

G-Invoicing

JSON System Interface Specifications – Pull

A Guide to extracting GT&C, Order, Performance and
7600EZ data from G-Invoicing
in JSON format

General Terms and Conditions (GT&Cs)
Orders
Performances
7600EZs

Version 2.2

March 2024



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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, Performance and 7600EZ data from the G-Invoicing application to Federal Program Agency systems. 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, Performance, 7600EZ data in JSON (JavaScript Object Notation) format. This version of the document provides an alternative to the XML-based interfaces. The G-Invoicing 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 of these services may be found in the on the [G-Invoicing website](#).

- 1.3.1** The Federal Intragovernmental Data Standards (FIDS) for GT&C, Order, Performance and 7600EZ 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 and 7600EZ data because there are not multiple, complex status scenarios to support. Validation rules appear in the Performance and 7600EZ FIDS.*

- 1.3.3** JSON Service Specifications

See the *JSON Services* section on the [G-Invoicing website](#)

2 Assumptions/Constraints

2.1 Assumptions

The interface transmission of GT&C, Order, Performance and 7600EZ data outbound from G-Invoicing to agencies with interfacing systems.

2.2 Constraints

1. This interface will be delivered via web services, access governed by the Treasury Web Application Infrastructure (TWA), 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. As described above in section 1.3.3, JSON schemas are published on the [G-Invoicing website](#). These schemas will be used to format the body 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 REST Services with a JSON body.

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

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 agency account can represent multiple Systems spread across many agency accounts. Policy requires that at least one System ID must be created and managed in each agency account to push data. The Partner ID must be assigned a client certificate to access G-Invoicing.*

3.2.3.1 Resource: Document List

Component	Detail / Description
Paths	/ginv/services/v3_0/gtc/ /ginv/services/v3_0/order/ /ginv/services/v3_0/order/performance/ /ginv/services/v1_0/ez/
Method	GET
Description	Returns a list of GT&Cs, Orders, Performances or 7600EZs that the system id is authorized to access.
Parameters	<p><u>Name:</u> agencyLocationCode <u>Description:</u> Limits results to documents which contains at least one of the passed ALCs. <u>Paths:</u> gtc, order, performance and ez <u>In:</u> query <u>Type:</u> Comma separated array of strings <u>Required:</u> false</p>
	<p><u>Name:</u> status <u>Description:</u> Limits results of list to the passed status types. <u>Paths:</u> gtc, order, performance and ez <u>In:</u> query <u>Type:</u> Comma separated array of strings, enumeration <u>GT&C Values:</u> "REC" (Open), "CLZ" (Closed), "PND" (Pending Approval), "REJ" (Rejected). <u>Order Values:</u> "P1A" (Pending Partner 1 Approval), "SP2" (Shared with Partner 2), "P2A" (Pending Partner 2 Approval), "REC" (Open), "DR" (Draft - when Order Mod>0), "REJ" (Rejected), "CLZ" (Closed), "MOD" (Modification) <u>Performance Values:</u> "STL" (Settled), "INF" (Informational), "PND" (Pending), "XXX" (Deleted) <u>7600EZ Values:</u> "DR" (Draft), "STL" (Settled), "INF" (Informational), "PND" (Pending), "XXX" (Deleted) <u>Required:</u> false</p>
	<p><u>Name:</u> lastModifiedDateTime <u>Description:</u> Limits results to GT&Cs updated since the passed date/time. <u>Paths:</u> gtc, order, performance and ez <u>In:</u> query <u>Type:</u> dateTime <u>Format:</u> YYYY-MM-DDThh:mm:ss.SSSZ or YYYY-MM-DDThh:mm:ss.SSS+ -00:00 Can be formatted in Zulu (UTC) or with a time zone offset. All responses in JSON will be returned in Zulu (UTC). <u>Required:</u> false</p>
	<p><u>Name:</u> gtcNumber <u>Description:</u> Limits results to a single GT&C <u>Paths:</u> order and ez <u>In:</u> query <u>Type:</u> string [20] <u>Required:</u> false</p>
	<p><u>Name:</u> orderNumber <u>Description:</u> Limits results to a single Order <u>Paths:</u> performance <u>In:</u> query <u>Type:</u> string [20]</p>

	<u>Required</u> : false
Headers	<u>Name</u> : systemid <u>Description</u> : Identifies the system that is exchanging data with G-Invoicing. <u>In</u> : header <u>Type</u> : string [100] <u>Required</u> : true
	<u>Name</u> : agency-tracking-identifier <u>Description</u> : Unique identifier from agency system, optionally supplied in the request. <u>In</u> : header <u>Type</u> : string [50] <u>Required</u> : false
Consumes	N/A
Produces	<u>Status Code</u> : 200 <u>Description</u> : Successful call returns Call Detail and a list of GT&Cs, Orders, Performances or 7600EZs. <u>Content Type</u> : application/json <u>Schema(s)</u> : Call Detail , Document List

3.2.3.2 Resource: Single Document by ID

Component	Detail / Description
Path	/ginv/services/v3_0/gtc/<id> /ginv/services/v3_0/order/<id> /ginv/services/v3_0/order/performance/<id> /ginv/services/v1_0/ez/<id>
Method	GET
Description	Returns an individual GT&C, Order, Performance or 7600EZ referenced by the passed unique id; the systemid must be authorized to access the id.
Parameters	<u>Name</u> : id <u>Description</u> : A Unique ID referencing an individual document. <u>In</u> : path (required) <u>Type</u> : string [20] <u>Required</u> : true
	<u>Name</u> : modNbr <u>Description</u> : Allow a system to pull specific modification of an Order <u>Paths</u> : order <u>In</u> : query <u>Type</u> : numeric [10] <u>required</u> : false
Headers	<u>Name</u> : systemid <u>Description</u> : Identifies the system that is exchanging data with G-Invoicing. <u>In</u> : header <u>Type</u> : string [100] <u>Required</u> : true

	<u>Name:</u> agency-tracking-identifier <u>Description:</u> Unique identifier from agency system, optionally supplied in the request. <u>In:</u> header <u>Type:</u> string [50] Required: false
Consumes	N/A
Produces	<u>Status Code:</u> 200 <u>Description:</u> Successful call returns Call Detail and an individual document. <u>Content Type:</u> application/json <u>Schema(s):</u> Call Detail , Refer to Open API documentation

3.2.3.3 Resource: Single Attachment by ID

Component	Detail / Description
Paths	/ginv/services/v3_0/gtc/attachment/<id> /ginv/services/v3_0/order/attachment/<id> /ginv/services/v3_0/order/performance/attachment/<id> /ginv/services/v1_0/ez/attachment/<id>
Method	GET
Description	Returns an individual Attachment referenced by the passed unique ID.
Parameters	<u>Name:</u> id <u>Description:</u> A Unique ID referencing an individual Attachment. <u>In:</u> path <u>Type:</u> string [30] <u>Required:</u> true
Headers	<u>Name:</u> systemid <u>Description:</u> Identifies the system that is exchanging data with G-Invoicing. <u>In:</u> header <u>Type:</u> string [100] Required: true
	<u>Name:</u> agency-tracking-identifier <u>Description:</u> Unique identifier from agency system, optionally supplied in the request. <u>In:</u> header <u>Type:</u> string [50] Required: false
Consumes	N/A
Produces	<u>Status Code:</u> 200 <u>Description:</u> Successful call returns the binary content of the Attachment file. <u>Content Type:</u> application/octet-stream <u>Schema(s):</u> file

3.2.4 Common Headers

3.2.4.1 Accept Header

Component	Detail / Description
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Name	Accept
Value	application/json
Description	Indicates the service client expects content in JSON format. <i>Note: XML is also supported through older versions of this interface. See Pull XML specification.</i>

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 (TWA) 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 TWA	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 & vendor testing.
Quality Assurance - Future (QAF)	Future view of Production (new release) – used for UAT & vendor testing.
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, Performance or 7600EZ information. The credentials for the agency systems are verified by the TWA. 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 a JSON payload per the JSON schema(s) referenced in section 1.3.3 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 System requests for GT&C, Order, Performance, 7600EZ 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 assigned to Organizational Group(s) containing the ALC(s) for which the data is being requested.
 - 4.2.3.1 An agency system only requires access to one side of a document (Requesting or Servicing) not both to view all data associated with the document, 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.
- 4.2.4 GT&C and Order document requests submitted with a Status parameter of “Delete” will not be fulfilled.
Note: There are no restrictions on pulling deleted Performance or 7600EZ records.
- 4.2.5 GT&C document requests submitted with a Status parameter of “Draft” (DR) will not be fulfilled.
- 4.2.6 Order document requests submitted with a Status parameter of “Draft” (DR) will only return Orders with Modification Number > 0.
- 4.2.7 7600EZ document request submitted with a Status parameter of “Draft” (DR) will be

fulfilled.

- 4.2.8 GT&C, Order, Performance and 7600EZ requests for Document Types submitted without a Status parameter will return documents in all statuses, except where noted above.

4.3 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.

4.4 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.

4.5 Interface Data Details

The information below documents the data sent for the methods available on the web service. For more details, refer to the JSON schemas for the service in section 1.3.3.

4.5.1 Business – Data Elements

The business data for GT&C may be accessed on the [Bureau of the Fiscal Service G-Invoicing](#) website.

The data elements in Table 2 will be returned with each document 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	JSON Key	Definition	Constraints	Optionality
Attachment File Name	fileNm	The actual name of the attachment file.	String Maximum length = 132	Required
Attachment File Alias	fileNameAlias	Descriptive name for an attachment. Different from the name assigned to the file itself.	String Maximum length = 132	Optional
Attachment ID	id	Unique identifier for an attachment.	Integer Maximum length = 30	Required

Attachment Updated By	createUsr	The username or partner (Buyer or Seller) that uploaded the attachment.	String Maximum length = 100	Required
Attachment Date Time	uploadDtTm	The date and time the file was uploaded into G-Invoicing.	DateTime Format: YYYY-MM-DDThh:mm:ss.SSSZ	Required
File Size	fileSize	The size of the attachment expressed in bytes. Note: <i>Small files may be expressed as 0 kB in the UI.</i>	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 Maximum length = 4000	Required
Buy/Sell Indicator	buySellIndicator	Identifies the partner that created the attachment.	String [1] Values 'R', 'S'	Required

4.5.2 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	JSON Key	Definition	Constraints	Optionality
Agency Partner ID	partnerId	Identifies the intended recipient of the transmission.	String Maximum length = 100 String UTF-8	Required
Agency System ID	systemId	Identifies the system that is exchanging data with G-Invoicing.	String Minimum length = 1 Maximum length = 100 String UTF-8	Required
Agency Tracking Identifier	requestId	Unique identifier, optionally supplied in the request and echoed back in the response.	String Maximum length = 50 String UTF-8	Optional
G-Invoicing Tracking Identifier	ginvTrackingId	Unique tracking identifier, generated by G-Invoicing.	String Maximum length = 50 String UTF-8	Required
Environment	environment	Describes the environment in which the system interface resides.	String Maximum length = 30 String UTF-8 Values: "Production", "Quality Assurance", "Functional Test".	Required
Request Type	requestType	Type of request that was submitted to G-Invoicing by the agency system.	String Maximum length = 30 String UTF-8 Values: "GTC List", "Order List", "Single GTC", "Single Attachment". Note: <i>Values are derived from the service being accessed.</i>	Required

Record Count	recordCount	The total number of records in the payload.	Integer Maximum length = 8	Required
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Table 4: Document List Data Elements

Familiar Name	JSON Property	Definition	Constraints	Optionality
Requesting Agency Location Code(s)	"requestingAgencyLocationCodes": ["00000000"]	Unique identifier(s) for a federal agency buying goods and/or services. GT&Cs: 1-to-many ALCs per side.	Array {String}, Digits 0 to 9, Length must be 8 digits	Required
Servicing Agency Location Code(s)	"servicingAgencyLocationCodes": ["00000000"],	Orders: Only one ALC for per side, each appearing in array. Performance: Only one ALC for per side, each appearing in array. 7600EZ: Only one ALC for per side, each appearing in array.	Array {String}, Digits 0 to 9, Length must be 8 digits	Required
Document Type	documentType	Describes the document type (e.g., GT&C, Order, Performance or 7600EZ) that was requested.	String [30] Minimum length = 0 Maximum length = 30 String UTF-8 Values: "GTC", "Performance" and 7600EZ For Orders the DocumentType is being utilized to indicate an In-flight Order. There are 5 different DocumentType values: APIOrder: In-flight Order = No UIOrder: In-flight Order = No UIOrderIFO: In-flight Order = Yes UIOrderUpload: In-flight Order = No UIOrderUpload IFO: In-flight Order = Yes	Required
Manual Entry Indicator	manualEntryIndicator	Indicates whether the document was introduced by a user or a system.	String Values: 'Y' (Yes), 'N' (No) 'N' indicates System generated 'Y' indicates User generated	Required
Document ID	documentNumber	Unique identifier for a document.	String [20] Maximum length = 20 String	Required

Modification Number	modificationNumber	Unique identifier assigned to a GT&C or Order document that has been modified from the original.	Integer Maximum length = 10	Conditional
Status	status	Current status of the document.	See Federal Intragovernmental Data Standards (FIDS).	Required
Modification Originator	modOriginator	Only returned on the Order list call when an Order is in status= "MOD"	See JSON Push Specifications.	Conditional
Modification Status	modStatus	Only returned on the Order list call when an Order is in status= "MOD"	See JSON Push Specifications for additional information on the different statuses.	Conditional
Last Modified Date/Time	lastModifiedDateTime	The date/time the document was last updated.	DateTime Format: YYYY-MM-DDThh:mm:ss.SSSZ	Required
Document URL	url	The URL that will be used in a subsequent request by the agency system to retrieve the document.	String Maximum length = 4000	Required
Order Originating Partner Indicator	orderOriginatingPartnerIndicator	Identifies the partner that can create and modify Orders. Only returned on GTC and Order list calls.	String [1] Values 'R', 'S'	Conditional

5 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.

6 Interface Integrity

6.1 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.

6.2 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.

7 Revision History

Vers. Num.	Date of Change	G-Inv Rel.	Change/Revision Description	Page/Section Affected
1.0	07/01/22	4.6	Initial Draft (copied from XML version created in 2016). Removed all references to Orders and Performance. Changed XML references to JSON nomenclature.	All
2.0	12/08/22	5.1	Added Order, Performance and 7600EZ to document	All
2.1	06/08/23	5.2	Added modNbr to Order detail pull parameter	3.2.3.2
2,2	03/04/24	7.0	Added fields in support of Bidirectional Modification	3.2.3.1 & Table 4