Government Invoicing (G-Invoicing) System Integration Guide

Document Version 1.0

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How to Use This Document

The purpose of the G-Invoicing System Integration Guide is to communicate how Federal Program Agencies (FPA) may utilize automated data exchanges to communicate IGT Buy/Sell activities to/from G-Invoicing. This document describes the automated data exchanges, provides references to additional information, and details steps needed to establish system interfaces with G-Invoicing.

The document is intended for FPA technical resources and/or their vendors, who will be working with the G-Invoicing Team to implement application program interfaces (APIs) to/from G-Invoicing. This guide is organized into two sections:

Section 1: Overview describes the business purpose and technical capabilities of G-Invoicing at a high level. Additional business information is available on the G-Invoicing website.

Section 2: Services and Options define the various resources available through G-Invoicing's services. This information will be used to select the most effective interface options for each agency.

For instructions on how your agency can begin preparing for G-Invoicing, see the *G-Invoicing Playbook* on the G-Invoicing website, which will be available in May 2019.

1 Overview

1.1 G-Invoicing Business Overview

G-Invoicing is a Fiscal Service application designed to improve the quality and reliability of Intragovernmental Transactions (IGT) Buy/Sell data in support of increased transparency and enhanced government-wide financial management. G-Invoicing is the government's long-term sustainable solution for Buy/Sell transactions. The application is required to be used by all FPAs and is offered at no charge.

G-Invoicing will manage the receipt and acceptance of General Terms and Conditions (GT&C) Agreements, Orders, and Performance. It also will initiate fund settlement for Buy/Sell transactions based on performance. As each step of the Buy/Sell lifecycle is implemented in G-Invoicing, the information sharing between trading partners improves the accuracy of accounting and reporting. The General Terms and Conditions (GT&C) will begin facilitating trading partner communication in a common repository. This will support the alignment of processes between trading partners and the use of a common set of terms, which will replace the various manual forms used today like the Fiscal Service Form 7600A/B, Military Interdepartmental Purchase Request (MIPR), etc. Once trading partners begin entering orders in the G-Invoicing system, data in the common repository will be leveraged to support improved accuracy in accounting and reporting. At the time of the payment or collection, the performance and settlement steps will be fully supported by brokered GT&Cs and the accounting details included on the orders.

With the increased sharing of information in a common repository coupled with the agreement between trading partners at each step of the lifecycle, a decrease in Buy/Sell intragovernmental elimination differences is expected. If an intragovernmental elimination difference still occurs, G-Invoicing will provide a repository of detailed information to research the difference, which will help both the trading partners and Fiscal Service resolve the difference.

1.2 G-Invoicing Technical Overview

Figure 1 (G-Invoicing High-Level Logical Architecture) depicts the technical architecture that provides the security and functionality necessary to support the various G-Invoicing services.

The technical architecture supports the following major functions:

- API Gateway
- e-Mail Server
- User/System Provisioning
- Business Logic
- Authentication Subsystem
- User/System Directory
- G-Invoicing Database

G-Invoicing utilizes secure Representational State Transfer (REST) web services to exchange data with agency systems. Agency clients initiate G-Invoicing services as needed.

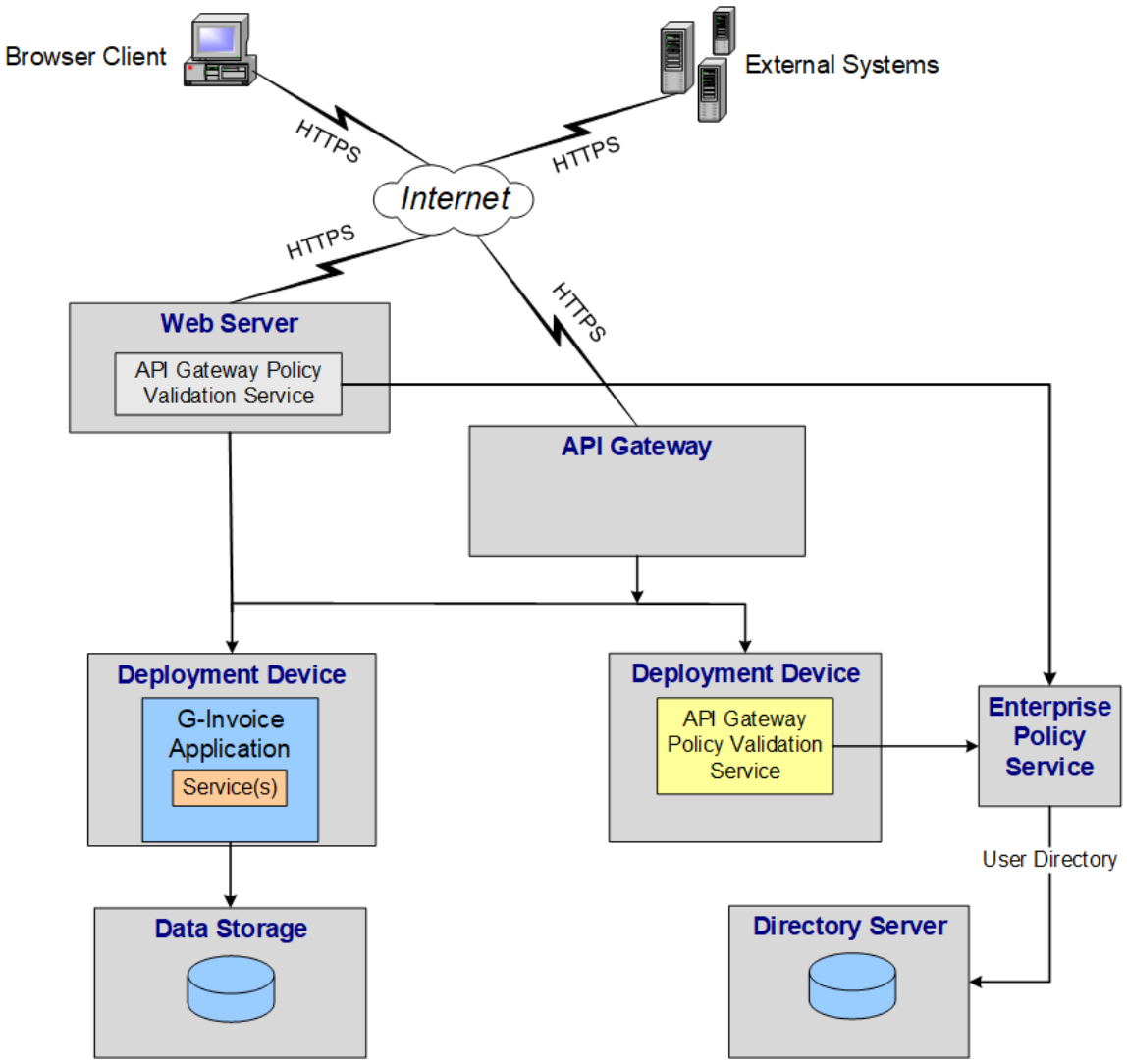

Figure 1. G-Invoicing High-Level Logical Architecture

1.2.1 API Gateway

An API gateway is used to secure and accelerate XML and Web Services processing. This gateway provides a variety of functionality, including terminating the server side SSL (Secure Sockets Layer) connection between a web service client and the Treasury Web Application Infrastructure (TWAI). SSL provides a two-way connection requiring both a client and a server digital certificate to authenticate both ends of the connection. Without a valid digital certificate, the API gateway will not establish the connection between G-Invoicing and the agency client, and access to services will be denied.

Once the two-way SSL connection has been established, the API Gateway provides the same client digital certificate used to establish the connection to the Authentication System, which authenticates the client to the application/web service.

1.2.2 Authentication Subsystem

The Authentication system utilizes the client digital certificate to look up the web services client in the User/System directory, by subject name. Finding the web services client in the User/System directory authenticates the client to the web service. Otherwise, the client is not authenticated and the Authentication System instructs the web services client that it is not authorized for G-Invoicing services.

G-Invoicing requires a Partner ID be established for each agency client. The Partner ID will be assigned a digital certificate to access G-Invoicing through an API Gateway. The Partner ID may represent one-to-many agency systems, each assigned a System ID. A single System ID can only access one disburser account, but a single Partner ID can point to many System IDs spread across multiple disburser accounts. Permissions for System IDs (i.e., roles and data access) are controlled by agency User Administrators.

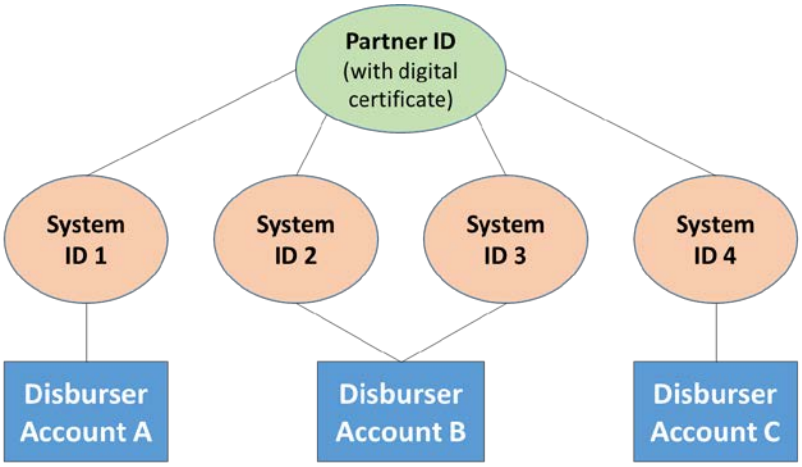

Figure 2. Partner ID/System ID Relationship

G-Invoicing Support personnel are primarily responsible for working with FPAs to set up new Partner IDs, digital certificates and System IDs. Your Agency Implementation Team (AIT) resource can assist in the steps necessary to work with the G-Invoicing team to set up automated test and production users. Please refer to the G-Invoicing Playbook (on the G-Invoicing website) if your agency has not yet been assigned an AIT representative.

1.2.3 e-Mail Service

The e-mail service is used to distribute notifications via e-mail. User Administrators may subscribe a user to receive notifications for one or more document types (e.g., GT&C, Order, Performance). Each time a document changes status or an attachment is added/removed, an e-mail will be sent to any subscribed user that has access to that document. See the Disburser Administration User Guide for instructions on how to subscribe a user.

1.2.4 User/System Directory

The User/System directory is an LDAP-based directory that contains information for all users and systems requiring access to Treasury infrastructure and applications. Once a user or system is authenticated, authorization information from the LDAP is provided to the application for additional security and other application functionality.

1.2.5 User/System Provisioning Authorization

Within the Disburser Administration module, agency administrators must properly authorize system (and human) users before they access G-Invoicing. Organizational Administrators create and manage organizational structures called Data Access Groups (DAG) that are used control access to G-Invoicing documents. User Administrators assign roles to users to grant read/write privileges and assign DAGs to control access to documents. These assignments must be made for System IDs before G-Invoicing web services will allow update and retrieval of documents.

1.2.6 G-Invoicing Database

The G-Invoicing database is a repository that contains agency configuration and user data, as well as the transactional data exchanged between IGT Buy/Sell trading partners. The database is fully replicated and clustered to handle scalability and fault tolerance requirements.

1.2.7 Business Logic

Contained within the G-Invoicing web application is the business logic that drives G-Invoicing capabilities. The business logic is broken out into the following areas.

1.2.7.1 Customer Service (CSR) module is used by G-Invoicing Operations personnel to establish new agency accounts (aka, disburser accounts). Initial agency configurations are established and the initial Primary Disburser Administrator (i.e., User Administrator) is created. FPAs are not granted access to the CSR module.

1.2.7.2 Disburser Administration module allows agency users holding administrative roles to manage their organizational structure, manage users, grant users access to roles and organizations, and configure data requirements.

1.2.7.3 Disburser module allows users (human or system) to act as Requesting or Servicing Agency representatives to view and maintain documents related to IGT Buy/Sell. Documents include the General Terms and Conditions, Orders and Performance, along with any attachments to these documents.

Supporting the Disburser module, G-Invoicing currently provides two Application Program Interfaces (API) to authorized client users:

- **Pull API** – allows agency clients to extract General Terms and Conditions (GT&C), Orders and Performance data, and attachments supporting that data, submitted by their trading partners or by their own agency users.
- **Push API** – allows agency clients to upload Orders and Performance data (and attachments supporting that data) to G-Invoicing so that information can be shared with their trading partners and made available to their own agency users.

2 Services and Options

This section provides an overview of the G-Invoicing service and connectivity options for agencies. This information can be used to determine how best to interact with G-Invoicing. While much of this section is devoted to G-Invoicing's automated web services, there are several options for a human user to import and export data manually. See the Disburser Administration User Guide or Intragovernmental Disburser Module User Guide for further details.

2.1 Manual Data Imports

2.1.1 **Users** may be imported by User Administrators.

2.1.2 **Organizational Reference Data** may be imported by Organizational Administrators.

2.1.3 **Data Access Groups** may be imported by Organizational Administrators.

G-Invoicing does allow automated importing and exporting of data to/from G-Invoicing through the user interface (UI), but software releases which include UI changes may interrupt these types of interfaces. Agencies are encouraged to automate data updates and extractions by taking advantage of the APIs, which will be maintained to be backwards compatible. G-Invoicing reserves the right to modify the UI at any time and without advance notice, but agencies will be given time to move off of older versions of the APIs.

2.2 Manual Data Exports

2.2.1 **User Profiles** may be exported by User Administrators.

2.2.2 **Organizational Reference Data** may be exported by Organizational Administrators.

2.2.3 **GT&Cs** may be filtered and exported by users assigned a GT&C Viewer permissions.

2.2.4 **Orders** may be filtered and exported by users assigned an Order Viewer permissions.

Additional manual data exports are planned and will be described in Release Notes and User Guides as they become available. G-Invoicing is intended to "improve the quality and reliability of IGT Buy/Sell data", so an emphasis is being placed on data extraction in common formats (e.g., CSV) for agency use.

2.3 Automated "Push" Services

G-Invoicing allows agency clients to upload data and attachments through automated "Push" services. These APIs allow agencies to automate uploading of new and updated documents (e.g., Order, Performance) for their trading partners to access. Attachment services allow agency clients to stream attachments to G-Invoicing to be associated with these documents. The *Push to G-Invoicing-System Interface Specification* (Push SIS) describes these services in detail, including business rules that will be enforced.

Both the Push and Pull services utilize XML to carry payloads and to format any request and response messages. XML schemas may be found on Treasury's Data Exchange Listing under G-Invoicing Downloads. Look in the Accounting file folder for the schemas. Supporting elements may be found in the Core file folder.

Sample XML payloads may be found on the G-Invoicing website for each XML schema supported. Examples of Push (and Pull) API requests may be found in the System Interface Specifications.

It is important to note that not all trading partners will be automated, and some agencies may choose to automate parts of their process (e.g., Orders, Advances through API) but not others (e.g., Performance reported via UI).

Another consideration is that agency User Administrators control the permissions and access by system users. Best practice is to grant update access to system or human users (not both) for the same document type. For example, if Orders are pushed through the API, human users should not be permitted to update Orders via the UI in G-Invoicing to ensure Agency systems remain in sync with G-Invoicing.

2.3.1 API Resources

- **Push Order** is an API which allows agency clients to contribute their respective portions of the Order documents. The requesting agency can initiate a request to the New Order resource. Once the servicing agency has pulled down a new Order from G-Invoicing, that agency client makes the next call to the Update Order resource. The remainder of the Order lifecycle is a series of Pull requests followed by Update Order requests until the requesting agency finally closes the Order. There are situations in the Order lifecycle where an agency request may be denied because it is not that agency's turn to act. Diagram 2 of the Push SIS shows the state transitions possible and Table 2 shows all possible types of Push Order requests. The System Mapping & Validation Rules document (SM&VR) shows data requirements for each state transition.
- **Push Performance** is an extension of the Push Order API which allows agency clients to report Performance (e.g., Delivered/Performed, Received/Accepted) against an Order. Unlike for Orders, the lifecycle for Performance transactions is simple. Each partner independently sends requests to the New Performance resource. The requesting agency reports Performance in response to the servicing agency's Performance. Adjustments are made by reporting negative Performance. Data requirements and validation rules for may be found directly in the Federal Intragovernmental Data Standards for Performance (Data Elements).
- **Push Attachment** is an API which allows agency clients to invoke the New Attachment resource or the Delete Attachment resource. Only the partner that added an attachment will be allowed to delete it. These two attachment resources work the same for Order and Performance attachments.

2.3.2 Timing

Documents and attachments are pushed individually to G-Invoicing. In other words, there is no mechanism to push "batches" of Orders or Performance. Further, the interface is synchronous such that the agency client must wait for a response from G-Invoicing, which will include the data needed to retrieve the document or attachment at a later time. G-Invoicing can support simultaneous requests.

It is up to the agency to determine how frequently and when to send updates to G-Invoicing. Agencies are encouraged to push updates throughout the day, as they occur. If batch processing is necessary (e.g., Orders for the day are imported from another system at close of business), agencies are encouraged to consult with G-Invoicing Support by opening a request through the Treasury Support Center (1-877-440-9476) before scheduling when to push tens, hundreds or thousands of documents to G-Invoicing.

2.4 Automated "Pull" Services

G-Invoicing allows agency clients to download data and attachments through automated "Pull" services. These APIs allow agencies to automatically download documents (e.g., GT&C, Order, Performance) that are new or have been updated by their own users or their trading partners. The Pull from G-Invoicing-System Interface Specification describes these services in detail.

2.4.1 Parameters

Agencies are encouraged to pull only documents that have changed since the last successful exchange. Other use cases are possible, depending on the Parameters (aka, filters) supplied in the request:

- *Agency Location Code* may be supplied in cases where the System ID has access to multiple ALCs.
- *Status* allows agency clients pull documents of a particular status (e.g., Open). This applies only to document types which support multiple statuses, such as GT&C and Order.
- *Last Modified Date Time* is used to pull recent changes and additions. It is up to the agency system to track the last successful date/time for each type of Pull request. Best practice is to pull changes that have occurred since the last successful exchange.
- *System ID* identifies the specific system that the interfacing Partner ID represents for the request. The Partner ID is certified to represent multiple agency systems. The *System ID* is used to limit data access and permissions. See G-Invoicing Technical Overview (above) for information on user authentication and authorization. See section on Use Cases below for ideas on a single point of integration.

2.4.2 Timing

It is up to the agency to decide how frequently to invoke Pull services. Choosing "odd" times (e.g., hourly at 37 minutes after the hour) and/or "off hours" (i.e., not mid-morning or mid-afternoon) may be the best choice to reduce contention, but is not required. All of G-Invoicing's APIs are synchronous, so if every agency decides to pull all their changes once a day at 2:00 pm ET, the wait times will be longer.

2.4.3 API Resources

Agency clients pull changes from G-Invoicing by invoking three API resources. Detailed descriptions and examples of all the API resources for pulling documents and attachments from G-Invoicing may be found in section 3 of the Pull from G-Invoicing-System Interface Specification. In summary, the following steps are taken:

1. **<Document Type> List** (e.g., GT&C List) returns a subset of data from the requested document type, qualified by access permissions and parameters. The initial request to G-Invoicing will return a list of GT&C's, Orders or Performance based on the API resource invoked and the user's permissions. The list returned in the response will contain metadata about each document as well as the link (URL) to request the individual documents in a subsequent request.
2. **Single <Document Type> by ID** allows agency clients to extract all non-empty data elements in the XML payload for a specific instance of a document (e.g., Order Number O1903-123-234-000345), identified by the URL found in the document list. The document returned will contain metadata about attachments (if any exist) associated with the document. This metadata contains links (URLs) for agency systems to pull individual attachments.
3. **Single Attachment by ID** allows agency clients to download a specific attachment, identified by the URL found in the document payload.

2.5 Use Cases

2.5.1 Integration Point(s)

An agency may have separate systems for procurement, fulfillment and/or financial management. Each of these systems may invoke G-Invoicing services separately through their own Partner IDs. It's also possible for all three of these systems communicate with G-Invoicing through a single channel (e.g., a service bus). See *Figure 2 Partner ID/System ID Relationship* above.

A Partner ID (and authenticating digital certificate) must be established for that single channel, with distinct System IDs representing each of the agency systems, in both the test and production environments. For this use case, the partnering client will send an API request to G-Invoicing within which they declare the System (ID) they are representing for that particular request. G-Invoicing will validate the Partner/System relationship and use the permissions granted to the System ID user.

All API resources used by clients to push/pull documents and attachments to/from G-Invoicing are equipped with a System ID parameter for this purpose. G-Invoicing Support personnel will help agencies establish a Partner ID and any System IDs under that partner, but it is up to the agency's User Administrator(s) to authorize the System users to perform the necessary functions and access the appropriate data.

Extending this concept, several agencies (operating in separate disburser accounts) may agree to create a single integration point to/from G-Invoicing. In this case the Partner ID will reside in a single disburser account and the System IDs can be spread across as many accounts as needed.

2.5.2 Act as Both Partners

Some servicing agencies maintain automated systems/portals which allow their customers to log in to order goods or services. General Services Administration (GSA) is an example of a servicing agency that possesses customer data from the requesting agency that could be used to generate Orders in G-Invoicing. It is possible for such a servicing agency to push new Orders to G-Invoicing on behalf of their customers, provided that:

- All required data is included in the API requests
- The requesting agency grants the required role(s) and data access group(s) to their servicing partner's system ID(s)
- The servicing agency is capable of pushing two separate API requests to G-Invoicing for new Orders:
    1. create Order (on behalf of requesting agency)
    2. approve Order (as the servicing agency)

The servicing agency would also be permitted to send requests to close or modify Orders. Alternatively, the requesting agency may grant permission for their own people to close Orders once they have been reviewed and reconciled. Note: There is no separate role for closing Orders, so that task could not exclusively be limited to representatives from the requesting agency in this case.

Your agency's representative from the G-Invoicing Agency Implementation Team (AIT) can work with you and your trading partners to set up the user access permissions needed to support this business scenario. Please refer to the G-Invoicing Playbook (on the G-Invoicing website) if your agency has not yet been assigned an AIT representative.

2.5.3 Summarizing Data

It's possible that servicing agencies with their own systems or portals may be collecting very detailed Order information from their customers. GSA, for example, may possess an Order for office supplies containing many line items that all reference the same line of accounting. GSA's provides their customers access to this detail data through their portal. Once the supplies have been delivered, G-Invoicing does not need all this detail data to settle this transaction. The various line item amounts may be summarized onto a single line item for the G-Invoicing Order bearing the description "office supplies" (for example). The details may remain in the servicing agency's system or made available through an Order attachment sent to G-Invoicing. Once the servicing agency reports Delivered/Performed against the Order, the requesting agency may (2-way) match the Delivered/Performed to the Order and either close the Order or report Received/Accepted to dispute the reported Delivered/Performed.

2.5.4 Mixing Automated and Manual Interfaces

G-Invoicing allows User Administrators to control access to all agency users, whether it be system(s) or humans. As previously mentioned, assigning the same (update) roles and data access groups (DAGs) to human and system users is strongly discouraged. (Assigning view-only roles to both human and system users is perfectly safe).

Agencies may decide to mix and match roles/DAGs by business line. For example, the creation of Orders may be automated for several business lines (whereby Partner and System IDs are established for full automation), but a smaller business line may want users to maintain their Orders directly in G-Invoicing through the user interface. To support this use case the business lines must be separated by Organizational Reference Data.

Within an Agency Location Code (ALC), G-Invoicing allows Organizational Administrators to establish Organizational Reference Data to distinguish one business line from another. (Separation by other dividers such as geographical, etc. is handled in exactly the same way). See the Disburser Administration User Guide or Intragovernmental Disburser Module User Guide for further details on how to set up Organizational Reference Data.

This same logic can be applied by any agency to distinguish one business line, geographical territory or other segment from another. Data access groups (DAGs) may be established to represent each organizational unit. Human users may be assigned to some DAGs and system users to others.

A representative from the G-Invoicing Agency Implementation Team (AIT) can help you devise the appropriate strategy to mix human and system users. Please refer to the G-Invoicing Playbook (on the G-Invoicing website) if your agency has not yet been assigned an AIT representative.

2.5.5 Download Documents by Status

Previously it was recommended that agency systems pull only documents and attachments which are new or have changed since a particular date/time. This method is recommended because it keeps communications to a minimum. Other options are possible, however.

An agency client could choose to pull a list of documents by a specific status on a regular basis. For example, a servicing agency could pull Orders that are in SSA (submitted to servicing agency) status each evening, followed by a call to pull only Orders in REC (open) status. That agency could compare those two lists to what they have on file, making updates as needed. If a known Order falls off both of these lists, it can be assumed that no further action is required for that Order. If a new Order appears on the SSA list, the agency client may then pull the entire Order.

An agency client could choose to pull a list of all documents of a specific type (e.g., GT&C), although this is not recommended. That list will contain all GT&C agreements for that agency, regardless of status. That means that closed GT&Cs will be on the list, no matter how old they are. Obviously, such a list can grow very large, depending on the age of the system and the number of documents handled annually.

Agencies may choose to pull Performance transactions by Settlement Status in order to skip intermediate steps (e.g., pending settlement). The critical Settlement Statuses are INF (informational only, which may be used as a basis for accruals) and STL (settled, meaning that funds have transferred).

2.5.6 **Information on Demand**

Data retention policies have not yet been established, but G-Invoicing will not delete data or attachments until such policies are defined and reviewed by their customer base. Agencies may choose to rely on G-Invoicing to store complete document data and attachments so they can be accessed only when needed. For example:

- Metadata describing the existence of an attachment (e.g., file name, size, type, URL) can be saved in an agency system so that a specific attachment can be retrieved by an agency user on demand.
- Data describing the existence of a GT&C agreement (e.g., GT&C number, title, status, URL) can be saved in an agency system so a user of that system may select a valid GT&C from a drop-down list or search facility. If that agency user wishes to view the full GT&C, it can be retrieved from G-Invoicing by the agency system at that time.

Relying on G-Invoicing to store complete document data and attachments will reduce an agency's data and file storage requirements, but may greatly increase system-to-system communications with G-Invoicing if that information is repeatedly requested. Agencies (and their vendors) are encouraged to use their best judgement when designing a solution.

Appendix A: Resources

Topic	Address
Additional Information on G-Invoicing	https://www.fiscal.treasury.gov/g-invoice/
Treasury Financial Manual	https://www.fiscal.treasury.gov/g-invoice/resources.html#tfman
System Interface Specifications	https://www.fiscal.treasury.gov/g-invoice/resources.html#interface
Federal Intragovernmental Data Standards / Data Elements	https://www.fiscal.treasury.gov/g-invoice/resources.html#standards
System Mapping and Validation Rules	https://www.fiscal.treasury.gov/g-invoice/resources.html#mapping
Trading Partner Directory	https://community.max.gov/x/szd0ZQ
Agency Implementation Plan/Template	https://www.fiscal.treasury.gov/g-invoice/training.html
User Guides	https://www.fiscal.treasury.gov/g-invoice/training.html
Frequently Asked Questions	https://www.fiscal.treasury.gov/g-invoice/faqs.html
G-Invoicing Playbook	https://www.fiscal.treasury.gov/g-invoice/

Appendix B: Glossary

Agency Implementation Team (AIT) – is a Program resource assigned to your Agency to assist in planning, training and on-boarding activities necessary to implement G-Invoicing.

ALC (Agency Location Code) – identifies a virtual or physical location of a Federal agency

API (Application Program Interface) – is a web service which allows agency clients to push/pull data to/from G-Invoicing

Backwards Compatible – the practice of introducing a new version of software (e.g., API) that is interoperable with older versions

Certificate – see Digital Certificate

Client – is an authorized system user that initiates a call to one of G-Invoicing's API services

CSV (Comma Separated Value) – is a data format commonly used as input to spreadsheet applications

DAG (Data Access Group) – maintained by agency Organizational Administrators and assigned to users by agency User Administrators to control which documents each user has access to

Digital Certificate – is an electronic "passport" that allows an agency system to exchange information securely over the Internet using the public key infrastructure (PKI)

Disburser Account – a logical segmentation of G-Invoicing representing an agency organization that is configured and administered together

FPA (Federal Program Agency) – is a government organization that uses G-Invoicing to report IGT activities

IGT (Intragovernmental Transactions) – describes the buying/selling of goods/services between agencies

LDAP (Lightweight Directory Access Protocol) – is used to house access information

Organizational Filter – describes the use of ALC and Organizational Reference Data to control document access

Organizational Reference Data – describes the use of 1-3 agency-defined fields (i.e., cost center, business unit and department identifier) to segment their data below the ALC

Partner ID – a user set up by G-Invoicing (with a digital certificate) under which System IDs are established

Push Service – an API used by agency clients to upload permitted data into G-Invoicing

Pull Service – an API used by agency clients to extract permitted data from G-Invoicing

Requesting Agency – a trading partner acting as the "buyer" in an IGT Buy/Sell relationship

Service – see API

Servicing Agency – a trading partner acting as the "seller" in an IGT Buy/Sell relationship

SIS (System Interface Specification) – is a detailed document describing a system-to-system interface

SSL (Secure Sockets Layer) – provides security and data integrity for communications over the Internet

Synchronous – meaning that that client code execution will wait for a response from the API before continuing

System ID – a user set up by G-Invoicing (subordinate to a Partner ID) and authorized by an agency User Administrator to exchange data with G-Invoicing

Trading Partner – an agency that buys goods/services from or sells goods/services to another federal agency

TWAI (Treasury Web Application Infrastructure) – is the environment in which the G-Invoicing application runs

UI (User Interface) – is a web-based application hosted on the TWAI for authorized user to access G-Invoicing

URL (Uniform Resource Locator) – is a Web address

User – in this context is a human who has been authorized to access the G-Invoicing user interface, unless specified (e.g., system user)

Web Service – see API

XML (eXtensible Markup Language) – is a self-describing format of data

Appendix C: Revision History

Ver.	Author	Revised	Description
1.0	W. Schmidt	5/13/19	Published version 1.0 to G-Invoicing website