G-Invoicing
System Interface Specifications - Pull

A Guide to extracting, packaging, and transmitting GT&C, Order and Performance data in the G-Invoicing Environment

General Terms and Conditions (GT&C), Orders, Perfromance
Version 4.1 (draft)
October 2018

G-Invoicing
GOVERNMENT INVOICING
BUREAU OF THE FISCAL SERVICE

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1 Introduction

1.1 Purpose

This artifact defines the interface specification to define the transmission of General Terms & Conditions (GT&C), Order and Performance data between the G-Invoicing application, Federal Program Agencies (FPA) and their software providers. Once approved, it serves as an agreement between G-Invoicing, agencies with interfacing systems, their software provider development teams and Bureau of the Fiscal Service business owners, upon which the system-to-system interface will be based.

1.2 Scope

This artifact defines the G-Invoicing specifications to extract, package and transmit GT&C, Order and Performance data and the communication channel that carries these messages. The focus is on the specifications that must be mutually agreed upon by G-Invoicing and agencies with interfacing systems. The G-Invoicing application team owns the maintenance of this document.

1.3 References

The artifacts listed below support the current Production release of this specification and may be downloaded from the provided location. Artifacts that support future enhancements and releases of this specification can be made available upon request.

1.3.1 The Federal Intragovernmental Data Standards (FIDS) for GT&C**, Order and Performance** Data Elements

https://www.fiscal.treasury.gov/fsservices/gov/acctg/g_invoice/g_invoice_home.htm

1.3.2 System Mapping and Validation Rules (SM&VR) for GT&C and Order, explains how each data element in the FIDS maps to G-Invoicing and the validation rules enforced for each change in status.

https://www.fiscal.treasury.gov/fsservices/gov/acctg/g_invoice/g_invoice_home.htm

Note: *There is no SM&VR document for Performance data because there is only one Performance status supported. Validation rules appear in the Performance FIDS.*

1.3.3 XML Schema Documentation

- GTC.xsd
- Order.xsd
- Performance.xsd
- Documents Summary.xsd
- Error.xsd

https://www.fiscal.treasury.gov/data/

2 Assumptions/Constraints

2.1 Assumptions

1. While this artifact represents an agreement by G-Invoicing, Federal Program Agencies and their software providers, it does not imply a release schedule or project plan. Those topics are described by other artifacts for the respective projects and are not referenced here.
2. The interface is limited to the transmission of GT&C, Order and Performance data outbound from G-Invoicing to agencies with interfacing systems. Additional data types are not included in this interface at this time.

2.2 Constraints

1. This interface will be delivered via web services, access governed by the Treasury Web Application Infrastructure (TWAI), as per agreement between FRB St Louis, the Department of the Treasury Bureau of the Fiscal Service and Defense Logistics Agency (DLA) Transaction Services, and is consistent with the Bureau of the Fiscal Service's desire to move towards delivering system-to-system interfaces via web services.
   a. Similar operating agreements may be made with other agencies, as-needed.
2. Messages will be sent over the internet utilizing the HTTPS protocol.
3. The Bureau of the Fiscal Service reference data XML Schemas will be published by the Enterprise Data Architecture group at https://www.fiscal.treasury.gov/data/. These schemas will be used to format the payload portion of the data transmission.

3 Interface Mechanism

3.1 Physical Interface

The G-Invoicing to agency system interface will communicate using HTTPS with 2-way TLS (Transport Layer Security) using a client certificate through the TWAI. The TWAI will employ a web service proxy to serve as a focal route for incoming web service requests so that the web service provider is only configured to receive requests from a single point of origination. The web service response is routed back on the same stream to the initial requestor.

3.2 Protocol

The G-Invoicing to agency system interface will employ a push/pull model utilizing RESTful Services with an XML payload.

All services below are referenced via URLs in the following format.

https://host-name:port/base-path/resource-path

3.2.1 Host names:

Production: ws.igt.fiscal.treasury.gov
Quality Assurance Current: qa.ws.igt.fiscal.treasury.gov
Quality Assurance Future: qaf.ws.igt.fiscal.treasury.gov
Functional Test: ft.ws.igt.fiscal.treasury.gov

3.2.2 Base Path: /ginv

3.2.3 Resource: /services

Note: *G-Invoicing supports a one-to-many relationship between a Partner ID and a System ID whereby one Partner created and managed within a single disburser account can represent multiple Systems spread across many disburser accounts. In situations where the Partner is only accessing data in a single disburser account, that Partner ID can be granted full access (by agency administrators) to pull data for all documents residing in that disburser account. When that Partner's data is spread across multiple disburser accounts, at least one System ID must be created and managed in each disburser account to pull data. In either case, the Partner ID must be assigned a client certificate to access G-Invoicing.*

3.2.3.1 Resource: GT&C List

Component	Detail / Description
Path	/ginv/services/v1_0/gtc/
Method	GET
Description	Returns a list of all GT&Cs from the System that the User is authorized to access.
Example	GET /ginv/services/v1_0/gtc?agencyLocationCode=17000001,17000002,17000003 &lastModifiedDateTime=2017-05-09T17:30:00.000-04:00 Host: ws.igt.fiscal.treasury.gov Accept: application/xml Accept Encoding: gzip, deflate Connection: Keep-Alive
Parameters	Name: agencyLocationCode Description: Limits results to GT&Cs associated with one of the passed ALCs. In: query Type: Comma separated array of strings Required: false
	Name: status Description: Limits results of GT&Cs associated with one of the passed status types. In: query Type: Comma separated array of strings, enumeration Values: "REC" (Open For Orders), "CLZ" (Closed), "PND" (Pending Approval), "REJ" (Rejected). Required: false
	Name: lastModifiedDateTime Description: Limits results to GT&Cs updated since the passed date/time. In: query Type: dateTime; Format: YYYY-MM-DDThh:mm:ss.SSS+|-00:00 All time should be specified in local time zone with time zone offset from UTC in hours and minutes ahead (+) or behind (-) UTC. Required: false

Component	Detail / Description
	Name: SystemID Description: Identifies the system that is exchanging data with G-Invoicing. In: header Type: string [100] Required: false (may be required for partners acting on behalf of agency systems, see Note above for details).
	Name: Agency-Tracking-Identifier Description: Unique identifier from agency system, optionally supplied in the request. In: header Type: string [50] Required: false
Consumes	N/A
Produces	Status Code: 200 Description: Successful call returns Call Detail and a list of GT&Cs. Content Type: application/xml Schema(s): Call Detail, Document List

3.2.3.2 Resource: Single GT&C by ID

Component	Detail / Description
Path	/ginv/services/v1_0/gtc/<id>
Method	GET
Description	Returns an individual GT&C referenced by the passed unique RequestType / RequestTypeID combination.
Example	GET /ginv/services/v1_0/gtc/A1610-017-021-012345 Host: ws.igt.fiscal.treasury.gov Accept: application/xml Accept Encoding: gzip, deflate Connection: Keep-Alive
Parameters	Name: id Description: A Unique ID referencing an individual GT&C. In: path (required) Type: string [30] Required: true
	Name: SystemID Description: Identifies the system that is exchanging data with G-Invoicing. In: header Type: string [100] Required: false (may be required for partners acting on behalf of agency systems, see Note above for details).

Component	Detail / Description
	Name: Agency-Tracking-Identifier Description: Unique identifier from agency system, optionally supplied in the request. In: header Type: string [50] Required: false
Consumes	N/A
Produces	Status Code: 200 Description: Successful call returns Call Detail and an individual GT&C. Content Type: application/xml Schema(s): Call Detail, GT&C

3.2.3.3 Resource: Single Attachment by ID

Component	Detail / Description
Path	/ginv/services/v1_0/attachment/<id> /ginv/services/v1_0/order/attachment/<id> /ginv/services/v1_0/performance/attachment/<id>
Method	GET
Description	Returns an individual Attachment referenced by the passed unique ID.
Example	GET /ginv/services/v1_0/attachment/987654321 GET /ginv/services/v1_0/order/attachment/987654321 GET /ginv/services/v1_0/performance/attachment/987654321 Host: ws.igt.fiscal.treasury.gov Accept: application/xml Accept Encoding: gzip, deflate Connection: Keep-Alive
Parameters	Name: id Description: A Unique ID referencing an individual Attachment. In: path Type: string [30] Required: true
	Name: SystemID Description: Identifies the system that is exchanging data with G-Invoicing. In: header Type: string [100] Required: false (may be required for partners acting on behalf of agency systems, see Note above for details).
	Name: Agency-Tracking-Identifier Description: Unique identifier from agency system, optionally supplied in the request. In: header Type: string [50] Required: false
Consumes	N/A

Component	Detail / Description
Produces	Status Code: 200 Description: Successful call returns the binary content of the Attachment file. Content Type: application/octet-stream Schema(s): file

3.2.3.4 Resource: Orders List

Component	Detail / Description
Path	/ginv/services/v1_0/order
Method	GET
Description	Returns a list of all Orders from the System that the User is authorized to access. The keys necessary to obtain detailed Order data are obtained by pulling the Orders List.
Example	GET /ginv/services/v1_0/order?lastModifiedDateTime=2017-05-09T17:30:00.000-04:00 Host: ws.igt.fiscal.treasury.gov Accept: application/xml Accept Encoding: gzip, deflate Connection: Keep-Alive
Parameters	Name: agencyLocationCode Description: Limits results to Orders associated with one of the passed ALCs. In: query Type: Comma separated array of strings Required: false
	Name: status Description: Limits results of Orders associated with one of the passed status types. In: query Type: Comma separated array of strings, enumeration Values: "SSA" (Shared with Servicing Agency), "REC" (Open), "REJ" (Rejected), "CLZ" (Closed). Required: false
	Name: lastModifiedDateTime Description: Limits results to Orders updated since the passed date/time. In: query Type: dateTime; Format: YYYY-MM-DDThh:mm:ss.SSS+|-00:00 All time should be specified in local time zone with time zone offset from UTC in hours and minutes ahead (+) or behind (-) UTC. Required: false
	Name: SystemID Description: Identifies the system that is exchanging data with G-Invoicing. In: header Type: string [100] Required: false (may be required for partners acting on behalf of agency systems, see Note above for details).

Component	Detail / Description
	Name: Agency-Tracking-Identifier Description: Unique identifier from agency system, optionally supplied in the request. In: header Type: string [50] Required: false
Consumes	N/A
Produces	Status Code: 200 Description: Successful call returns Call Detail and a list of Orders. Content Type: application/xml Schema(s): Call Detail, Document List

3.2.3.5 Resource: Single Order by ID

Component	Detail / Description
Path	Ginv/services/v1_0/order/<id>
Method	GET
Description	Returns an individual Order referenced by the passed unique identifier for an individual Order. Keys to data related to an Order (e.g., Attachment ID, Performance ID) are obtained by pulling the Single Order by ID.
Example	GET /ginv/services/v1_0/order/O1705-123-234-000146 Host: ws.igt.fiscal.treasury.gov Accept: application/xml Accept Encoding: gzip, deflate Connection: Keep-Alive
Parameters	Name: id Description: A Unique ID referencing an individual Order. In: path (required) Type: string [30] Required: true
	Name: SystemID Description: Identifies the system that is exchanging data with G-Invoicing. In: header Type: string [100] Required: false (may be required for partners acting on behalf of agency systems, see Note above for details).
	Name: Agency-Tracking-Identifier Description: Unique identifier from agency system, optionally supplied in the request. In: header Type: string [50] Required: false
Consumes	N/A

Component	Detail / Description
Produces	Status Code: 200 Description: Successful call returns Call Detail and an individual Order. Content Type: application/xml Schema(s): Call Detail, Order

3.2.3.6 Resource: Single Performance by ID

Component	Detail / Description
Path	Ginv/services/v1_0/performance/{id}
Method	GET
Description	Returns an individual Performance record referenced by the passed unique identifier for an individual Performance record.
Example	GET /ginv/services/v1_0/performance/P1805-123-234-000456 Host: ws.igt.fiscal.treasury.gov Accept: application/xml Accept Encoding: gzip, deflate Connection: Keep-Alive
Parameters	Name: id Description: A Unique ID referencing an individual Performance record. In: path (required) Type: string [30] Required: true
	Name: SystemID Description: Identifies the system that is exchanging data with G-Invoicing. In: header Type: string [100] Required: false (may be required for partners acting on behalf of agency systems, see Note above for details).
	Name: Agency-Tracking-Identifier Description: Unique identifier from agency system, optionally supplied in the request. In: header Type: string [50] Required: false
Consumes	N/A
Produces	Status Code: 200 Description: Successful call returns an individual Performance record. Content Type: application/xml Schema: Performance
	Status Code: 400 Description: User error such as unknown ID. The returned XML will provide details for troubleshooting and support purposes. Content Type: application/xml Schema: Error

Component	Detail / Description
	Status Code: 403 Description: User asked for a Performance record they're not authorized to see. The returned XML will provide details for troubleshooting and support purposes. Content Type: application/xml Schema: Error

3.2.4 Common Headers

3.2.4.1 Accept Header

Component	Detail / Description
Name	Accept
Value	application/xml
Description	Indicates the service client expects content in XML format. No other format is currently supported.

3.2.4.2 Accept-Encoding

Component	Detail / Description
Name	Accept-Encoding
Value	gzip, deflate
Description	Allows the service client to indicate it supports compressing the response payload using gzip compression.

3.2.4.3 Connection Header

Component	Detail / Description
Name	Connection
Value	keep-alive
Description	Indicates the service client wants to use HTTP keep-alive to more efficiently make multiple requests.

3.3 Supported Environments

The G-Invoicing application operates within the Treasury Web Application Infrastructure (TWAI) environments. Interface testing will take place in G-Invoicing's Functional Test and Quality Assurance environments. G-Invoicing operates both Production and Contingency environments.

Fail-over by G-Invoicing from Production to Contingency environments will be transparent.

Table 1: Supported Environments

G-Invoicing TWAI	Use
Functional Test (FT)	Future view of Production (new release) – will be used on a limited basis for interface testing.
Quality Assurance - Current (QAC)	Current view of Production environment – used for agency testing.
Quality Assurance - Future (QAF)	Future view of Production (new release) – used for UAT.
Production	Production

4 Interface Specification

4.1 Processing Logic

4.1.1 Agencies with interfacing systems will make a web service call to G-Invoicing to request new or modified GT&C, Order or Performance information. The credentials for the agency systems are verified by the TWAI. Certificate-based authentication is performed against TWAI policies. Web service requests for G-invoicing data require a United States Department of the Treasury issued certificate.

4.1.2 Validate the parameters that are passed in the request depending on the data being requested (e.g., Document List, Single Document, Single Attachment) as stated in **Section 3.2** of this document. The parameters to be passed are either required, optional, and/or conditional depending on the request.

4.1.3 G-Invoicing will retrieve the requested data.

4.1.4 The data is formatted into an XML document per the XML schema(s) referenced in **Appendix A** of this document.

4.1.5 G-Invoicing transmits the data to the agency system.

4.1.6 If errors are encountered at any time while processing the request, G-Invoicing will capture that data and respond back to the agency partner with the error details.

4.2 Business Rules

4.2.1 All system requests for GT&C, Order, Performance and Attachment data will be fulfilled with data as it exists when the request is answered.

Note: *This statement covers any previous or historical states that a document would have been in prior to its current state. G-Invoicing will not provide a document history (i.e., multiple versions of the same document) or deleted attachments.*

4.2.2 The agency system must be granted permissions (aka, user role) to view the type of data being requested.

4.2.3 The agency system must be provisioned for a Data Access Group containing the ALC(s) and other organizational filters for which the data is being requested.

4.2.3.1 An agency system only requires access to one side of an agreement (Requesting or Servicing) not both to view all data associated with the agreement, including attachments. The agency system will be properly authorized to ensure it is valid for the type of request being submitted.

4.2.3.2 Users granted data access to an Order will be allowed to access Performance related to that Order (assuming they are assigned a role to view Performance).

4.2.4 GT&C and Order document requests submitted with a Status parameter of “Draft” or “Delete” will not be fulfilled.

4.2.5 GT&C and Order requests for Document Types submitted without a Status parameter will return documents in all statuses with the exception of “Draft” and “Delete”. The System will filter these Status Codes and prevent them from being returned in the result set.

Note: *This is an implicit filter that will prevent any GT&C or Order documents from being sent to agencies that are in “Draft” or “Delete” status.*

4.2.6 GT&C and Order document requests submitted with a Status parameter of “Pending Requesting Agency Approval” will not be fulfilled. Orders may only be pulled by the Servicing agency when they have been fully approved by the Requesting agency.

4.2.7 Character entity references ampersand (&) and less than (<) are escaped on output to XML. The escape sequence for ampersand is & and the escape sequence for less than is <.

4.3 File Naming Convention

N/A

4.4 Interface Timing

The web service is available 24 hours per day, 7 days per week. G-Invoicing has a daily scheduled outage for maintenance as noted below.

3:45 AM - 4:15 AM EST (Monday through Saturday)
11:00 AM - 11:30 AM EST (Sunday)

Agency systems are in full control of the frequency and the timing of this interface.

4.5 Retransmissions

Retransmissions are not needed because the G-Invoicing web services provide for synchronous operation in that the agencies with interfacing systems will be waiting for the response from G-Invoicing before continuing.

Should the web service connection somehow fail in the middle of a series of client requests to G-Invoicing (e.g., multiple document requests, multiple attachment requests) the client (i.e., interfacing agency system) is responsible for continuing the requests when services are restored.

4.6 Interface Data Details

The information below documents the data sent for the methods available on the web service. For more details, refer to the XML schemas for the service in Appendix A.

4.6.1 Business – Data Elements

The business data for GT&C and Orders may be accessed on the Bureau of the Fiscal Service G-Invoicing website.

The data elements in Table 2 will be returned with each single GT&C, Order or Performance request where the requested document contains one or more attachments. This data describes each attachment and provides the means (i.e., URL) for a subsequent request to retrieve the attachment(s).

Table 2: Attachment Summary Data Elements

Familiar Name	XML Tag	Definition	Constraints	Optionality
Attachment File Name	<FileName>	The actual name of the attachment file.	String [1, 32] Maximum length = 132 String UTF-8	Required
Attachment File Alias	<FileNameAlias>	Descriptive name for an attachment. Different from the name assigned to the file itself.	String [0,132] Maximum length = 132 String UTF-8	Optional
Attachment ID	<AttachmentID>	Unique identifier for an attachment.	Integer Maximum length = 30	Required
Attachment Updated By	<FullName>	The username or partner (Buyer or Seller) that uploaded the attachment.	String [0,100] Maximum length = 100 String UTF-8	Required
Attachment Date Time	<UploadDateTime>	The date and time the file was uploaded into G-Invoicing.	DateTime Format: YYYY-MM-DDThh:mm:ss.SSS+|-00:00 All time should be specified in local time zone with time zone offset from UTC in hours and minutes ahead (+) or behind (-) UTC.	Required

Familiar Name	XML Tag	Definition	Constraints	Optionality
File Size	<FileSize>	The size of the attachment expressed in kilobytes (kB).	Integer Minimum length = 1 Maximum length = 8	Required
Document URL	<URL>	The URL that will be used in a subsequent request by the agency system to retrieve the attachment.	String [0, 4000] Maximum length = 4000 String UTF-8	Required

4.6.2 Response – Data elements

The data elements below in Table 3 will be returned in the body of every response generated by G-Invoicing. The data elements contained in Table 4 will be returned when requesting a list of new or modified documents from G-Invoicing.

Table 3: Call Detail Response Data Elements

Familiar Name	XML Tag	Definition	Constraints	Optionality
Agency Partner ID	<PartnerID>	Identifies the intended recipient of the transmission.	String [100] Minimum length = 0 Maximum length = 100 String UTF-8	Required
Agency System ID	<SystemID>	Identifies the system that is exchanging data with G-Invoicing.	String [100] Minimum length = 0 Maximum length = 100 String UTF-8	Optional
Agency Tracking Identifier	<RequestID>	Unique identifier, optionally supplied in the request and echoed back in the response.	String [50] Minimum length = 0 Maximum length = 50 String UTF-8	Optional
G-Invoicing Tracking Identifier	<GINVTrackingID>	Unique tracking identifier, generated by G-Invoicing.	String [50] Minimum length = 1 Maximum length = 50 String UTF-8	Required
Environment	<Environment>	Describes the environment in which the system interface resides.	String [30] Minimum length = 0 Maximum length = 30 String UTF-8 Values: “Production”, “Quality Assurance”, “Functional Test”.	Required

Familiar Name	XML Tag	Definition	Constraints	Optionality
Request Type	<RequestType>	Type of request that was submitted to G-Invoicing by the agency system.	String [30] Minimum length = 0 Maximum length = 30 String UTF-8 Values: “GTC List”, “Order List”, “Performance List”, “Single GTC”, “Single Order”, “Single Performance”, “Single Attachment”. ***Note:*** *Values are derived from the service that is being accessed.*	Required
Record Count	<RecordCount>	The total number of records in the payload.	Integer Minimum length = 1 Maximum length = 8	Required

Table 4: Document List Data Elements

Familiar Name	XML Tag	Definition	Constraints	Optionality
Requesting Agency Location Code	<RequestingAgencyLocationCode>	Unique identifier for a federal agency buying goods and/or services.	String [0-9]{8} (i.e., Digits 0 to 9. Length must be eight digits.) String UTF-8.	Required
Servicing Agency Location Code	<ServicingAgencyLocationCode>	Unique identifier for a federal agency selling goods and/or services.	String [0-9]{8} (i.e., Digits 0 to 9. Length must be eight digits.) String UTF-8.	Required
Document Type	<DocumentType>	Describes the document type (e.g., GT&C, Order) that was requested.	String [30] Minimum length = 0 Maximum length = 30 String UTF-8 Values: “GTC”, “Order”~~,~~ ~~“Performance”, “Attachment”~~	Required
Manual Entry Indicator	<Manual EntryIndicator>	This indicator determines whether the document was introduced by a user or a system.	String Enumeration: “Y” (Yes), “N” (No) “Y” indicates System generated “N” indicates User generated	Required
Document ID	<DocumentNumber>	Unique identifier for a document.	String [20] Minimum length = 0 Maximum length = 20 String UTF-8 [A-Z, 0-9, -] (i.e., upper case alpha characters, digits 0-9, and dashes.)	Required

Familiar Name	XML Tag	Definition	Constraints	Optionality
Modification Number	<ModificationNumber>	Unique identifier assigned to a document that has been modified form the original.	Integer Maximum length = 10	Conditional
Status	<Status>	The current status of the document.	See Federal Intragovernmental Data Standards (FIDS).	Required
Last Modified Date/Time	<LastModifiedDateTime>	The date/time the document was last modified.	DateTime Format: YYYY-MM-DDThh:mm:ss.SSS+|-00:00 All time should be specified in local time zone with time zone offset from UTC in hours and minutes ahead (+) or behind (-) UTC.	Required
Document URL	<URL>	The URL that will be used in a subsequent request by the agency system to retrieve the document.	String [4000] Minimum length = 0 Maximumlength = 4000 String UTF-8	Required

5 Error Specifications

Standard web service faults are generated for exceptions that can cause the request to not be processed. If the agency system cannot be authenticated or authorized, then a fault is returned. If the requested resource is unavailable then a fault will be thrown. All services may return the following HTTP status codes along with variable error message text describing the error(s) in the response.

Error ID	HTTP Status Code	Example
1	400 – Bad Request ValidationFailedException ***Note:*** *Message text included in the <ErrorDesc> element will vary depending on the error condition.*	<ns0:ErrorDetail> <ns0:ErrorDesc>ValidationFailedException message = Requesting agency Point Of Contact Full Name is required.</ns0:ErrorDesc> <ns0:ErrorTitle>400 ValidationFailedException</ns0:ErrorTitle> <ns0:RequestDateTime>2018-05-24T15:43:27.578-04:00</ns0:RequestDateTime> <ns0:RequestTypeIdentifier>Order Create</ns0:RequestTypeIdentifier> <ns0:Status>400</ns0:Status> </ns0:ErrorDetail>
2	403 – Unauthorized AccessDeniedException ***Note:*** *Message text included in the <ErrorDesc> element will vary depending on the error condition.*	<ns0:ErrorDetail> <ns0:ErrorDesc>AccessDeniedException message = User is not authorized to the system.</ns0:ErrorDesc> <ns0:ErrorTitle>403 AccessDeniedException</ns0:ErrorTitle> <ns0:RequestDateTime>2018-05-23T08:33:04.426-04:00</ns0:RequestDateTime> <ns0:RequestTypeIdentifier>Order Create</ns0:RequestTypeIdentifier> <ns0:Status>403</ns0:Status> </ns0:ErrorDetail> </Ginv_Error>
3	500 – Internal Server Error ServerException ***Note:*** *Message text included in the <ErrorDesc> element will vary depending on the error condition.*	<ns0:ErrorDetail> <ns0:ErrorDesc>ServerException message = Multiple users found.</ns0:ErrorDesc> <ns0:ErrorTitle>500 ServerException</ns0:ErrorTitle> <ns0:RequestDateTime>2018-05-23T08:29:07.566-04:00</ns0:RequestDateTime> <ns0:RequestTypeIdentifier>Order Create</ns0:RequestTypeIdentifier> <ns0:Status>500</ns0:Status> </ns0:ErrorDetail>

6 User Interface (UI) Specification

N/A

7 Security

The TWAI will accept web service traffic, perform certificate-based authentication against security policies, and route the requests to G-Invoicing. Separate certificates are needed for test and production environments.

No Personal Identifying Information (PII) is being transported by this system interface. There is no risk that this interface or the included functions will allow additional access to G-Invoicing data.

The Department of Defense has rated information contained in G-Invoicing as Mission Assurance Category III. The MAC III rating is for systems handling information that is necessary to conduct day-to-day business, but does not materially affect support to deployed or contingency forces in the short-term. The consequences of loss of integrity or availability can be tolerated or overcome without significant impacts on mission effectiveness or operational readiness. The consequences could include the delay or degradation of services or commodities enabling routine activities. Mission Assurance Category III systems require protective measures, techniques or procedures generally commensurate with commercial best practices.

8 Interface Integrity

8.1 TWAI

TWAI security infrastructure, policies and procedures guarantee that only authenticated and authorized entities are permitted access to the G-Invoicing application and its assets. Virus detection, intrusion detection, and network and infrastructure monitoring software and hardware are provided by and operated in the TWAI (see TWAI Security Architecture document).

8.2 Communication Channel

Adhere to the Guidelines for protecting sensitive data during electronic dissemination across networks as stated in the NIST Special Publication (SP) 800-52 (rev 1), Selection, Configuration, and Use of Transport Layer Security (TLS) Implementations.

Meet security requirements for NIST Special Publication (SP) 800-53 (rev 4), Recommended Security Controls for Federal Information Systems, and other applicable guidance, such as Treasury Directive Publication (TDP) 85-01.

Appendix A: Messaging Protocol & Data Encapsulation

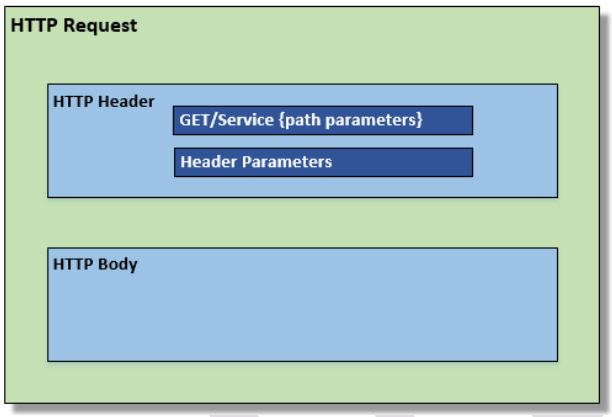
1 G-Invoicing Message Encapsulation

Transmissions into and out of G-Invoicing will utilize RESTful web-services over the internet with an XML payload. The HTTP Request and Response will have the structure depicted in diagrams in 1.1 and 1.2 below.

Note: The G-Invoicing framework will output empty XML tags when elements do not contain data.

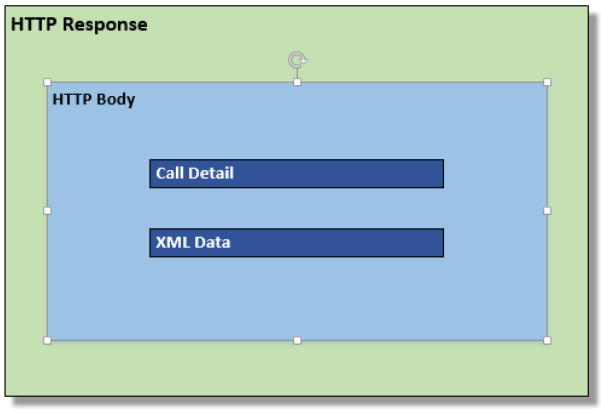
1.1 HTTP Request

The HTTP Request will have an empty Body when the Header contains a “GET” command. When the Request contains a “PUT” command the Body will contain an XML payload.

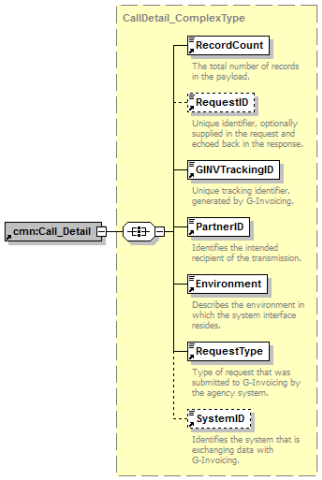


1.2 HTTP Response

Call Detail data will be returned in every response generated by G-Invoicing with the exception of the individual attachment download. Call Detail contains metadata about the Request/Response. The Call Detail data will be part of the HTTP Body and precede any data included in the response that satisfies the initial request.



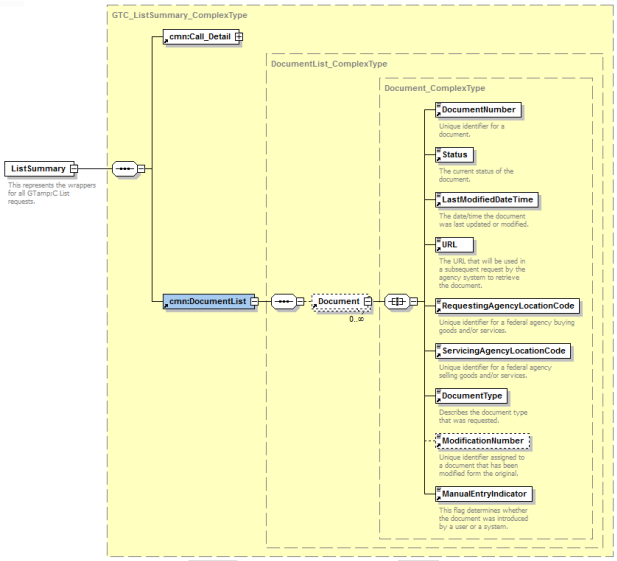
2 Call Detail



Call Detail Sample XML

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2017 sp2 (x64) (http://www.altova.com)-->
<cmn:Call_Detail xmlns:cmn="urn:us:gov:treasury"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:us:gov:treasury:ginv:gtc GTC.xsd">
        <cmn:RecordCount>50</cmn:RecordCount>
        <cmn:RequestID>277655239</cmn:RequestID>
        <cmn:GINVTrackingID>3357822214</cmn:GINVTrackingID>
        <cmn:PartnerID>1789</cmn:PartnerID>
        <cmn:Environment>Production</cmn:Environment>
        <cmn:RequestType>Single GTC</cmn:RequestType>
        <cmn:SystemID>789</cmn:SystemID>
</cmn:Call_Detail>
```

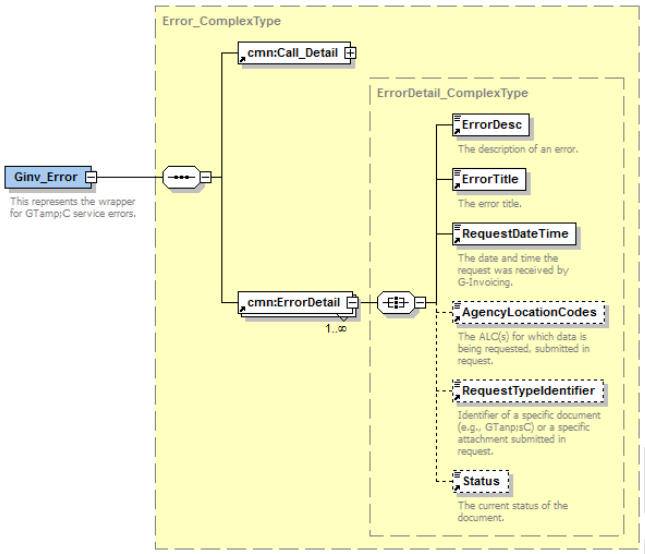
3 Document List



Document List Sample XML

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2017 sp2 (x64) (http://www.altova.com)-->
<cmn:DocumentList xmlns:cmn="urn:us:gov:treasury" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:us:gov:treasury:ginv:documents Documents_Summary.xsd">
    <cmn:Document>
            <cmn:DocumentNumber>A1610-017-017-000170</cmn:DocumentNumber>
            <cmn:Status>REC</cmn:Status>
            <cmn:LastModifiedDateTime>2017-08-28T14:05:37.534-04:00</cmn:LastModifiedDateTime>
            <cmn:URL>https://host-name:port/base-path/resource-path</cmn:URL>
            <cmn:RequestingAgencyLocationCode>00005023</cmn:RequestingAgencyLocationCode>
            <cmn:ServicingAgencyLocationCode>00005197</cmn:ServicingAgencyLocationCode>
            <cmn:DocumentType>GTC</cmn:DocumentType>
            <cmn:ModificationNumber/>
            <cmn:ManualEntryIndicator>Y</cmn:ManualEntryIndicator>
    </cmn:Document>
</cmn:DocumentList>
```

4 Error



Error Sample XML

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2017 sp2 (x64) (http://www.altova.com)-->
<cmn:ErrorDetail xmlns:cmn="urn:us:gov:treasury" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:us:gov:treasury:ginv:error Error.xsd">
    <cmn:ErrorDesc>Unknown GTC ID provided. Correct and resubmit.</cmn:ErrorDesc>
    <cmn:ErrorTitle>400 Unknown GTC ID</cmn:ErrorTitle>
    <cmn:RequestDateTime>2017-08-28T14:05:37.534-04:00</cmn:RequestDateTime>
    <cmn:AgencyLocationCodes>00008501,00008502</cmn:AgencyLocationCodes>
    <cmn:RequestTypeIdentifier/>
    <cmn:Status>PND</cmn:Status>
</cmn:ErrorDetail>
```