or SUBMISSION\_ERROR. This typically means that the client application and the Gateway will keep exchanging pairs of polls and acknowledgements until either a response or error state is reached. Once a SUBMISSION\_RESPONSE has been received the client application must then send a DELETE\_REQUEST to the Gateway for the deletion of the original message. Only when the client application has received a DELETE\_RESPONSE message back from the Gateway can a transaction be considered to be finished.

However, transmitting messages over the Internet has no guarantee of delivery over HTTP/HTTPS. This protocol thus provides the DATA\_REQUEST and DATA\_RESPONSE pair of message types to enable a client to request, (and the Gateway to respond to) details of all documents the Gateway is currently handling on its behalf. This will enable the client to check that its messages have been transmitted successfully.

Four basic submission scenarios are presented here; a successful submission, a submission attempt with a fatal protocol error, a submission attempt with a recoverable error and a submission attempt with a business error. The load on the Gateway may affect the exact set of messages presented in each case.

#### **4.1.1 Example of Successful Submission**

The steps typically followed by a successful document submission are illustrated by the following diagram, and its associated table.



**Note:** The SUBMISSION\_ERROR verb is not shown in the diagram (or the table below), as this illustration represents a successful document submission. If an error were to occur in the original document submission the calling application would receive a SUBMISSION\_ERROR reply from the Gateway instead of a SUBMISSION\_RESPONSE.

Step	Action
Step 1	A SUBMISSION_REQUEST is sent to the Gateway to indicate that a new document is being submitted for processing

Step	Action
Step 2	The Gateway replies with a SUBMISSION_ACKNOWLEDGEMENT to indicate to the client application that the document hasn't yet been processed [it is either in the process of being sent to, or awaiting a response from, the message's destination. It does however return a CorrelationID to the client application which the user can use as an identifier for this document in future poll requests.
Step 3	The client application waits for the period specified in the PollInterval attribute of the GovTalk header and checks the progress of the submission using the SUBMISSION_POLL verb.
Step 4	The Gateway still hasn't processed the message so again replies with a SUBMISSION_ACKNOWLEDGEMENT to indicate this to the client application. .
Step 5	The client application again waits for period specified in the PollInterval attribute of the GovTalk header and checks the progress of the submission using the SUBMISSION_POLL verb.
Step 6	The Gateway has now processed the message so replies with a SUBMISSION_RESPONSE message to indicate that the client application that it has finished processing the document.
Step 7	Having received a SUBMISSION_RESPONSE the client application submits a DELETE_REQUEST message to the Gateway to delete the message from the system.
Step 8	The Gateway is busy and is currently unable to delete the message so responds with a DELETE_ACKNOWLEDGE message
Step 9	The user resubmits the DELETE_REQUEST message to see if the Gateway has deleted the message yet.
Step 10	The Gateway responds to let the client application know that the message has been deleted with a DELETE_RESPONSE.

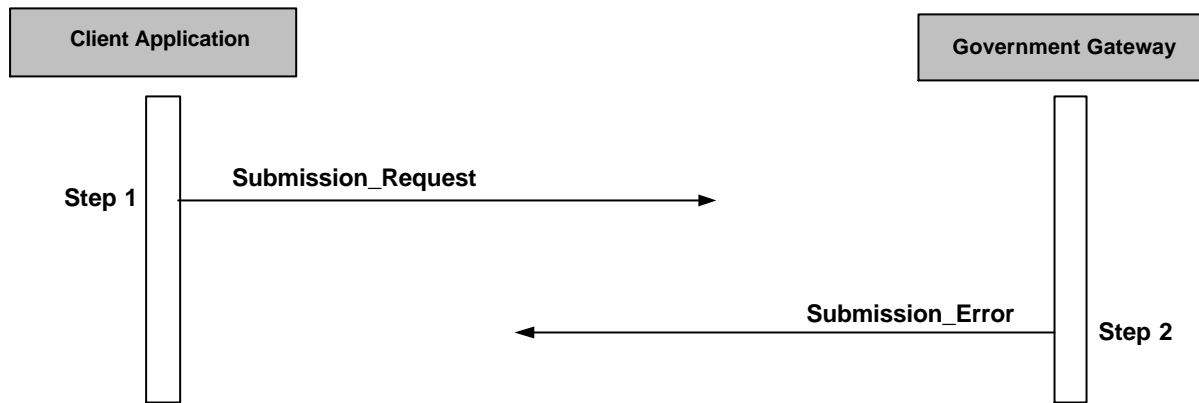
**Note:** Each successful document submission won't necessarily need to follow each step shown above: some steps (for example 4 and 5) could be missed out.

The Gateway may delete all references and resources related to a document submission after a significant period of time has elapsed since the client last sent any type of message relating to that submission. This ensures stale, duplicate or orphaned submissions are not persisted indefinitely. Transactions will complete (i.e., go from their initial submission state to a deletion response state) in a duration appropriate to the transaction. Transactions spanning longer durations will be managed according to their transaction type.

#### 4.1.2 Example of a Submission with a Fatal Protocol Error

A protocol error may occur at any stage of the protocol. For example, the initial SUBMISSION\_REQUEST may be missing the Class element, or a SUBMISSION\_POLL may be missing a CorrelationID. Either of these errors is classed as fatal since the Gateway does not have sufficient information to process the message. In this case, the Gateway will return an SUBMISSION\_ERROR message with an Error/Type of **fatal**:





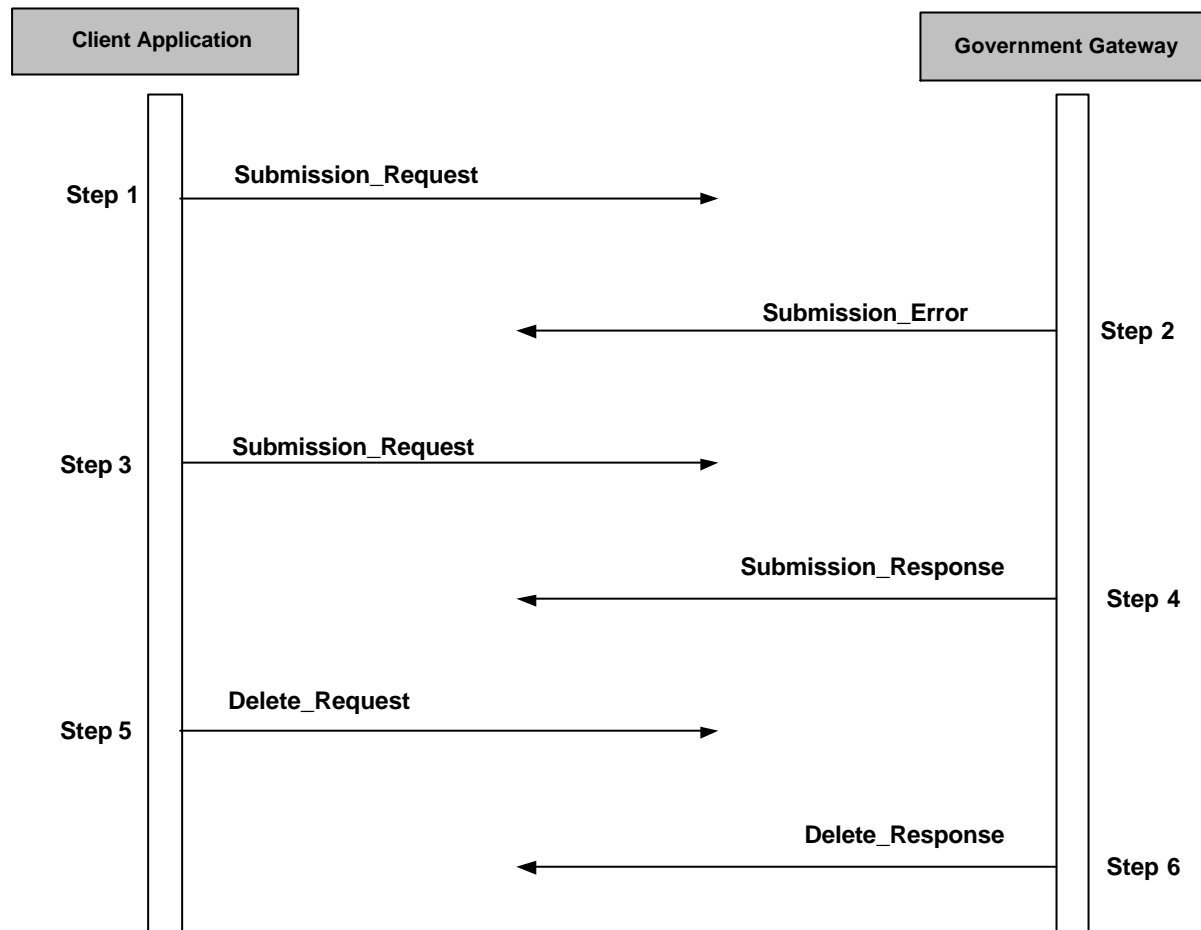
The behaviour of the client system depends on the point at which the error occurred. If the error occurred on a SUBMISSION\_REQUEST, the client should correct the error and resubmit the message. If it occurs later in the sequence, the client system must continue the sequence using the value of CorrelationID from the original SUBMISSION\_RESPONSE.

**Note:** the DATA\_REQUEST verb can be used to identify those submission sequences that have not completed successfully.

### 4.1.3 Example of a Submission with a Recoverable Error

Some Gateway-related errors are recoverable. Typically, these occur when the Gateway has a transient error, such as could be caused by overloading. In these cases, the Gateway will return a SUBMISSION\_ERROR message with an Error/Type of **recoverable** and the client must retry the verb that resulted in the error.

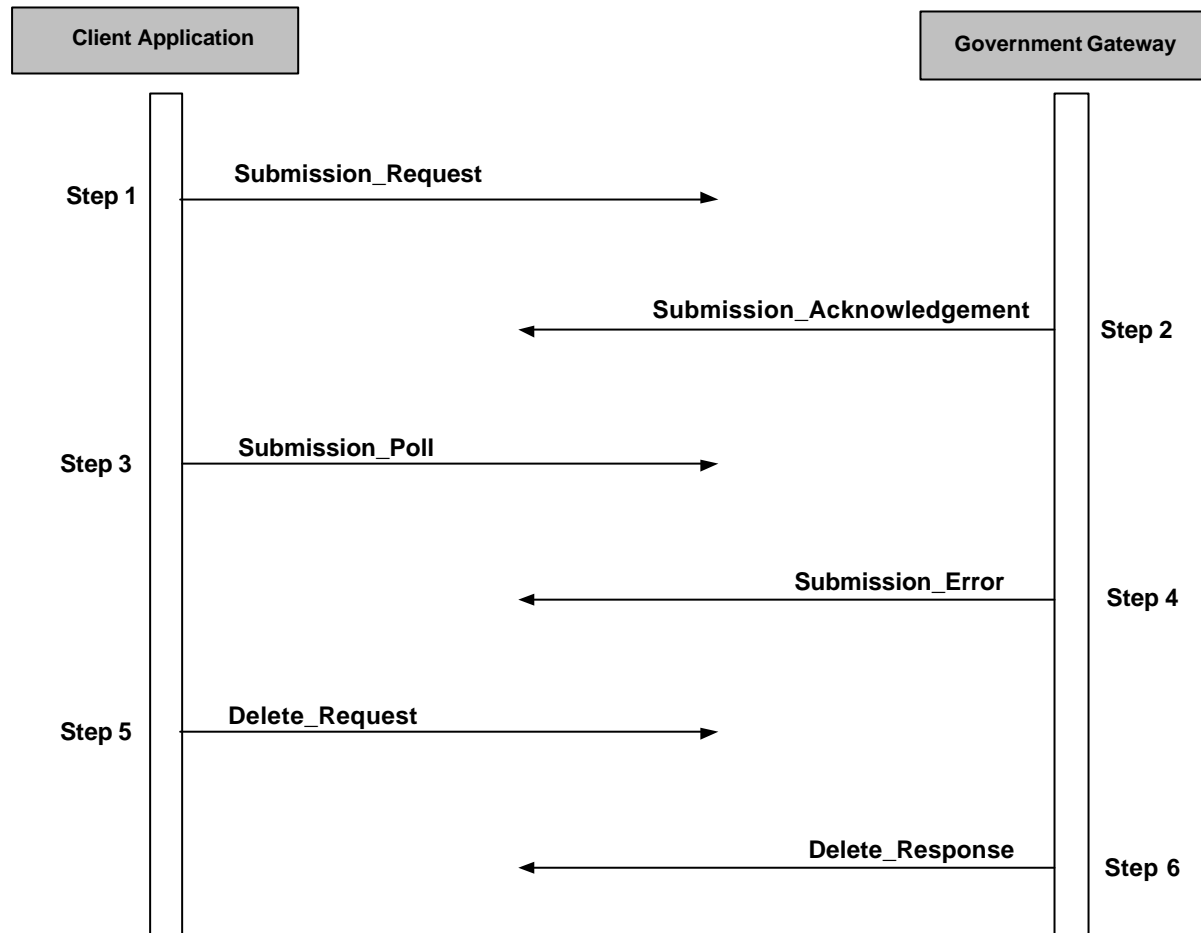
**Note:** the error response may give a new value for ResponseEndPoint and PollInterval, and these values must be used in the re-tried message.



Above is an example of a recoverable error.

#### 4.1.4 Example of a Submission with an Error in the Business Message

If a message contains a business-related error (perhaps a mandatory element is missing in the business message, or an illegal value has been entered), the Gateway will return an SUBMISSION\_ERROR message with an Error/Type of **business** to the client. In this case, the client must continue with the protocol until a DELETE\_RESPONSE has been received. The client should correct the error and re-submit as a new transaction.



## 4.2. Protocol States

There are five major protocol states which the conversation between the client and the Gateway can enter:

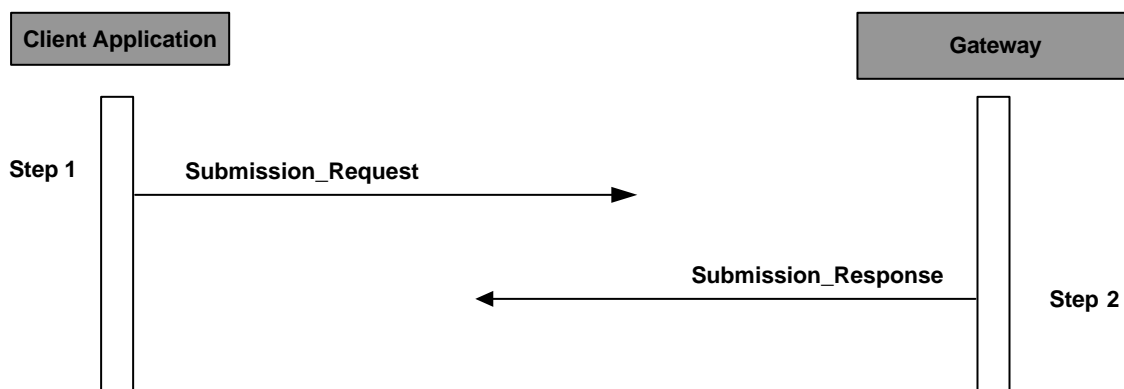
- *Submission*  
Entered as soon as the client first initiates communication with the Gateway.
- *Polling*  
Entered once the client has received a SUBMISSION\_ACKNOWLEDGEMENT message from the Gateway. The client must keep polling the Gateway until a SUBMISSION\_RESPONSE is received.
- *Response Received*  
Entered once the client has received a SUBMISSION\_RESPONSE from the Gateway.
- *Delete Response*  
Entered once the client sends a DELETE\_REQUEST to the Gateway to delete all message-related resources associated with a particular transaction.
- *Error State*  
Entered if the client receives any form of error response from the Gateway.

The five major states of the protocol are described in the following sections as are the special data request/data response states also supported by the submission protocol.

### 4.2.1 Submission State

The client application or browser initiates communication with the Gateway by submitting a document over HTTPS, encoded as UTF-8. The entire HTTP payload (as determined by the Content-Length in the HTTP header) must not exceed one megabyte in the Test Service.

The protocol now enters its submission state. The sequence of steps associated with a document submission during this state of the protocol is illustrated in the following diagram:



The submission request message must conform to the envelope schema.

Full details on all the elements that can be found in a submission request are given in the section *SUBMISSION\_REQUEST Message* together with a sample submission request.

After sending the SUBMISSION\_REQUEST message the client can receive any of the following types of Gateway generated messages:

- SUBMISSION\_ACKNOWLEDGEMENT
- SUBMISSION\_RESPONSE
- SUBMISSION\_ERROR

These message types are described in the following sections. Due to the asynchronous nature of the Gateway an immediate SUBMISSION\_RESPONSE is unlikely. However, client applications must be capable of handling all three message types in response to the initial submission.

#### 1.1.1.1 Submission Acknowledgment

If the client receives a SUBMISSION\_ACKNOWLEDGMENT message then the client must enter the Polling state. See the section *Polling State* for details.

#### 1.1.1.2 Submission Response

If the client receives a SUBMISSION\_RESPONSE message then the conversation between client application and the Gateway is said to be in the Response Received state. See the section *Response Received State*. Full details on all the elements that can be found in a submission response are given in the section *SUBMISSION\_RESPONSE Message* together with a sample submission response.

#### 1.1.1.3 Submission Error

If the client receives a SUBMISSION\_ERROR response then the conversation between the client and the Gateway is said to have entered an Error state. See the section *Submission Error* for details. The GovTalkErrors element in the returned header will contain the relevant error code. Errors returned by the Gateway will typically result from a badly formed request. However, unexpected errors within the Gateway itself may also result in an error response as may the inclusion of any invalid business data within the payload.

**Note:** The Test Service will not provide any back-end business validation of the submission contents.

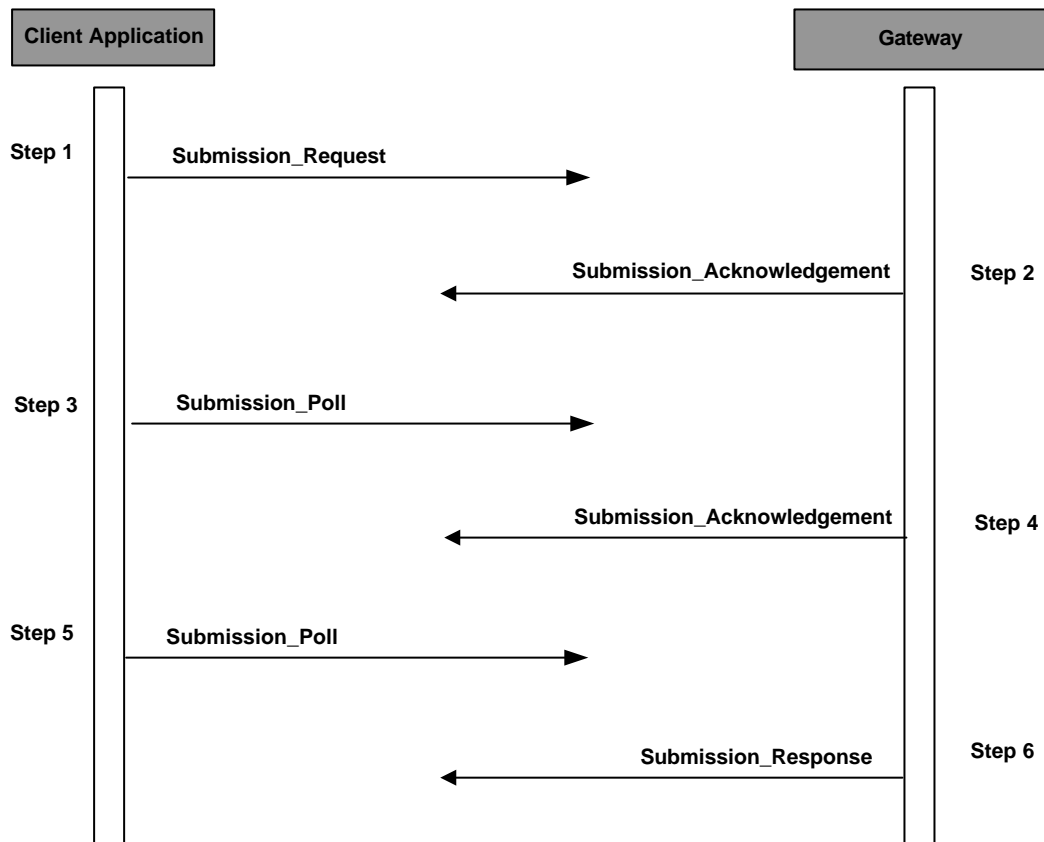
The client application should inspect the GovTalkErrors element for details of the error. If the client receives a SUBMISSION\_ERROR response from a SUBMISSION\_REQUEST message then the client application must resolve any document issues and resubmit.

### 4.2.2 Polling State

The protocol enters the polling state once the client receives a SUBMISSION\_ACKNOWLEDGEMENT from the Gateway. During the Polling state the client and Gateway will typically exchange SUBMISSION\_POLL/SUBMISSION\_ACKNOWLEDGEMENT message pairs until either a

SUBMISSION\_RESPONSE message or a SUBMISSION\_ERROR message is received, or the client application gives up polling during the current session.

The sequence of steps associated with a document submission during this state of the protocol is illustrated in the following diagram.



When the Gateway generates a SUBMISSION\_ACKNOWLEDGEMENT message it will populate the ResponseEndPoint element with a value set to a valid URL address. This element specifies the address, as a URL, which the client application must use for all subsequent polling for this particular message. This facility can be used to redirect client applications to alternative resources in the interests of load balancing or the event of system failure.

Each SUBMISSION\_ACKNOWLEDGEMENT message returned to the client may contain a different ResponseEndPoint element value and/or PollInterval attribute value from those contained in any previous acknowledgement. The client application must inspect and comply with this value whenever it receives a SUBMISSION\_ACKNOWLEDGEMENT message. If the URL value changes but the client application does not issue a subsequent request to the new location, an error may be returned by the Gateway.

In addition, the PollInterval attribute on the ResponseEndPoint element must be set to a positive numeric value. This attribute indicates the numbers of seconds the client application should leave before polling again, this is to enable the client application to display realistic response times for the user interface to report. If this value is set to **0** the client may issue another SUBMISSION\_POLL message at its earliest convenience. For all other values the client should wait (at least) the number of indicated seconds before generating the next SUBMISSION\_POLL message.

The client will receive a CorrelationID value in the first SUBMISSION\_ACKNOWLEDGEMENT message. This value must subsequently be used to conduct the client to Gateway conversation via the protocol verbs outlined in this document: and will be unique for the duration of the entire client to Gateway conversation. Each SUBMISSION\_POLL message must contain this unique CorrelationID value. Application software vendors can use this value to correlate submissions with their own transaction identifiers (usually included in the ChannelRouting block), but should avoid using this value as their only Submission/Transaction identifier.

**Note:** If the Gateway responds to a SUBMISSION\_POLL message with an error indicating the CorrelationID could not be located the client application may either resubmit the document or can contact the relevant organisation to try to reconcile the submission manually.

Full details on the elements that can be found in a submission poll message are given in the section *SUBMISSION\_POLL Message* while details on those found in a submission acknowledgement are given in *SUBMISSION\_ACKNOWLEDGEMENT Message*. Sample messages are included in both sections.

#### 4.2.3 Response Received State

When the Gateway responds to either a SUBMISSION\_POLL or a SUBMISSION\_REQUEST message with a SUBMISSION\_RESPONSE message, the dialog between client and Gateway then moves into the Response Received State. Any further SUBMISSION\_POLL messages from the client will solicit a SUBMISSION\_RESPONSE message appropriate to the value contained in the Transformation element of the SUBMISSION\_POLL message. Subsequent SUBMISSION\_RESPONSE messages returned by the Gateway will contain the same entries as the first with the following exceptions:

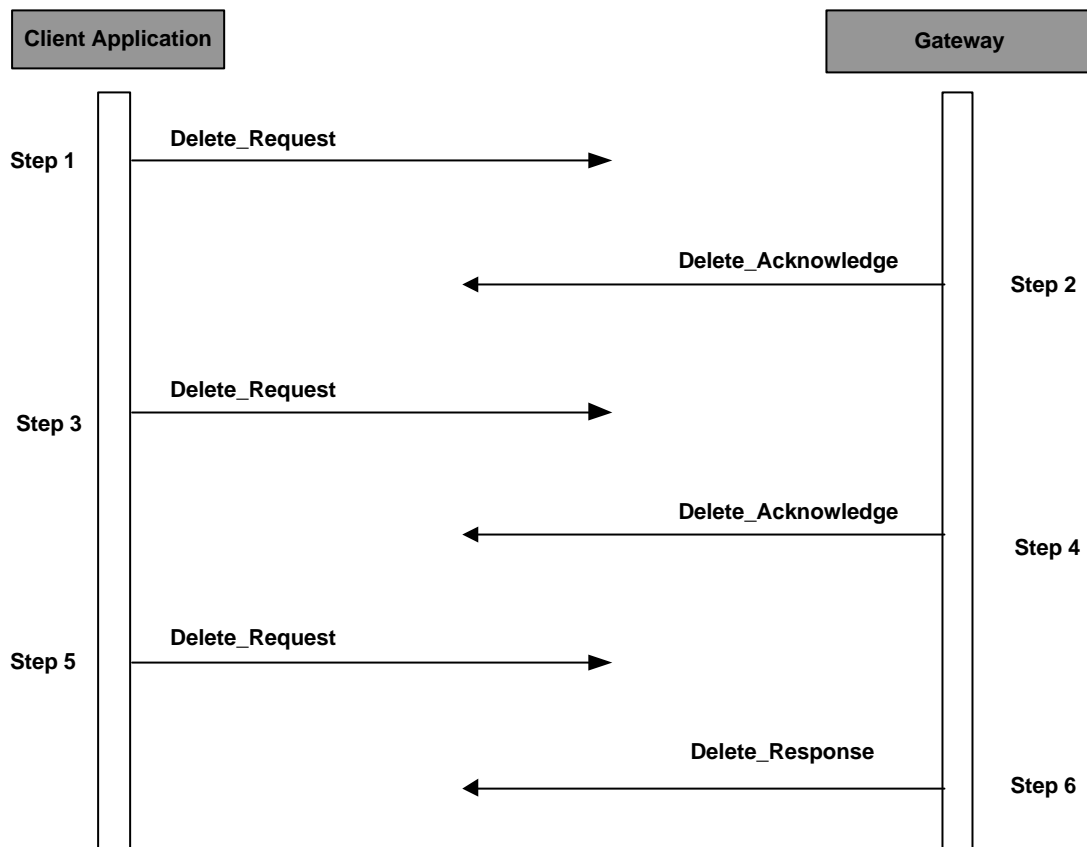
- ResponseEndPoint URL may be changed by the Gateway for any SUBMISSION\_POLL message
- When the conversation is deemed to be in the Response state the Gateway may change the PollInterval value.

For any SUBMISSION\_RESPONSE message the GovTalk Message/Body element may be populated with business responses. For the transaction types supported by the Gateway the Header and GovTalkErrors sub-sections will describe the overall state of the transmission and will be the only data deemed necessary for the Gateway to complete the function. The client may issue further requests for the SUBMISSION\_RESPONSE message, specifying any of the published Transformations in the Transformation element until the transaction reaches its close when the client finally issues a DELETE\_REQUEST message.

#### 4.2.4 Delete Response State

The protocol moves into its final state, the Delete Response State, when the client sends the Gateway a DELETE\_REQUEST message to indicate that it has received and processed the Gateway's SUBMISSION\_RESPONSE message.

The sequence of steps associated with a document submission during this state of the protocol is illustrated in the following diagram.



The `DELETE_REQUEST` message sent from the client informs the Gateway that all message-related resources associated with the supplied `CorrelationID` can be deleted. The client should resend the `DELETE_REQUEST` message to the URL specified in the `ResponseEndPoint` element, after the duration of time specified in the `PollInterval` element. The client must continue sending this message to the Gateway until it receives a `DELETE_RESPONSE` message from the Gateway to confirm the necessary resources have all been deleted. Prior to this, the Gateway may send a `DELETE_ACKNOWLEDGE` message to the client if the deletion of the document has not yet completed.

If the Gateway returns a `SUBMISSION_ERROR` message (indicating the `CorrelationID` was not found) instead of a `DELETE_ACKNOWLEDGE` or `DELETE_RESPONSE` the client should ensure the transmitted `CorrelationID` was correct before terminating the protocol conversation. An error message indicating the `CorrelationID` was not found indicates that either all the resources have been physically deleted or the `CorrelationID` is invalid.

After sending a `DELETE_REQUEST` message to the Gateway all subsequent `SUBMISSION_POLL` messages will result in an undefined response from the Gateway. Thus, once the client application begins sending `DELETE_REQUEST` messages it must send only `DELETE_REQUEST` messages to the Gateway until it has received a `DELETE_RESPONSE` message from the Gateway. Responses to any client messages sent to the Gateway following the first `DELETE_REQUEST` message are undefined.



#### 4.2.5 Error State

Whenever the client application receives an error message from the Gateway the conversation between the two is considered to be in the Error state. The GovTalkErrors element block in the header of the returned error message will contain the relevant error code. An error message can define either a Gateway protocol or transmission error, a transient recoverable error or a business level error communicated by the back-end system.

The details of business logic error messages are opaque to the Gateway and are discriminated by the error type element in the GovTalk errors element block. A value of **business** (error number 3001) indicates the document Body element contains an ErrorResponse document generated by the back-end system. This document is treated as another opaque payload by the Gateway. Client applications should process data in this document appropriately.

If the error type is indicated as **fatal** the client application should interpret the error code/text and take the necessary remedial actions e.g., correct credentials/correlation-id etc.).

Most error messages returned by the Gateway [i.e. RaisedBy is **Gateway**] imply that the client application should retransmit the previous message (which could be of type SUBMISSION\_REQUEST, SUBMISSION\_POLL or DELETE\_REQUEST). The client must retry the previous message after the PollInterval value of the error message has expired. The repeated message must be targeted at the URL specified in ResponseEndPoint element value of the SUBMISSION\_ERROR message. The client can issue a DELETE\_REQUEST message if the **CorrelationID** of error message returned by the Gateway contains a value.

See the section *SUBMISSION\_ERROR Message* for full details of all the elements that can be included in messages of this type, together with a sample message.

#### 4.3. Data Request/Response Messages

When transmitting messages over the Internet there is no guarantee of delivery from client to Server or Server to client over HTTP/HTTPS. This means that a message sent from a client application to the Gateway could be corrupted or lost when it is first transmitted to the Gateway, and vice versa when a reply is sent to the client from the Gateway. This unreliable transmission medium could lead the client to retransmit a document that has already been successfully received by the Gateway. Although this type of duplicate delivery is supported it is generally undesirable.

If a document failed to reach the Gateway the user should not make any assumptions about delivery. If no Acknowledgement, Response or Error message is received for a particular document submission, the client application should determine the outcome of the submission by sending a DATA\_REQUEST message to the Gateway.

The DATA\_REQUEST message type enables client applications to request details of the documents that the Gateway is currently handling for them. The **Class** of the document is specified in the call to filter the returned list of CorrelationIDs to that type of document. The client can also indicate date/time ranges to further narrow the search.

The DATA\_RESPONSE message returned from the Gateway in answer to a DATA\_REQUEST will list the documents that matched the criteria in the DATA\_REQUEST. The client application can therefore determine if the submitted document is being handled by the Gateway by virtue of the fact that the document appears in the DATA\_RESPONSE. Documents that have been deleted from the Gateway will not appear in the DATA\_RESPONSE. The client application should act promptly on documents with an unknown state since the Gateway will delete these documents after 30 days.

The DATA\_REQUEST message must be authenticated, and therefore requires the same credentials to be presented by the client as were used when submitting the original document.

For more details see sections *DATA\_REQUEST Message Definition* and *DATA\_RESPONSE Message*.

## 5. Advised HTTP Headers

The Transformation element of the GovTalk header enables documents to be submitted to the Gateway in three formats: XML, HTML and text. This process is invisible to the customers receiving the documents; it is handled within the Gateway. Documents submitted with most modern browsers and parsers use the default HTTP headers for these content-types and the developer is abstracted from this operation. This section is for developers who are using technologies that require that they present HTTP headers.

XML submissions to the Gateway happen via HTTP POST operations and the HTTP header Content-type MUST be set to **text/xml**. The Gateway requires this value if the Transformation element is set to **XML**.

HTML submissions are to provide support to applications that do not support the standards necessary to interact with the Gateway using XML. HTML forms can be submitted that contain base64 encoded XML in predefined form fields. The Gateway will decode the base64 encoded XML and validate the data on the server as if it had been a raw XML submission. The HTTP header for **Content-type** is normally **text/html** for HTML POST and GET verbs but when a form is being posted it must be set to **application/x-www-form-urlencoded**. If the Transformation element is set to **HTML** then this is the value that the Gateway expects to find in the HTTP **Content-type** header.

For errors encountered by the Gateway prior to schema validation (e.g. document too large/small or empty) the Gateway will encode the error using the scheme appropriate to the received submission.

## 6. Message Definitions

When submitting a document to the Gateway it is the responsibility of the client application to make sure that the document conforms to the appropriate schemas for both the envelope and the body of the document. Messages returned by the Gateway must also conform to these schemas.

The Gateway will validate all submitted documents against the envelope schema and will reject documents that do not meet the validation rules of the schemas with a SUBMISSION\_ERROR verb. Where the Gateway must return a SUBMISSION\_ERROR message in response to an invalid document, various defaults will be used in place of values that would otherwise be derived from the incoming document. For example, the GovTalk envelope schema requires an entry for the Class element in the Header block. If the submitted document is invalid or badly formed the Gateway will return the value **UndefinedClass** in the returned message's Class element.

Unless otherwise specified, white space characters should not be included in fields used to implement the protocol. Typically this relates to the text values for elements contained in the GovTalkMessage/Header/MessageDetails block.

The following sections of this document contain a description of each protocol verb and the XML elements from the GovTalk Header that are compulsory for each particular verb. Not all fields are used by each verb. Fields that are supplied but which are not used for a particular verb are simply ignored by the protocol. However, they are used as part of the overall validation process against the GovTalk schema definition.

It is recommended that only the minimum number of elements be presented for each verb. With the exception of the initial document submission verb, all other client generated messages are only required by the submission protocol and do not propagate any further than the Gateway. Including XML elements defined in the envelope schema (e.g., Organisation) in these verbs is therefore unnecessary and should be avoided.

Some information relates to all message types:

GatewayTest	<p>OPTIONAL for live submissions. If present must be set to <b>0</b>. MANDATORY for ISV Test Service, when it must be set to <b>1</b>.</p> <p>There have been instances where a valid submission request has been sent to the live Gateway, followed by a SUBMISSION_POLL message with &lt;GatewayTest&gt; test set to 1. This resulted in a 2004 error to the client who assumes that the submission had failed, even though the submissions were actually received at the back-end. When the client obtained updated software to correct this 'polling' problem they received an error advising that their submissions had already been received. This underlines the necessity of <i>always</i> specifying <b>0</b> in this element for live submissions.</p>
GatewayTimestamp	<p>MANDATORY. Contains a timestamp relating to the date/time the Gateway generated the acknowledgement message.</p> <p>The date/time returned by the Gateway will use the base system time (exclusive of adjustments such as daylight savings).</p> <p>In the case for Live Gateway the time will always be presented as Greenwich Mean Time (GMT).</p>

By way of illustration, when documents are submitted with the SUBMISSION\_REQUEST verb, a SUBMISSION\_ACKNOWLEDGEMENT, SUBMISSION\_ERROR or SUBMISSION\_RESPONSE is returned to the calling application as already discussed in the section *Message Types* earlier in this document. Most of the elements in the GovTalk header are not relevant for these returned messages so only a selection of these is used. Each verb is made succinct by only providing those elements which are necessary to the client application whilst achieving compliancy with the GovTalk header.

The GovTalk schema that is used as the basis of the Document Submission Protocol is the 2.0 release. However, to retain backward compatibility with some existing applications, gateway response messages may use the GovTalk schema 1.0 release.

These are located at:

[http://www.govtalk.gov.uk/schemasstandards/schemalibrary\\_list.asp?subjects=11](http://www.govtalk.gov.uk/schemasstandards/schemalibrary_list.asp?subjects=11)

The most up-to-date documentation pertaining to the GovTalk initiative can be found at the following location:

<http://www.govtalk.gov.uk> or obtained from [edt@cabinet-office.x.gsi.gov.uk](mailto:edt@cabinet-office.x.gsi.gov.uk).

## 6.1. SUBMISSION\_REQUEST Message

Source: Client/Application

Recipient: Gateway

Remarks:

The SUBMISSION\_REQUEST message is the first message sent between the client application and the Gateway. This message initiates the protocol handshake described in this document. Within this message some GovTalk envelope elements are OPTIONAL and can be omitted or must be left empty as shown below (whilst still conforming to the GovTalk envelope schema). The requirement to provide containing elements is not explicitly specified (i.e. GovTalkMessage/Header) when a contained child element is specified.

The following list details the elements and their values that can be present in this type of message:

GovTalkMessage: MANDATORY. A default namespace specified as ["http://www.govtalk.gov.uk/CM/envelope"](http://www.govtalk.gov.uk/CM/envelope).

EnvelopeVersion: MANDATORY. Set to **2.0** (xsd:string).

### **Header Block**

Class: MANDATORY. Indicates the class of XML document contained within the Body.

Qualifier: MANDATORY. Set to **request** (xsd:string).

Function: MANDATORY. Set to **submit** (xsd:string).

TransactionID: OPTIONAL. If present must conform to the XSD pattern defined in the GovTalk envelope specification **([0-9A-F]{0,32})**.

AuditID: OPTIONAL. If present must conform to the XSD pattern defined in the GovTalk envelope specification **([0-9A-F]{0,32})**.

CorrelationID: MANDATORY. The element value must be empty.

ResponseEndPoint: OPTIONAL. The element value must be empty.

Transformation: MANDATORY. Set to **XML**, **HTML** or **text** (xsd:string)

GatewayTest: OPTIONAL for live submissions, where present it must be set to **0**. MANDATORY for ISV Test Service, when it must be set to **1**.

GatewayTimestamp: OPTIONAL. The elements value must be empty.

EmailAddress: OPTIONAL. This element may be populated by the client in order to specify the SMTP notification address for the current submission. This address is used by the Gateway to notify the recipient that a response has been received from the back-end system. If it is present in any submission verb, although it will be ignored by the protocol it will nonetheless be subject to

the pattern validation.

***For username / password authentication the following elements must also be set within the SenderDetails/IDAuthentication block within the Header block:***

SenderID: MANDATORY. Set to supplied account name (xsd:string).

Method: MANDATORY. Set to **MD5** or **clear** (xsd:string).

Value: MANDATORY. If the value of the Method element is **clear** then Value must contain a clear text password. If the value of the **Method** element is **MD5** then Value must be an **MD5** hashed password that has been Base64 encoded. The password used to generate the MD5 hash must be converted to lower case before the hash is generated and inserted into the document.

***For digital signature authentication the following additional elements must be set:***

Signature: MANDATORY. Must be populated with the XML node structure necessary to provide a valid digital signature block. (See the W3C signing documentation located on the W3C site <http://www.w3c.org>)

Method: MANDATORY. Set to **W3Csigned** (xsd:string).

#### ***GovTalkDetails Block***

Keys: MANDATORY. Must contain the appropriate Key element/attribute entries containing the known fact data relevant to the document type being submitted.

TargetDetails: OPTIONAL. It is recommended that this should not be present.

Organisation: OPTIONAL. If present must be populated with a string between 1 and 64 characters in length.

GatewayValidation: OPTIONAL. It is recommended that this element is not present.

**Note:** The subordinate fields of this element are not currently used by the submission protocol.

ChannelRouting: OPTIONAL. This element and any valid subordinates may be present. Application vendors may use this element and its sub-ordinates to communicate details of their applications name and version together with any specific transaction ID values for this submission.

**Note:** The subordinate fields of this element are not currently used by the submission protocol. This element should only be present in this message.

GovTalkErrors: OPTIONAL. It is recommended that this is not present.

GatewayAdditions: OPTIONAL. It is recommended that this is not present.

#### ***Body Block***

**Body:** MANDATORY. Should contain a non-empty, valid document for the specified transaction type. The document contained within this element must have a single root node associated with a default namespace other than "<http://www.govtalk.gov.uk/CM/envelope>" and must be particular to the submitted document type.

## Sample

The mandatory elements within the following sample submission request are shown in bold while optional elements appear in normal type.

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>2.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>request</Qualifier>
      <Function>submit</Function>
      <CorrelationID></CorrelationID>
      <Transformation>XML</Transformation>
      <GatewayTest>0</GatewayTest>
      <GatewayTimestamp></GatewayTimestamp>
    </MessageDetails>
    <SenderDetails>
      <IDAuthentication>
        <SenderID>Test000001</SenderID>
        <Authentication>
          <Method>clear</Method>
          <Value>Password123</Value>
        </Authentication>
      </IDAuthentication>
      <EmailAddress>someone@somewhere.com</EmailAddress>
    </SenderDetails>
  </Header>
  <GovTalkDetails>
    <Keys>
      <Key Type="VendorNumber">275687</Key>
      <Key Type="MainCPH">14/02/0327</Key>
      <Key Type="IACSRef">26-231169</Key>
    </Keys>
  </GovTalkDetails>
  <Body>
    <!-- A valid Body payload with a namespace declaration on the first element -->
  </Body>
</GovTalkMessage>
```



## 6.2. SUBMISSION\_ACKNOWLEDGEMENT Message

Source: Gateway

Recipient: Client/Application

Remarks:

The SUBMISSION\_ACKNOWLEDGEMENT message is returned from the Gateway in response to either a SUBMISSION\_REQUEST or SUBMISSION\_POLL message from the client. The following list describes the elements and values that can be returned in this message.

GovTalkMessage: MANDATORY. Default namespace specified as ["http://www.govtalk.gov.uk/CM/envelope"](http://www.govtalk.gov.uk/CM/envelope).

EnvelopeVersion: MANDATORY. Set to **1.0** (xsd:string)

### **Header Block**

Class: MANDATORY. Indicates the class of XML document contained within the Body of the message. Alternatively, if an error occurred before processing of the document was completed this field may be populated with the value **UndefinedClass**.

Qualifier: MANDATORY. Set to **acknowledgement** (xsd:string).

Function: MANDATORY. Set to **submit** (xsd:string).

TransactionID: OPTIONAL. If present this element will be empty.

AuditID: This element is not returned in this type of message.

CorrelationID: MANDATORY. This element will contain a hexadecimal number encoded as an upper case text string of 32 characters in length.

ResponseEndPoint: MANDATORY. Contains a valid end point address. The **PollInterval** attribute must be set to a non-negative integer. **Note:** Currently only HTTP addresses are specified through the ResponseEndPoint element value.

GatewayTest: This element is not returned in this type of message.

GatewayTimestamp: MANDATORY. Contains a timestamp relating to the date/time the Gateway generated the acknowledgement message.

SenderDetails: OPTIONAL. If present, no additional subordinate authentication related elements are included.

### **GovTalkDetails Block**

Keys: OPTIONAL. No subordinate Key elements will be included.

**Body Block**

Body:  
Sample

MANDATORY. This element will be empty.

The mandatory elements within the following sample submission request are shown in bold while optional elements appear in normal type.

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>1.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>acknowledgement</Qualifier>
      <Function>submit</Function>
      <TransactionID/>
      <CorrelationID>1DF257B5CD23F4A5B6C7D8E9F102932</CorrelationID>
      <ResponseEndPoint PollInterval="2">
        https://secure.gateway.gov.uk/poll
      </ResponseEndPoint>
      <GatewayTimestamp>2001-01-31T10:20:18.345</GatewayTimestamp>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body/>
</GovTalkMessage>
```

### 6.3. SUBMISSION\_POLL Message

Source: Client/Application

Recipient: Gateway

Remarks:

The SUBMISSION\_POLL message must be sent to the URL destination specified in the previous SUBMISSION\_RESPONSE or SUBMISSION\_ACKNOWLEDGEMENT message. The client must send the SUBMISSION\_POLL message after a delay equal to at least the value in the PollInterval attribute supplied on the previous Gateway message (SUBMISSION\_ACKNOWLEDGEMENT or SUBMISSION\_RESPONSE) has expired. Within this message some GovTalk envelope elements are OPTIONAL and can be omitted or must be left empty as shown below (whilst still conforming to the GovTalk envelope schema). The requirement to provide containing elements is not explicitly specified (i.e., GovTalkMessage/Header) when a contained child element is specified.

The SenderDetails element must be present but the credentials do not need to be represented with each request. The CorrelationID is a 32 character string that only the calling application is aware of, it is unique enough to identify the sender. Its inclusion ensures that users with a digital signature submission do not have to constantly re-enter their PIN number. Any security details that are provided will be ignored.

The Class element must match the Class which was obtained when the SUBMISSION\_REQUEST that returned the CorrelationID was performed. That is, when performing a SUBMISSION\_POLL a check is made to see if the given Class matches that stored in the Gateway for that particular CorrelationID. If no match is found an error will be displayed.

GovTalkMessage: MANDATORY. Default namespace specified as "http://www.govtalk.gov.uk/CM/envelope".

EnvelopeVersion: MANDATORY. Set to **2.0** (xsd:string)

#### **Header Block**

Class: MANDATORY. Indicates the class of XML document contained in the Body.

Qualifier: MANDATORY. Set to **poll** (xsd:string type).

Function: MANDATORY. Set to **submit** (xsd:string type).

TransactionID: OPTIONAL. If present must conform to the XSD pattern defined in the GovTalk envelope specification (**[0-9A-F]{0,32}**).

AuditID: OPTIONAL. If present must conform to the XSD pattern defined in the GovTalk envelope specification (**[0-9A-F]{0,32}**).

CorrelationID: MANDATORY. Set to a value that was returned by a SUBMISSION\_ACKNOWLEDGEMENT verb (xsd:string type).

Transformation:	MANDATORY. Set to <b>XML</b> or <b>HTML</b> or <b>text</b> (xsd:string).
GatewayTest:	OPTIONAL for live submissions, where present it must be set to <b>0</b> . MANDATORY for ISV Test Service, when it must be set to <b>1</b> .
GatewayTimestamp:	OPTIONAL. The element value must be empty.
SenderDetails:	OPTIONAL (xsd:string). If present, should be empty. <b>Note:</b> No authentication credentials are required in this message.

### **GovTalkDetails Block**

Keys:	OPTIONAL. It is recommended that this element is not present. If present, individual Key elements should not be present.
TargetDetails:	OPTIONAL. It is recommended that this element is not present.
GatewayValidation:	OPTIONAL. It is recommended that this element is not present.
ChannelRouting:	OPTIONAL. It is recommended that this element is not present. Currently this element and any sub-ordinates are not used by the submission protocol when handling this message type.
GovTalkErrors:	OPTIONAL. It is recommended that this element is not present.
GatewayAdditions:	OPTIONAL. It is recommended that this element is not present.

### **Body Block**

Body:	MANDATORY. Should be empty.
-------	-----------------------------

### **Sample**

The mandatory elements within this sample submission poll message are shown in bold while the optional ones appear in normal typeface:

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>2.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>poll</Qualifier>
      <Function>submit</Function>
      <CorrelationID>1DF257B5CD23F4A5B6C7D8E9F102932</CorrelationID>
      <Transformation>XML</Transformation>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body/>
</GovTalkMessage>
```

## 6.4. SUBMISSION\_ERROR Message

Source: Gateway

Recipient: Client/Application

Remarks:

The SUBMISSION\_ERROR message can be returned for all client messages. The GovTalkErrors elements will describe the error. The SUBMISSION\_ERROR will only be generated when the client message cannot be processed by the Gateway or back-end systems. This may include syntactic checks on the entire GovTalkMessage (including the Body).

There are three classifications for the errors that can be reported back to the client application:

- Errors in the submission protocol or Gateway internal errors
- Recoverable errors, such as the Gateway being too busy to accept a message; and
- Business logic related errors.

Details on the elements that can be included in both error message classifications are given below.

### 6.4.1 Submission Protocol/Gateway Internal errors

This type of error occurs either when an invalid document is submitted that fails schema/protocol validation (e.g., a Class element might not have been provided) or the Gateway Service has been disabled for scheduled downtime of a back-end system. The following elements can be included within messages of this type:

GovTalkMessage: MANDATORY. Default namespace specified as ["http://www.govtalk.gov.uk/CM/envelope"](http://www.govtalk.gov.uk/CM/envelope).

EnvelopeVersion: MANDATORY. Set to **1.0** (xsd:string).

#### **Header Block**

Class: MANDATORY. Reflects the class of document for which the error is raised. If the error was encountered before this is determined the generic **UndefinedClass** value will be returned.

Qualifier: MANDATORY. Set to **error** (xsd:string).

Function: MANDATORY. Set to **submit** (xsd:string).

TransactionID: OPTIONAL. If present the element value should be empty.

CorrelationID: OPTIONAL. Set to value present in the Acknowledgement or Poll (xsd:string).

ResponseEndPoint: MANDATORY. The PollInterval attribute will be set to a non-negative integer. This value may change in accordance with the type of error returned. The interpretation of this value is dependent on the error

	context.
GatewayTest:	This element is not returned for this type of message.
GatewayTimestamp:	MANDATORY. Populated with the time the error message was generated.
SenderDetails:	OPTIONAL. If present, no subordinate Key elements will be included

**GovTalkDetails Block**

Keys:	OPTIONAL. No subordinate Key elements will be included
GovTalkErrors/Error/Raised By:	MANDATORY. Contains the string value <b>Gateway</b> (xsd:string).
GovTalkErrors/Error/Number:	MANDATORY. Contains a published error code value
GovTalkErrors/Error/Type:	MANDATORY. Contains a published error type value
GovTalkErrors/Error/Text:	OPTIONAL. Contains additional information which should be of assistance in correcting the problem
GovTalkErrors/Error/Location:	OPTIONAL. Contains location related information

**Body Block**

Body:	MANDATORY. This element will be empty.
-------	--

**Sample**

The mandatory elements within the following sample Gateway submission error messages are shown in bold while optional elements appear in normal type.

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>1.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>error</Qualifier>
      <Function>submit</Function>
      <TransactionID/>
      <CorrelationID>1DF257B5CD23F4A5B6C7D8E9F102932</CorrelationID>
      <ResponseEndPoint PollInterval="2">
https://secure.gateway.gov.uk/submission
      </ResponseEndPoint>
      <GatewayTimestamp>2001-01-31T10:20:18.345</GatewayTimestamp>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
    <GovTalkErrors>
      <Error>
        <RaisedBy>Gateway</RaisedBy>
        <Number>1020</Number>
        <Type>fatal</Type>
        <Text>A meaningful description of the error</Text>
        <Location></Location>
      </Error>
    </GovTalkErrors>
  </GovTalkDetails>
  <Body/>
</GovTalkMessage >
```

## 6.4.2 Recoverable/Business Logic Errors

This type of error occurs when a document is submitted to the Gateway that passes all syntax checks but fails when a document doesn't conform to the rules of the GovTalk Body schema, the business logic required by the back-end system or the Gateway is too busy. The back-end system rejects the message based on the logic of the data provided in the XML, e.g., a submission where a calculation does not tally with the recorded total value. The Gateway will set values within the GovTalkErrors block to indicate that a business error was encountered.

Back-end system may be required to supply authentication details for Gateway to accept SUBMISSION\_RESPONSE messages. Responses received by the Gateway containing authentication details will be forwarded to the client.

GovTalkMessage: MANDATORY. Default namespace specified as "<http://www.govtalk.gov.uk/CM/envelope>".

EnvelopeVersion: MANDATORY. Set to **1.0** (xsd:string)

### **Header Block**

Class: MANDATORY. Indicates the class of XML document contained in the Body.

Qualifier: MANDATORY. Set to **error** (xsd:string)

Function: MANDATORY. Set to **submit** (xsd:string)

TransactionID: OPTIONAL. If present the element value should be empty.

CorrelationID: MANDATORY. Set to value present in the request (xsd:string)

ResponseEndPoint: MANDATORY. The PollInterval attribute set to non-negative integer

GatewayTest: This element is not returned for this type of message.

GatewayTimestamp: MANDATORY. Populated with the time the error message was generated.

***For username / password authentication the following elements must also be set within the SenderDetails/IDAuthentication block within the Header block:***

SenderID: MANDATORY. Set to a credential identifier value specified by Gateway. (xsd:string).

Method: MANDATORY. Set to **MD5** or **clear** (xsd:string).

Value: MANDATORY. If the value of the Method element is **clear** or **MD5** then Value will contain a collection of asterisk characters. This element should be ignored.

***For digital signature authentication the following additional elements must be set:***

Signature: MANDATORY. Must be populated with the XML node structure necessary to provide a valid digital



signature block. (See the W3C signing documentation located on the W3C site <http://www.w3c.org>)

Method: MANDATORY. Set to **W3Csigned** (xsd:string).

### ***GovTalkDetails Block***

Keys: OPTIONAL. Sub-ordinate elements may be included. If included, will contain the appropriate Key element/attribute entries containing the known fact data relevant to target spoke response document.

GovTalkErrors/Error/RaisedBy : MANDATORY. Contains the string value **department** for business errors or **gateway** for recoverable(xsd:string)

GovTalkErrors/Error/Number: MANDATORY. Contains a published error code value (typically **3001**)

GovTalkErrors/Error/Type: MANDATORY. Contains a published error type value (typically **business** or rarely **recoverable**)

GovTalkErrors/Error/Text: OPTIONAL. Contains a published error message (xsd:string)

### ***Body Block***

Body: MANDATORY. For **business** Error/Type this contains an instance of the Error response schema. This can be obtained from [edt@cabinet-office.x.gsi.gov.uk](mailto:edt@cabinet-office.x.gsi.gov.uk). For **recoverable** Error/Type this may be empty.

## Sample

The mandatory elements within the following sample Gateway business error messages are shown in bold while optional elements appear in normal type.

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>1.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>error</Qualifier>
      <Function>submit</Function>
      <TransactionID/>
      <CorrelationID>1DF257B5CD23F4A5B6C7D8E9F102932</CorrelationID>
      <ResponseEndPoint PollInterval="2">
        https://secure.gateway.gov.uk/submission
      </ResponseEndPoint>
      <GatewayTimestamp>2001-01-31T10:20:18.345</GatewayTimestamp>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
    <GovTalkErrors>
      <Error>
        <RaisedBy>Department</RaisedBy>
        <Number>3001</Number>
        <Type>business</Type>
        <Text>Submission of document failed due to
          departmental business logic</Text>
      </Error>
    </GovTalkErrors>
  </GovTalkDetails>
  <Body>
    <ErrorResponse xmlns="http://www.govtalk.gov.uk/CM/errorresponse">
      <Application>
        <Error>
          <RaisedBy>Some Department</RaisedBy>
          <Number>34567</Number>
          <Type>business</Type>
          <Text>Calculation mismatch</Text>
          <Location>MAFF</Location>
        </Error>
        ..... There may be many errors not just a single error.
      </Application>
    </ErrorResponse>
  </Body>
</GovTalkMessage>
```

## 6.5. SUBMISSION\_RESPONSE Message

Source: Gateway

Recipient: Client/Application

Remarks:

The Gateway may respond to either a SUBMISSION\_REQUEST or SUBMISSION\_POLL message with the SUBMISSION\_RESPONSE message. This message may include a GovTalkMessage Body payload returned from the back-end system. This payload is opaque to the Gateway and will be associated with an appropriate XML namespace. The document contained within the Body element must therefore include a single, root XML node which wraps the returned data. The entire message will be returned to the caller in the format requested by the value specified in the Transformation element of the current SUBMISSION\_POLL or SUBMISSION\_REQUEST message.

The client may request the response document multiple times by issuing a number of SUBMISSION\_POLL messages before finally deleting the response via the DELETE\_REQUEST message. Sending of multiple SUBMISSION\_POLL will typically occur if the client encountered a transmission error during a previous SUBMISSION\_POLL and received an HTTP error.

Back-end system may be required to supply authentication details for Gateway to accept SUBMISSION\_RESPONSE messages. Responses received by the Gateway containing authentication details will be forwarded to the client.

The following list describes the elements and values that can be returned in a submission response message.

GovTalkMessage: MANDATORY. Default namespace specified as "http://www.govtalk.gov.uk/CM/envelope".

EnvelopeVersion: MANDATORY. Set to **1.0** (xsd:string)

### **Header Block**

Class: MANDATORY. Indicates the class of XML document contained in the Body.

Qualifier: MANDATORY. Set to **response** (xsd:string)

Function: MANDATORY. Set to **submit** (xsd:string)

TransactionID: OPTIONAL. If present the element value should be empty.

CorrelationID: MANDATORY. Populated with original value from SUBMISSION\_POLL or SUBMISSION\_REQUEST verb

ResponseEndPoint: MANDATORY. The PollInterval attribute set to non-negative integer.

GatewayTest: This element is not returned for this type of message.

GatewayTimestamp: MANDATORY. Populated with the time the error

message was generated.

SenderDetails: OPTIONAL. If present, sub-ordinate elements may be included. If included either a username/password or digital signature authentication block will be present.

***For username / password authentication the following elements must also be set within the SenderDetails/IDAuthentication block within the Header block:***

SenderID: MANDATORY. Set to a credential identifier value specified by Gateway. (xsd:string).

Method: MANDATORY. Set to **MD5** or **clear** (xsd:string).

Value: MANDATORY. If the value of the Method element is **clear** or **MD5** then Value will contain a collection of asterisk characters. This element should be ignored.

***For digital signature authentication the following additional elements must be set:***

Signature: MANDATORY. Must be populated with the XML node structure necessary to provide a valid digital signature block. (See the W3C signing documentation located on the W3C site <http://www.w3c.org>)

Method: MANDATORY. Set to **W3Csigned** (xsd:string).

### ***GovTalkDetails Block***

Keys: OPTIONAL. Sub-ordinate elements may be included. If included, will contain the appropriate Key element/attribute entries containing the known fact data relevant to target spoke response document.

### ***Body Block***

Body: MANDATORY. The Body tag may be empty or contain a valid business document returned from the back-end system. If included, this document will be scoped by another namespace appropriate to the response content and will contain a top level XML node which wraps the response data.

## Sample

The mandatory elements within the following sample Gateway submission response message are shown in bold while optional elements appear in normal type.

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>1.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>response</Qualifier>
      <Function>submit</Function>
      <TransactionID/>
      <CorrelationID>1DF257B5CD23F4A5B6C7D8E9F102932</CorrelationID>
      <ResponseEndPoint PollInterval="2">
        https://secure.gateway.gov.uk/submission
      </ResponseEndPoint>
      <GatewayTimestamp>2001-01-31T10:20:18.345</GatewayTimestamp>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body>
    <DepartmentDocument xmlns="http://www.organisation.gov.uk/namespace">
      <Data>
        ABC
      </Data>
    </DepartmentDocument >
  </Body>
</GovTalkMessage >
```

## 6.6. DELETE\_REQUEST Message

Source: Client/Application

Recipient: Gateway

Remarks:

This message must be sent by the client application to the Gateway to signify it has successfully received the final SUBMISSION\_RESPONSE message or to a SUBMISSION\_ERROR message with a value present in the CorrelationID element sent by the Gateway.

The CorrelationID specifies the received message that is to be deleted from the Gateway. If the DELETE\_REQUEST message is not sent the Gateway will automatically delete the resources related to the CorrelationID within 60 days.

In response to the DELETE\_REQUEST message the Gateway will return a DELETE\_RESPONSE, DELETE\_ACKNOWLEDGE or a SUBMISSION\_ERROR message. If the client application receives a SUBMISSION\_ERROR message it must process any standard errors in the normal way. If the error indicates the CorrelationID cannot be found (typically error code 2000) then the client can cease sending the DELETE\_REQUEST message otherwise, the client should reissue the DELETE\_REQUEST message. If the delete operation has not yet been completed by the Gateway it will return a DELETE\_ACKNOWLEDGE message.

The client application must continue sending the DELETE\_REQUEST message to the Gateway in response to any DELETE\_ACKNOWLEDGE messages sent from the Gateway, or if any transmission failures that are separate from the protocol are received, for example a Send Failure message from the client. The client must continue to do this until the DELETE\_RESPONSE message is received from the Gateway.

If the client issues a DELETE\_REQUEST message before a response or error has been returned from the Gateway the resources associated with the transaction on the Gateway will be removed. This will not prevent the original submission from being sent to the back-end system: there are no associated recall semantics. If the client issues this request the implication is that the client no longer wishes to progress the submission via the Gateway and will reconcile the transaction through other means.

The Class element must match the Class which was obtained when performing the original SUBMISSION\_REQUEST that returned the CorrelationID. That is, when performing a DELETE\_REQUEST a check is made to see if the given Class matches that stored in the Gateway for that particular CorrelationID, and if no match is found an error will be returned.

Within DELETE\_REQUEST messages some GovTalk Header elements may be omitted or must be left empty as shown below (whilst still conforming to the GovTalk Header schema).

GovTalkMessage: MANDATORY. Default namespace specified as  
["http://www.govtalk.gov.uk/CM/envelope"](http://www.govtalk.gov.uk/CM/envelope).

EnvelopeVersion: MANDATORY. Set to **2.0** (xsd:string).

### **Header Block**

Class:	MANDATORY. Indicates the class of XML document contained in the Body.
Qualifier:	MANDATORY. Set to <b>request</b> (xsd:string).
Function:	MANDATORY. Set to <b>delete</b> (xsd:string).
CorrelationID:	MANDATORY. Must be set to the value returned by the associated SUBMISSION_RESPONSE verb (xsd:string type).
Transformation:	MANDATORY. Set to <b>XML</b> , <b>HTML</b> or <b>text</b> (xsd:string).
GatewayTest:	OPTIONAL for live submissions, where present it must be set to <b>0</b> . MANDATORY for ISV Test Service, when it must be set to <b>1</b> .
GatewayTimestamp:	OPTIONAL. If present the element value should be empty.
SenderDetails:	OPTIONAL. If present the element should be empty. <b>Note:</b> No authentication credentials are required in this message.

### ***GovTalkDetails Block***

Keys:	OPTIONAL. It is recommended that this element is not present. If present, individual Key elements should not be present.
TargetDetails:	OPTIONAL. It is recommended that this should not be present.
Organisation:	OPTIONAL. If present must be populated with a string between 1 and 64 characters in length.
GatewayValidation:	OPTIONAL. It is recommended that this should not be present.
ChannelRouting:	OPTIONAL. It is recommended that this should not be present. Currently this element and any sub-ordinates are not used by the submission protocol when handling this message type.
GovTalkErrors:	OPTIONAL. It is recommended that this should not be present.
GatewayAdditions:	OPTIONAL. It is recommended that this should not be present.

### ***Body Block***

Body:	MANDATORY. Should be empty.
-------	-----------------------------

### **Sample**

The mandatory elements within the following sample delete request message are shown in bold while optional elements appear in normal type:

```
<?xml version="1.0"?>
```

```
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>2.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>request</Qualifier>
      <Function>delete</Function>
      <CorrelationID>1DF257B5CD23F4A5B6C7D8E9F102932</CorrelationID>
      <Transformation>XML</Transformation>
      <GatewayTimestamp/>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body>
    </Body>
</GovTalkMessage>
```



## 6.7. DELETE\_RESPONSE Message

Source: Gateway

Recipient: Client/Application

Remarks:

This message must be returned by the Gateway in response to the DELETE\_REQUEST message from the client application once all the resources relating to a CorrelationID have been successfully deleted. The following list describes the elements and values returned in this message.

GovTalkMessage: MANDATORY. Default namespace specified as "<http://www.govtalk.gov.uk/CM/envelope>".

EnvelopeVersion: MANDATORY. Set to **1.0** (xsd:string)

### **Header Block**

Class: MANDATORY. Indicates the class of XML document contained in the Body.

Qualifier: MANDATORY. Set to **response** (xsd:string)

Function: MANDATORY. Set to **delete** (xsd:string)

TransactionID: OPTIONAL. If present the element value should be empty.

CorrelationID: MANDATORY. Populated with the value from the DELETE\_REQUEST.

ResponseEndPoint: MANDATORY. The PollInterval attribute will be set to a non-negative integer.

GatewayTest: This element is not returned for this type of message.

GatewayTimestamp: MANDATORY. Populated with the time the delete message was generated.

SenderDetails: OPTIONAL. If present, sub-ordinate elements will not be included.

### **GovTalkDetails Block**

Keys: OPTIONAL. No subordinate Key elements will be included

### **Body Block**

Body: MANDATORY. Should be empty.

## Sample

The mandatory elements within the following sample delete response message are shown in bold while optional elements appear in normal type:

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/envelope">
  <EnvelopeVersion>1.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>response</Qualifier>
      <Function>delete</Function>
      <TransactionID/>
      <CorrelationID>1DF257B5CD23F4A5B6C7D8E9F102932</CorrelationID>
      <ResponseEndPoint PollInterval="2">
        https://secure.gateway.gov.uk/submission
      </ResponseEndPoint>
      <GatewayTimestamp>2001-02-25T16:32:18.795</GatewayTimestamp>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body>
  </Body>
</GovTalkMessage>
```

## 6.8. DELETE\_ACKNOWLEDGEMENT Message

Source: Gateway

Recipient: Client/Application

Remarks:

This message may be returned by the Gateway in response to a DELETE\_REQUEST message from the client application. This message indicates that the deletion process has not yet been completed. The client should send further DELETE\_REQUEST messages to the location specified in the ResponseEndPoint element value in this DELETE\_ACKNOWLEDGE message after the number of seconds defined in the PollInterval element. It should continue to do so until a DELETE\_RESPONSE message is returned.

The following list describes the elements and values that can be returned in this message.

GovTalkMessage: MANDATORY. Default namespace specified as "http://www.govtalk.gov.uk/CM/envelope".

EnvelopeVersion: MANDATORY. Set to **1.0** (xsd:string)

### Header Block

Class: MANDATORY. Indicates the class of XML document contained in the Body.

Qualifier: MANDATORY. Set to **acknowledgement** (xsd:string)

Function: MANDATORY. Set to **delete** (xsd:string)

TransactionID: OPTIONAL. If present the element value should be empty.

CorrelationID: MANDATORY. Populated with value from the DELETE\_REQUEST.

ResponseEndPoint: MANDATORY. The PollInterval attribute will be set to a non-negative integer.

GatewayTest: This element is not returned for this type of message.

GatewayTimestamp: MANDATORY. Populated with the time the error message was generated.

SenderDetails: OPTIONAL. If present, sub-ordinate elements will not be included.

### GovTalkDetails Block

Keys: OPTIONAL. No subordinate Key elements will be included

### Body Block

Body: MANDATORY. Should be empty.

## Sample

The mandatory elements within the following sample delete acknowledgement message are shown in bold while optional elements appear in normal type:

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>1.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>acknowledgement</Qualifier>
      <Function>delete</Function>
      <TransactionID/>
      <CorrelationID>1DF257B5CD23F4A5B6C7D8E9F102932</CorrelationID>
      <ResponseEndPoint PollInterval="2">
        https://secure.gateway.gov.uk/submission
      </ResponseEndPoint>
      <GatewayTimestamp>2001-01-31T10:20:18.345</GatewayTimestamp>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body/>
</GovTalkMessage>
```

## 6.9. DATA\_REQUEST Message Definition

Source: Client/Application

Recipient: Gateway

Remarks:

The client may send a DATA\_REQUEST message if it has received no reply from the Gateway after the PollInterval timeout value supplied on the previous Gateway message (SUBMISSION\_ACKNOWLEDGEMENT Message or SUBMISSION\_RESPONSE Message) has expired.

Within this message some GovTalk Header elements may be omitted or must be left empty as shown below (whilst still conforming to the GovTalk Header schema).

GovTalkMessage: MANDATORY. Default namespace specified as ["http://www.govtalk.gov.uk/CM/envelope"](http://www.govtalk.gov.uk/CM/envelope).

EnvelopeVersion: MANDATORY. Set to **2.0** (xsd:string)

### **Header Block**

Class: MANDATORY. Indicates the class of the XML document contained in the Body.

Qualifier: MANDATORY. Set to **request** (xsd:string)

Function: MANDATORY. Set to **list** (xsd:string)

CorrelationID: MANDATORY. Must be empty. (xsd:string)

Transformation: MANDATORY. Set to **XML**, **HTML** or **text** (xsd:string)

GatewayTest: OPTIONAL for live submissions, where present it must be set to **0**. MANDATORY for ISV Test Service, when it must be set to **1**.

GatewayTimestamp: OPTIONAL. If present the elements value must be empty.

***For username / password authentication the following elements must also be set within the SenderDetails/IDAuthentication block within the Header block:***

SenderID: MANDATORY. Set to supplied account name (xsd:string).

Method: MANDATORY. Set to **MD5** or **clear** (xsd:string).

Value: MANDATORY. If the value of the Method element is **clear** then Value must contain a clear text password. If the value of the **Method** element is **MD5** then Value must be an **MD5** hashed password that has been Base64 encoded. The password used to generate the MD5 hash must be converted to lower case before the hash is generated and inserted into the document.

***For digital signature authentication the following additional elements must be set:***

Signature: MANDATORY. Must be populated with the XML node

structure necessary to provide a valid digital signature block. (See the W3C signing documentation located on the W3C site <http://www.w3c.org>)

Method: MANDATORY. Set to **W3Csigned** (xsd:string).

### ***GovTalkDetails Block***

Keys: OPTIONAL. It is recommended that this element is not present. If present, individual Key elements should not be present.

GovTalkErrors: OPTIONAL. It is recommended that this should not be present

### ***Body Block***

Body: MANDATORY. May be populated with any Date/Time constraints for the query.

StartDate: OPTIONAL. Set to a valid date, of the format dd/mm/yyyy

StartTime: OPTIONAL. Set to a valid time, of the format hh:mm:ss. If this element is used a valid StartDate must also be set.

EndDate: OPTIONAL. Set to a valid date, of the format dd/mm/yyyy. If this element is used a valid StartDate must also be set which must be earlier than or to the same as the value in EndDate.

EndTime: OPTIONAL. Set to a valid time of the format hh:mm:ss. If this element is used a valid EndDate must also be set. If the same start and end date are used this time must be later than the start time.

The start and end dates and times are used to determining the Correlation IDs that are to be reported on. These are compared with the date and times that the original submission request was received for a particular message.

## Sample

The mandatory elements within the following sample data request message are shown in bold while optional elements appear in normal type:

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>2.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>request</Qualifier>
      <Function>list</Function>
      <CorrelationID/>
      <Transformation>XML</Transformation>
    </MessageDetails>
    <SenderDetails>
      <IDAuthentication>
        <SenderID>VendorID</SenderID>
        <Authentication>
          <Method>clear</Method>
          <Role/>
          <Value>password</Value>
        </Authentication>
      </IDAuthentication>
    </SenderDetails>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body>
    <StartDate>01/02/1999</StartDate>
    <EndDate>01/03/1999</EndDate>
    <StartTime>01:02:44</StartTime>
    <EndTime>01:02:44</EndTime>
  </Body>
</GovTalkMessage>
```

## 6.10. DATA\_RESPONSE Message

Source: Gateway

Recipient: Client/Application

Remarks:

The DATA\_RESPONSE message is returned from the Gateway in response to a DATA\_REQUEST message it receives from the client. This message may include a GovTalkMessage Body payload returned from the Gateway.

**Note:** Documents whose resources have been deleted from the Gateway cannot be seen using the list request even if a time window is specified.

The following list describes the elements and values returned in this message.

GovTalkMessage: MANDATORY. Default namespace specified as ["http://www.govtalk.gov.uk/CM/envelope"](http://www.govtalk.gov.uk/CM/envelope).

EnvelopeVersion: MANDATORY. Set to **1.0** (xsd:string)

### **Header Block**

Class: MANDATORY. Indicates the class of XML document contained in the Body.

Qualifier: MANDATORY. Set to **response** (xsd:string).

Function: MANDATORY. Set to **list** (xsd:string).

TransactionID: OPTIONAL. If present the element value should be empty.

CorrelationID: MANDATORY. Should be empty.

ResponseEndPoint: MANDATORY. The PollInterval attribute will be set to a non-negative integer.

GatewayTest: This element is not returned for this type of message.

GatewayTimestamp: MANDATORY. Populated with the time the data response was generated.

SenderDetails: OPTIONAL. If present, sub-ordinate elements will not be included.

### **GovTalkDetails Block**

Keys: OPTIONAL. No subordinate Key elements will be included

### **Body Block**

Body: MANDATORY. May contain data.

The results set, if any, produced by a DATA\_REQUEST will be contained in the body elements of a DATA\_RESPONSE message. However, if the response is an error the response message will be in the format of the submission error message described in the *SUBMISSION\_ERROR* section of this document. The follow tags may be contained in the body of a DATA\_RESPONSE message:

StatusReport: OPTIONAL. Header element for report results.



**SenderID:** OPTIONAL. Set to a credential identifier value specified by Gateway.

**StartTimeStamp:** OPTIONAL. Starting date and time for report.

**EndTimeStamp:** OPTIONAL. End date and time for report.

**StatusRecord:** OPTIONAL. Detailed results.

**Timestamp:** OPTIONAL. Date and time when the message was originally received.

**CorrelationID:** OPTIONAL. Correlation ID for message upon which reported status change occurred.

**Status:** Latest status change recorded for a given message. Will be one of: SUBMISSION\_ERROR (the document was submitted and found to be in error), SUBMISSION\_ACKNOWLEDGEMENT (the document has been acknowledged by the Gateway and is awaiting processing by the Government Department) or SUBMISSION\_RESPONSE (the document has completed processing and is awaiting client SUBMISSION\_POLL/DELETE\_REQUEST)..

## Sample

The mandatory elements within the following sample data response message are shown in bold while optional elements appear in normal type:

```
<?xml version="1.0"?>
<GovTalkMessage xmlns="http://www.govtalk.gov.uk/CM/envelope">
  <EnvelopeVersion>1.0</EnvelopeVersion>
  <Header>
    <MessageDetails>
      <Class>MAFF-IACS-AAPS2001</Class>
      <Qualifier>response</Qualifier>
      <Function>list</Function>
      <TransactionID/>
      <CorrelationID></CorrelationID>
      <ResponseEndPoint PollInterval="2">
        https://secure.gateway.gov.uk/submission
      </ResponseEndPoint>
      <GatewayTimestamp>2002-04-23T11:54:18.345</GatewayTimestamp>
    </MessageDetails>
    <SenderDetails/>
  </Header>
  <GovTalkDetails>
    <Keys/>
  </GovTalkDetails>
  <Body>
    <StatusReport>
      <SenderID>VendorID</SenderID>
      <StartTimeStamp>13/11/2000 16:18:41.07</StartTimeStamp>
      <EndTimeStamp>22/11/2000 10:25:23.26</EndTimeStamp>
      <StatusRecord>
        <TimeStamp>13/11/2000 16:19:56.50</TimeStamp>
        <CorrelationID>C13C78E280A449E8B0B959FF6AA8125
        </CorrelationID>
        <Status>SUBMISSION_REQUEST</Status>
      </StatusRecord>
      <StatusRecord>
        <TimeStamp>13/11/2000 16:26:11.21</TimeStamp>
        <CorrelationID>5317CCA6A1F0444A97B02D85849F5445
        </CorrelationID>
        <Status>SUBMISSION_ERROR</Status>
      </StatusRecord>
    </StatusReport>
  </Body>
</GovTalkMessage>
```

## Appendix A: Test Service Constraints

The Gateway provides a Test Service which allows Independent Software Vendors (ISVs) to submit documents to a simulated version of the system. The Test Service's primary function is to provide a server side implementation of the submission protocol in order to facilitate development and testing of client applications. This gives developers the chance to test the mechanisms to be used for communicating with the Gateway before working with the live system. It also allows developers to test that their applications conform to the rules governing the format of files that can be accepted by the Gateway.

The Test Service provides sufficient functionality to enable developers to submit documents and receive reports on their progress through the system in the same way as in the live version of the system. However, one key difference between the Test Service and the full implementation of the Gateway is that the Test Service is not intended to handle large documents. Document submissions to the Test Service that are over one megabyte in size will be rejected with an appropriate error message. This is not the case for the live system.

The SenderID / password embedded in the document must match the logon credentials supplied to the vendor as part of the early adopter program.

The Registration & Enrolment (R&E) engine code in the test system uses test data and doesn't reflect any data in the live R&E system. Usernames and passwords are provided to users of the test service by email. R&E validation also requires that you provide Key identifiers in the GovTalkDetails/Keys element.

### Access to ISV Test Service

The ISV Test Service is located at:

Document Postings: <https://secure.dev.gateway.gov.uk/submission/>

Help Information: <https://secure.dev.gateway.gov.uk/help/>

The Test Service imposes a number of constraints on the client applications and document submissions. In some cases these are not consistent with the live Gateway service:

- The Test Service will only validate and check the GovTalk Message/Header semantics of submissions. This is in line with the primary objective of the Test Service to provide a testing environment for client users and software developers wishing to interoperate with the Gateway submission protocol. Business related errors will not be identified or highlighted by the ISV Test Service.
- Every effort will be made to keep the behaviour of the live Gateway and the Test Service consistent. From time to time minor discrepancies may occur as the result of ongoing maintenance.
- Submissions to the ISV and Portal Test Service must contain the GatewayTest element with its value set to 1.

## Appendix B: Standard Transformations

Transformation Value	Description	Type
XML	The Gateway will return an unmodified XML response encoded as UTF-8.	xsd:string
text	The Gateway will return both ACKNOWLEDGEMENT and REPONSE messages as plain text. This implies the Browser will Parse the message and take the appropriate action.	xsd:string
HTML	<p>The Gateway will return all messages (RESPONSE and ACKNOWLEDGEMENT) as a Base64 encoded text value contained in a hidden HTML field (named GovTalkData). It is incumbent on the client to decode and parse out the message semantics.</p> <p>Note: There is currently a limitation of 100k for submissions encoded in this fashion.</p>	xsd:string

## Appendix C: Error / Return Codes

The tables within this appendix detail the errors that are raised by the Gateway. Each table contains a column titled Supported. This column describes for each error whether the Gateway will report the error, whether the error has been deprecated and/or replaced with a different error number or, the error will not be returned by Gateway.

### Major Test Errors

Error Code	Description	Supported
1000	System failure. The submission of this document has failed due to an internal system error.	Yes
1001	The submitted XML document either failed to validate against the GovTalk schema for this class of document or its body was badly formed.	Yes
1002	Authentication Failure. The digital signature on the submitted document has not been recognised.	Yes
1003	The submitted document contained a SOAP Header/Envelope. The Gateway cannot process messages with SOAP headers.	No. 1001 is returned
1004	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing, empty or incorrectly populated Qualifier field.	No. 1001 is returned
1005	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing, empty or incorrectly populated Envelope field.	No. 1001 is returned
1006	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing, empty or incorrectly populated Class field.	No. 1001 is returned
1007	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing Function field.	No. 1001 is returned
1008	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing, empty or incorrectly populated GatewayTest field.	No. 1001 is returned
1009	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing Transformation field.	No. 1001 is returned
1010	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing or empty SenderID field.	No. 1001 is returned
1011	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing, empty or incorrectly populated Role/Value field.	No. 1001 is returned
1012	The submitted XML document failed to validate against the GovTalk schema for this class of document.	No. 1001 is returned

Error Code	Description	Supported
	Incorrectly populated EmailAddress field.	
1013	The submitted XML document failed to validate against the GovTalk schema for this class of document. Incorrectly populated Organisation field.	No
1014	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing CorrelationID field.	No. 1001 is returned
1015	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing, empty or incorrectly populated Method field.	No. 1001 is returned
1016	The submitted XML document failed to validate against the GovTalk schema for this class of document. Missing Body field.	No. 1041 is returned

### Errors in Document Submission

Error Code	Description	Supported
1020	The submitted document contains an entry for CorrelationID, which is a reserved system field. This field should be left empty.	Yes
1021	The submitted document contains an entry for GateWayTimestamp, which is a reserved system field. This field should be left empty.	No. 1001 is returned
1022	The submitted document contains an entry for ResponseEndPoint, which is a reserved system field. This field should be left empty.	No. 1001 is returned
1023	The submitted document contains an entry for TransactionID, which is a reserved system field. This field should be left empty.	No
1024	The submitted document contains an entry for AuditID, which is a reserved system field. This field should be left empty.	No
1025	The submitted document contains an entry for the Timestamp field, which is a reserved field and should be left empty.	No. 1021 is returned
1026	The submitted document contains an invalid entry for Qualifier, When submitting a document to the Gateway the only valid values for the Qualifier field are <b>request</b> or <b>poll</b> .	No. 1001 is returned
1027	The submitted document contains an invalid entry for EnvelopeVersion.	No. 1001 is returned
1028	The submitted document contains an invalid entry for Class. This field must contain a supported document submission type.	Yes

Error Code	Description	Supported
1029	The submitted document contains an invalid entry for Function. If the Qualifier field contains the value <b>request</b> , then the only valid values for the Function field are <b>submit</b> , <b>delete</b> or <b>list</b> .	Yes
1030	The submitted document contains an invalid entry for Transformation. This field must contain the value <b>XML</b> , <b>HTML</b> or <b>text</b> .	No. 1001 is returned
1031	The submitted document contains an invalid entry for EmailAddress. If the Qualifier field contains the value <b>poll</b> , then the EmailAddress field must not be populated.	No
1032	The submitted document contains an invalid entry for Organisation. If the Qualifier field contains the value <b>poll</b> , then the Organisation field must not be populated.	No
1033	The submitted document contains an invalid entry for CorrelationID. If the Qualifier field contains the value <b>poll</b> , then the CorrelationID field must be populated with a valid id.	Yes
1034	Unable to retrieve data for the supplied CorrelationID. Ensure the CorrelationID is correct, and that you have the required authentication credentials to poll this CorrelationID.	No
1035	The submitted document contains an invalid entry for CorrelationID. If the Function field contains the value <b>delete</b> , then the CorrelationID field must be populated.	Yes
1036	Unable to retrieve data for the supplied CorrelationID. Ensure the CorrelationID is correct, and that you have the required authentication credentials to delete this CorrelationID.	No
1037	The submitted document contains an invalid entry for Function. If the Qualifier field contains the value <b>poll</b> , then the only valid value for the Function field is <b>submit</b> .	No. 1001 is returned
1038	The submitted document contains an invalid entry for StartDate and/or StartTime. StartDate and StartTime must precede EndDate and/or EndTime.	Yes
1039	The submitted document contains an invalid entry for any one of the following fields StartDate, StartTime, EndDate or EndTime.	Yes
1040	The submitted document contains an inconsistent value entry for the specified method. If <b>W3Csigned</b> is specified the Value element must be omitted and a Signature block must be present.	Yes
1041	The submitted document does not contain a non empty body for the given transaction type.	No
1042	The submitted document contains an entry in the Body field. This field must be left empty for this transaction	No

Error Code	Description	Supported
	type.	
1043	The submitted HTML content was invalid. To submit HTML to the Gateway you must perform a FORM POST with an input field <b>GATEWAYDATA</b>	Yes
1044	The submitted XML document (Base 64 Encoded within HTML) failed to validate against the GovTalk schema for this class of document.	No
1045	When communicating with the Gateway via HTML a valid ResponseEndPoint was not specified. This <b>MUST</b> be specified.	No
1046	Authentication Failure. The supplied user credentials failed validation for the requested service.	Yes

### Synchronous Behaviour: Polling Errors

Error Code	Description	Supported
1100	The submitted document has not yet been processed. The system is currently experiencing high volumes of traffic. To view this submission later use the URL provided.	No
1101	The permitted number of poll attempts has been exceeded for this document. To view this submission later use the URL provided.	No
1102	The time allowed for the poll attempts has elapsed. To view this submission later use the URL provided.	No
1103	The record you have attempted to poll has been marked for deletion and therefore cannot be retrieved.	Yes

### Test Service Messages

Error Code	Description	Supported
1501	The total number of bytes in a document submitted to the Test Service in the Gateway must not exceed 1 megabyte.	Yes
1502	The GatewayTest field of the submitted document must contain a non-zero value integer for test documents: only documents containing a non-zero value will be processed by the Test Service.	Yes
1503	The message was successfully received by the Test Service Gateway.	Yes
1504	The authentication details in the GovTalk Header does not match the credentials provided in the authentication to the Test Service.	Yes
1505	No document has been submitted to the Test Service.	Yes



**Messages Referring to Gateway Services**

Error Code	Description	Supported
2000	The Gateway could not locate a record for the supplied correlation ID: the submission may have been deleted or the correlation ID may be invalid. If you have not received a response you should resubmit the document.	Yes
2001	The document was an invalid size.	Yes
2002	The document was an invalid size: not enough data was supplied.	Yes
2003	The service associated with the submitted document type is currently unavailable.	Yes
2004	If present the GatewayTest field must either be empty or set to <b>0</b> .	No. 1001 is returned.
2005	The Gateway has not received an acknowledgement of your submission from the back-end system within the permitted timescale. Either resubmit or contact the appropriate organisation directly to determine if your submission has been accepted.	Yes

**Messages Referring to 'Back-end' Organisation Services**

Error Code	Description	Supported
3000	The processing of your document submission failed. Please re-submit.	Yes
3001	The submission of this document has failed due to departmental specific business logic in the Body element.	Yes

## **Appendix D: Glossary**

### **Attribute**

An XML structural construct. A name-value pair, separated by an equals sign, included inside a tagged element that modifies certain features of the element.

### **Base64 encoding**

An encoding method commonly used to encode binary attachments with Multipurpose Internet Mail Extensions (MIME). It transforms 8-bit characters into 6-bit characters that are compatible with the Internet infrastructure.

### **CorrelationID**

A unique ID number assigned by the Gateway to each submitted document which uniquely identifies that document to the system.

### **Element**

An XML structural construct. An XML element consists of a start tag, an end tag and the information between the tags, often referred to as the 'contents'. Each element has a type, identified by name, and can have a set of attribute specifications. Each attribute specification has a name and a value. Elements used in an XML file are described by schema that provide a description of the structure of the data.

### **Extensible Markup Language (XML)**

A language that provides a uniform method for describing and exchanging structured data that is independent of applications or vendors. Content and presentation are separate. XML is the Web's language for data interchange and HTML is the Web's language for rendering. The standards for the XML language are set by the Worldwide Web Consortium (W3C).

### **Invalid document**

A document that doesn't follow the XML tag rules. For documents submitted to the Gateway, an invalid document is also one which does not follow the rules defined in the appropriate GovTalk schema.

### **Namespace**

A mechanism that allows developers to uniquely qualify element names and their relationships to make those names recognisable so avoiding potential name conflicts on elements that have the same name but are defined within different XML vocabularies. A namespace identifies a particular XML vocabulary defined within an URN.

### **Schema**

A formal specification of element names that indicates which elements are allowed in an XML document and in what combinations. It also defines the structure of the document: which elements are child elements of others, the sequence in which the child elements can appear and the number of child elements there can be. A schema can also define default values for attributes.

### **Uniform Resource Name (URN)**

Identifies a persistent Internet resource. A URN provides a mechanism for locating and retrieving a schema file that defines a particular namespace.

### **Valid XML**

Well-formed XML that conforms to rules defined in a particular schema.

**XML**

See Extensible Markup Language.