System Interface Specifications Push JSON

A guide to transmit, insert and process Orders, Performance and 7600EZ in G-Invoicing using JSON

Orders, Performance and 7600EZ
Version 1.3
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Table of Contents

1 Introduction

1.1 Purpose

This artifact defines the interface specification to define the transmission of Order, Performance and 7600EZ data from Federal Program Agency systems to the G-Invoicing application. 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 transmit, insert, and process IGT Buy/Sell Order, Performance and 7600EZ 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 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 <u>future</u> enhancements and releases of this specification can be made available upon request.

1.3.1 The Federal Intragovernmental Data Standards (FIDS): Orders, 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 Orders, 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 for Performance and 7600EZ data elements because transactions have only two resources available to agencies through the API: Create and Delete. Subsequently, the validation rules are relatively simple and appear in the corresponding FIDS.

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 Order, Performance and 7600EZ data and associated attachments inbound from agencies with interfacing systems to G-Invoicing.

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 and the Department of the Treasury Bureau of the Fiscal Service. Similar operating agreements may be made with other agencies as needed.

2. Messages will be sent over the internet utilizing the HTTPS protocol.

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 Protocols

The G-Invoicing to agency system interface will employ a push/pull model utilizing RESTful Services with a JSON 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

3.2.2 Base Path: /ginv

3.2.3 Resource: /services

3.2.4 Common Headers

Component	Detail / Description
	Name: SystemID Description: Identifies the system that is exchanging data with G-Invoicing. Paths: order, performance and ez In: header Type: string [100] Required: true
	Name: Accept Description: Indicates the service client expects content in JSON format. Value: application/json Required: true
	Name: Agency-Tracking-Identifier Description: Unique identifier from agency system, optionally supplied in the request. Paths: order, performance and ez In: header Type: string [50] Required: false

Headers	Name: Accept-Encoding Description: Allows the service client to indicate it supports compressing the response payload using gzip compression. Value: gzip, deflate Required: false Highly suggested: If not supplied, server will send back uncompressed response data resulting in a larger payload.
	Name: Transfer-Encoding Description: The type of transformation that has been applied to the message body to safely transfer it between the sender and the recipient. Value: chunked Required: false
	Name: Connection Description: Indicates the service client wants to use HTTP keep-alive to make multiple requests more efficiently. Value: keep-alive Required: false Highly suggested when making multiple calls. Failure to use keepalives will slow concurrent calls and strain both the client and server.

3.2.4 Resource: Create new document

Component	Detail / Description
Paths	/ginv/services/v3_0/order /ginv/services/v3_0/order/performance /ginv/services/v1_0/ez
Method	POST
Description	Creates a new document in G-Invoicing
Consumes	Required: application/json Document Body: Order, Performance or 7600EZ
Produces	Status Code: 200 Description: Successful call returns Call Detail and the newly created document. Content Type: application/json Document Response: Call Detail: Order, Performance or 7600EZ

3.2.5 Resource: Update Order

Component	Detail / Description
Path	/ginv/services/v3_0/order/<id>
Method	PUT
Description	Updates an existing Order referenced by the passed unique identifier <id>.

Parameter	Name: id Description: A Unique ID referencing an individual Order. In: path (required) Type: string [20] Required: true
Consumes	Required: application/json Document Body: Order
Produces	Status Code: 200 Description: Successful call returns Call Detail and the newly updated Order data. Content Type: application/json Document Request: Call Detail, Order

3.2.6   Resource: Delete Performance/7600EZ

Component	Detail / Description
Paths	/ginv/services/v3_0/order/performance/<id> /ginv/services/v1_0/ez/<id>
Method	DELETE
Description	Deletes a Performance or 7600EZ transaction from G-Invoicing. *Note: Only possible if Performance Date is in the future (Status = Pending)*
Parameter	Name: id Description: A Unique ID referencing a Performance or 7600EZ Number. In: path (required) Type: string [20] Required: true
Consumes	*No input is necessary aside from the DELETE request*
Produces	Status Code: 200 Description: Successful call returns Call Detail data. Content Type: application/json Document Response: Call Detail, Performance or 7600EZ

3.2.7   Resource: New Attachment

Component	Detail / Description
Paths	/ginv/services/v3_0/order/attachment /ginv/services/v3_0/order/performance/attachment /ginv/services/v1_0/ez/attachment
Method	POST

Description	Add a new attachment to a document.
Example	See example in Open API document
Parameter	Name: Content-Type Description: The MIME type of the body of the request Value: multipart/form-data Required: true References: RFC 7578
Consumes	Required: application/json, application/octet-stream Schema: Attachment Push
Produces	Status Code: 200 Description: Successful call returns Call Detail and the Attachment Response data. Content Type: application/json Document Response: Call Detail, Attachment Response

3.2.8   Resource: Delete Attachment

Component	Detail / Description
Paths	/ginv/services/v3_0/order/attachment/<id> /ginv/services/v3_0/order/performance/attachment/<id> /ginv/services/v1_0/ez/attachment/<id>
Method	DELETE
Description	Deletes an Attachment from the System.
Parameter	Name: id Description: A Unique ID referencing an individual Attachment. In: path (required) Type: string [30] Required: true
Consumes	Required: application/json Schema: Attachment Push
Produces	Status Code: 200 Description: Successful call returns Call Detail data. Content Type: application/json Document Response: Call Detail

3.3 Supported Environments

The G-Invoicing application operates within the Treasury Web Application Infrastructure (TWAI) 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 External Environments

G-Invoicing TWAI	Use
Quality Assurance - Future (QA-F)	Future view of Production (new release) – used for UAT & interface testing
Quality Assurance - Current (QA-C)	Current view of Production environment – used for agency & vendor testing.
Production	Production

4 Interface Specification

4.4 Processing Logic

4.4.1 Orders

An **Order** consists of three parts: **Header**, **Line(s)** and **Schedule(s)**. While some data elements at the Order Header level are common, most are split between the Requesting and Servicing agencies. The logical data model below shows this division, and the Order FIDS shows the level of each data element (i.e., header/line/schedule) and which partner provides each element (depending on the partner that originated the Order).

Each Order must contain at least one Line, and each Line must contain at least one Schedule. There are no limits to how many Lines and Schedules are allowed, but once the Order is shared between partners, Lines and Schedules cannot be physically deleted (only cancelled). The trading partner that originates the Order supplies most of the Order Line data. That partner also controls the Quantity and Price on each Schedule. There are many other data elements broken out by requesting or servicing agency at the Schedule level.

Diagram 1: Orders Logical Data Model
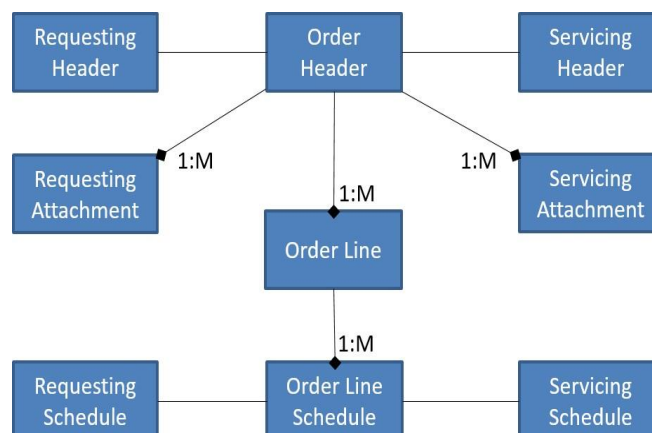
Diagram 2: Standard Order API States (Does not represent Bidirectional Modification)

Order API State Diagram
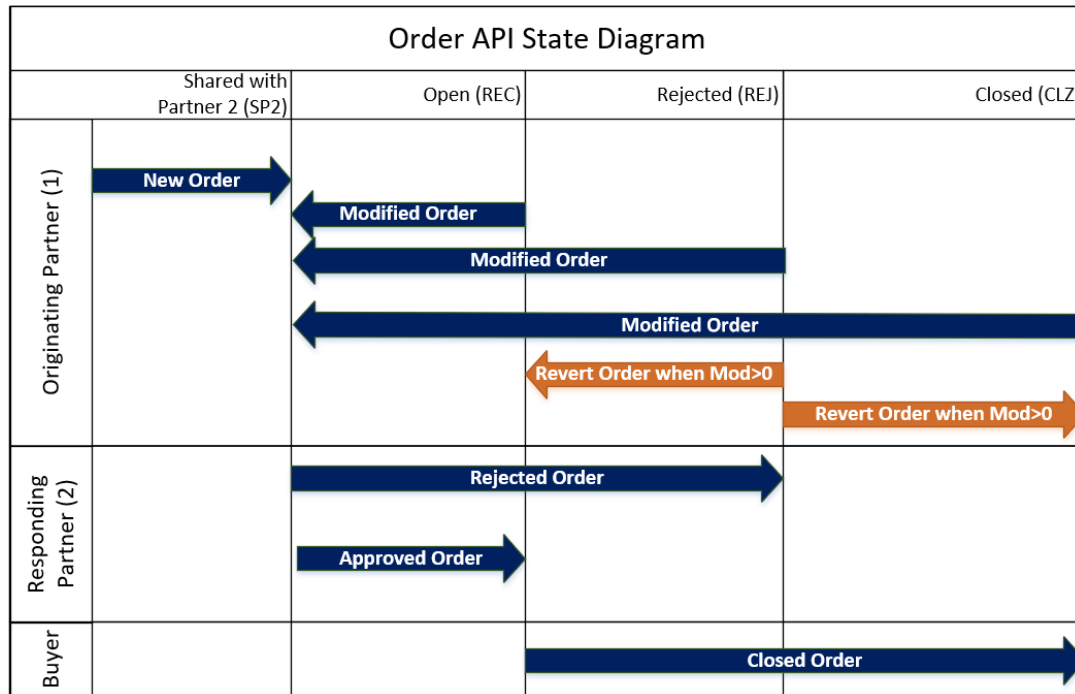
Note: The G-Invoicing processing states are represented by vertical lines just to the right of the name of each state; although, there are seven possible states for an Order, only five are supported by the API: Shared with Partner 2 (SP2), Open (REC), Rejected (REJ), Closed (CLZ) and Revert (REV).

Note: The Revert (REV) action relies on the feature being enabled by both trading partner's accounts. This can be completed by the account's Master Admin(s). The Originating Partner may Revert (REV) an Order in Rejected (REJ) state by passing a (REV) status to a specific Order Number using a PUT method.

The G-Invoicing workflow determines which actions may be executed on an Order based on its status (aka, state).

Either trading partner may originate an Order depending on conditions established on the GT&C. The originating agency system is known as Partner 1 in this document. The other agency system responds to the Order and is known as Partner 2. This Partner 1-2 relationship remains constant for the life of the Order, and any other Order under the same GT&C agreement.

Table 2: Standard Order Processing (below) summarizes the different types of requests G-Invoicing will accept as an Order moves through its lifecycle. Agency system actions are controlled by conditions set on the GT&C, the current state of the Order, the proposed new state, the requested method, and the permissions granted to the agency system.

Table 2: Standard Order Processing (Does not represent Bidirectional Modification)

Requested By	Type of Request	Method	Current State	New State	Data Validation Rules
Partner 1	New Order	POST	N/A	Shared with Partner 2	• All required Partner 1 data in request (see SM&VR) • Partner 2 (only) data in request will be ignored
Partner 2	Approved Order	PUT	Shared with Partner 2	Open	• All required Partner 2 data in request (see SM&VR) • Partner 1 (only) data in request will be ignored
Partner 2	Rejected Order	PUT	Shared with Partner 2	Rejected	• Required data for rejection in request (see SM&VR) • All other Partner 2 data in request will be ignored • Partner 1 data not in request
Partner 1	Standard Modified Order	PUT	Open, Rejected or Closed	Shared with Partner 2	• All required Partner 1 data in request (see SM&VR) • Changes detected to Partner 1 data elements • Partner 2 (only) data in request will be ignored
Partner 1	Revert Order	PUT	Rejected	Open or Closed	• Required data for revert in request (see SM&VR) • All other Partner data in request will be ignored • Both trading partners must have feature enabled
Requesting Agency	Closed Order	PUT	Open	Closed	• Required data for closure in request (see SM&VR) • All other Buyer data in request will be ignored • All Seller data in request will be ignored
Requesting Agency	Requesting Admin Changes	PUT	Open	Open	• All required Buyer data in request (see SM&VR) • Administrative changes detected to Buyer data • Only data elements Provided By 'Requesting' (BIO or SFO, depending on the situation) with How to Update 'Admin Change' in FIDS may be altered
Servicing Agency	Servicing Admin Changes	PUT	Open	Open	• All required Seller data in request (see SM&VR) • Administrative changes detected to Seller data • Only data elements Provided By 'Servicing' (BIO or SFO, depending on the situation) with How to Update 'Admin Change' in FIDS may be altered

Note: Specific data element and state validations may be found in the System Mapping and Data Validation Rules (SM&VR) document referenced in section 1.3.

The last two rows in Table 2 allow agencies to make Administrative Changes to Orders involving data elements that do not require review and approval from either partner. These changes are audited and will be included in subsequent Pull requests for changes.

Table 3: Order Processing (with Bidirectional Modification)

See Modification Status (Mod Status) table for Order States indicated as "Modified" in the below table.

Requested By	Type of Request	Method	Current State	New State	Data Validation Rules
Partner 1	New Order	POST	N/A	Shared with Partner 2	• All required Partner 1 data in request (see SM&VR) • Partner 2 (only) data in request will be ignored
Partner 2	Approved Order	PUT	Shared with Partner 2	Open	• All required Partner 2 data in request (see SM&VR) • Partner 1 (only) data in request will be ignored
Partner 2	Rejected Order	PUT	Shared with Partner 2	Rejected	• Required data for rejection in request (see SM&VR) • All other Partner 2 data in request will be ignored • Partner 1 data not in request
Partner 1	Standard Modified Order	PUT	Open, Rejected or Closed	Shared with Partner 2	• All required Partner 1 data in request (see SM&VR) • Changes detected to Partner 1 data elements • Partner 2 (only) data in request will be ignored
Partner 2	Bidirectional Modified Order	PUT	Open, Rejected or Closed	Modified	• Required data for Partner 2 in request (see SM&VR) • Partner 1 (only) data in request will be ignored • Both trading partners must have feature enabled
Partner 1	Bidirectional Modified Order	PUT	Modified	Open	• Required data for Partner 1 in request (see SM&VR) • Partner 2 (only) data in request will be ignored • Partner 1 may submit without feature enabled to move Order out of Modified state
Partner 1	Bidirectional Modified Order	PUT	Modified	Modified	• Required data for Partner 1 in request (see SM&VR) • All other Partner 2 data in request will be ignored • Partner 1 may submit without feature enabled to continue to move Order out of Modified state
Partner 2	Bidirectional Modified Order	PUT	Modified	Modified	• Required data for Partner 2 in request (see SM&VR) • Partner 1 (only) data in request will be ignored • Partner 2 may submit without feature enabled to continue to move Order out of Modified state
Partner 1	Revert Order	PUT	Rejected	Open or Closed	• Required data for revert in request (see SM&VR) • All other Partner data in request will be ignored • Both trading partners must have feature enabled
Requesting Agency	Closed Order	PUT	Open	Closed	• Required data for closure in request (see SM&VR) • All other Buyer data in request will be ignored • All Seller data in request will be ignored
Requesting Agency	Requesting Admin Changes	PUT	Open	Open	• All required Buyer data in request (see SM&VR) • Administrative changes detected to Buyer data • Only data elements Provided By 'Requesting' (BIO or SFO, depending on the situation) with How to Update 'Admin Change' in FIDS may be altered
Servicing Agency	Servicing Admin Changes	PUT	Open	Open	• All required Seller data in request (see SM&VR) • Administrative changes detected to Seller data • Only data elements Provided By 'Servicing' (BIO or SFO, depending on the situation) with How to Update 'Admin Change' in FIDS may be altered

Bidirectional Order Modification

Prerequisite: Both Partner 1 and 2 must have the feature enabled to utilize Bidirectional Order Modification at an account level. Bidirectional Order Modification is not a Bizapp that is determined on a GT&C, so it may be utilized on any Order within the account without having to specify access at the document level.

- Only Partner 2 based on the specific Order's Order Originator Partner Identifier (OOPI) may initiate a Bidirectional Order Modification.
  - OOPI=Requesting then the Servicing agency may initiate a modification using this feature.
  - OOPI=Servicing then the Requesting agency may initiate a modification using this feature.

The Order will use a new Modified (MOD) state to handle state changes while in the Bidirectional modification flows (see Order state diagrams below). Once an Order is in the MOD state G-Invoicing will allow the Order to proceed through approvals and rejections until it's in an Open (REC) state, even if either account determines to not allow new Orders to enter the MOD state by turning off the feature.

G-Invoicing will return the Modification Originator (MO) & Order Modification Status (Mod Status) in the response when an Order is within the Modified (MOD) state. This will be used to determine where the Order Modification is in within G-Invoicing and should be used within any consuming system to determine the Order's modification state.

- MO - Indicates which agency initiated the Order modification, fields are either Requesting (R) or Servicing (S).
- Mod Status - Indicates the progress through the Modified state, where the Order modification is currently within the modification process. The combination of the two fields is used to indicate which state the Order modification may enter next.

Once an Order is in the Modified (MOD) state it must continue to progress within the Modified state until it is either reverted (back to its original Open or Closed state) or Open.

As with the standard Order processing there are additional UI states that are supported within G-Invoicing that aren't states the API will utilize, this is the same for Bidirectional Order Modification.

Table 4: Mod Statuses

Requesting Agency Statuses			
Mod Status Name	**Mod Status Code**	**UI Status Name**	**API and/or UI Mod Status**
Requesting Update (MO=R)	RU	Draft	UI Only
Requesting Approval	RA	Pending Requesting Approval	UI Only
Shared with Requesting (MO=S)	SR	Shared with Requesting	API & UI
Rejected by Requesting	RR	Rejected	API & UI

Servicing Agency Statuses			
Mod Status Name	**Mod Status Code**	**UI Status Name**	**API and/or UI Mod Status**
Servicing Update (MO=S)	SU	Draft	UI Only
Servicing Approval	SA	Pending Servicing Approval	UI Only
Shared with Servicing (MO=S)	SS	Shared with Servicing	API & UI
Rejected by Servicing	RS	Rejected	API & UI

Diagram 3: Bidirectional Order State Diagram: Seller Facilitated Order (SFO)
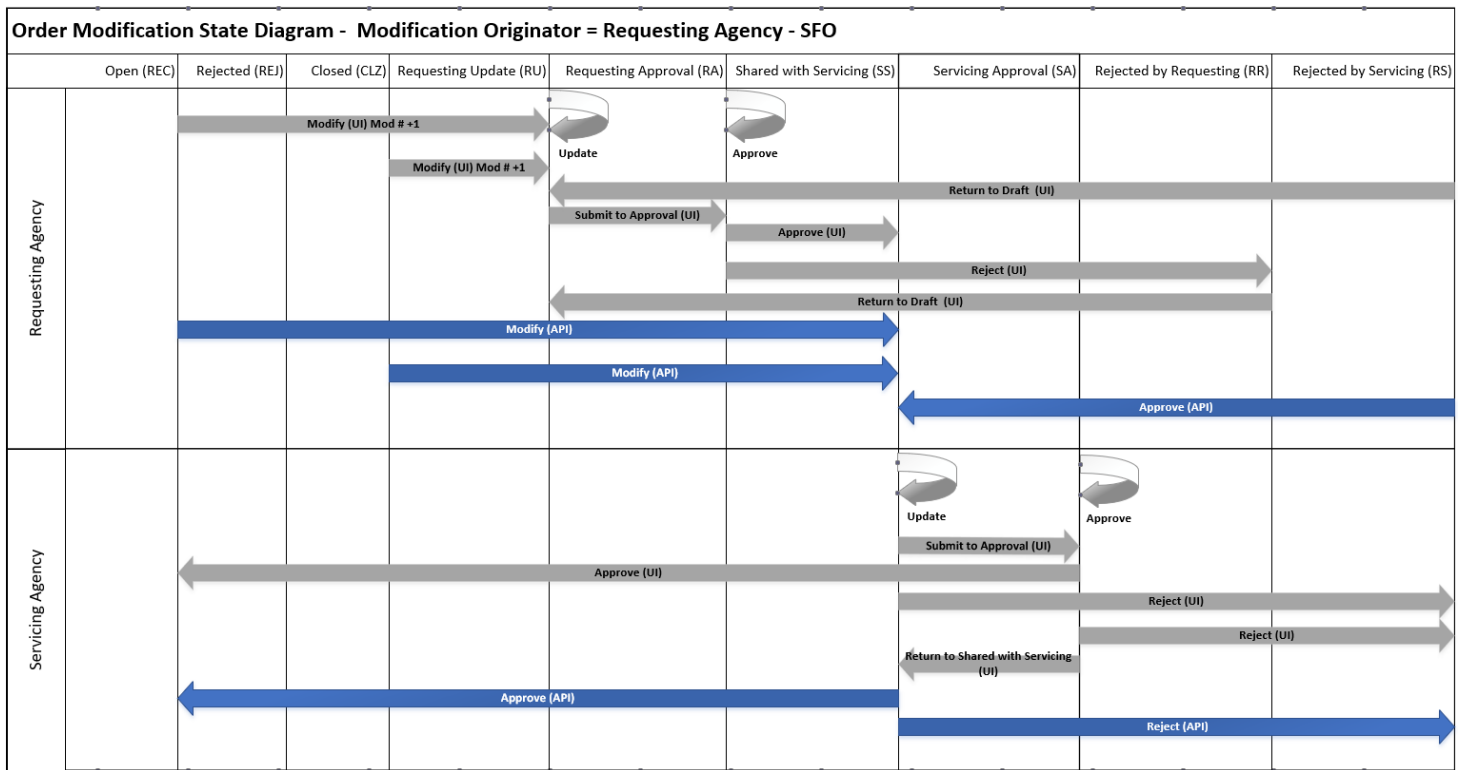
Diagram 4: Bidirectional Order State Diagram: Buyer Initiated Order (BIO)
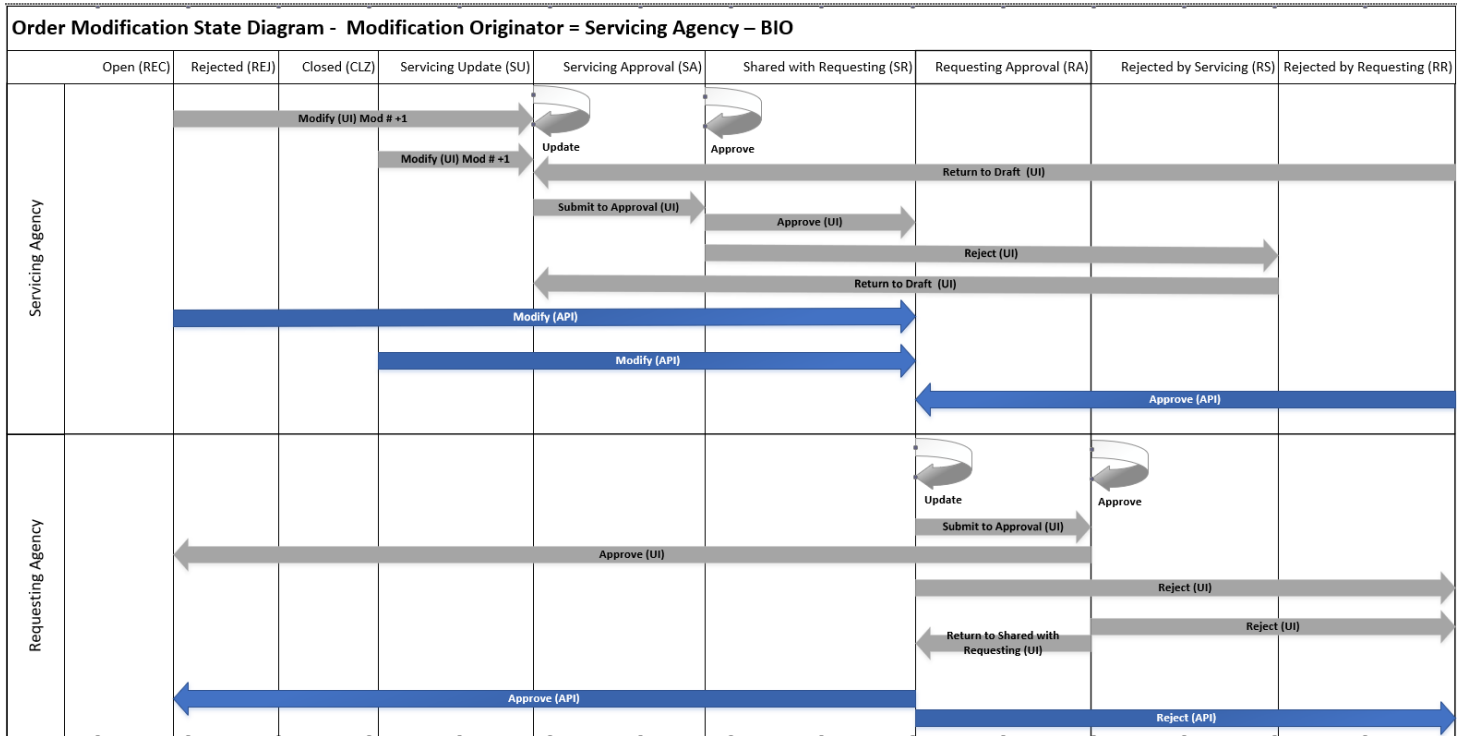
4.4.2 Performance

Performance transactions do not follow a prescribed workflow. They cannot be approved or changed. There are validation rules (described below in Business Rules and in the Federal Intragovernmental Data Standards), but the only options are to post a new Performance transaction, related to a specific Order, Line and Schedule or to delete a future Performance transaction.

Negative numbers are allowed for the Quantity for most Performance Types, so errant transactions may be fully or partially negated. For example, the servicing agency may have recorded Delivered/Performed 20 units but later realized it was only 15. The agency would submit a performance detail of -5 units, referencing the original 20, which nets down to 15.

Performance Transaction consists of two parts: **Performance Header** and **Performance Detail**(s). The header identifies the type of performance (e.g., Received/Accepted) and must reference a single Order. Each detail record within that header must reference a single Schedule on the same Order. Two details may not reference the same Schedule. Multiple performance transactions may be submitted against a single Order (e.g., delivered 40 now, 20 later).
Each positive Received/Accepted detail record submitted by the requesting agency must reference a (positive) Delivered/Performed detail record previously submitted by the servicing agency. Multiple performance details may reference the same performance detail record (e.g., received/accepted 25 now, 15 later).

Diagram 5: Performance Logical Data Model
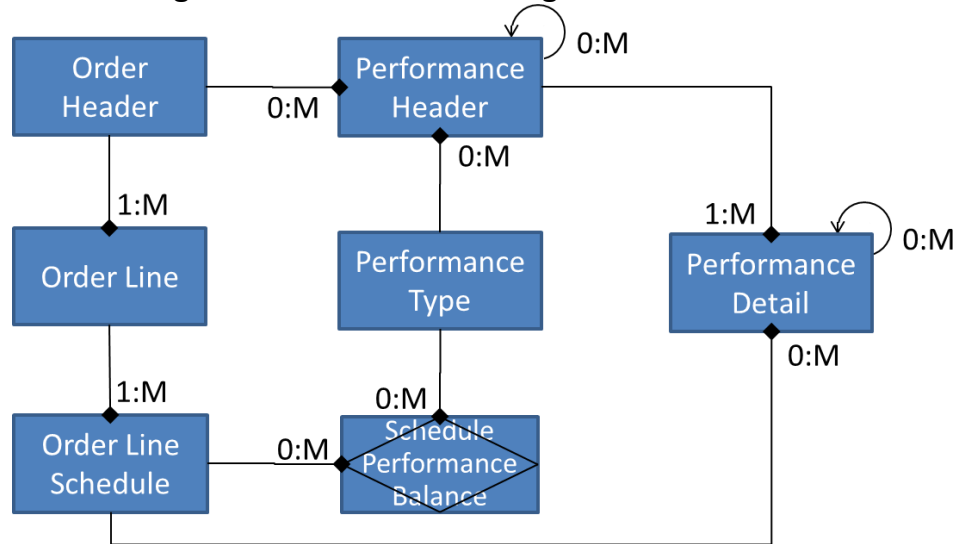
In essence, the servicing agency performs against the Order/Line/Schedule and the requesting agency responds to the servicing agency's performance with their perspective (e.g., we received/accepted the delivery in full). Performance detail records from the requesting agency containing zero (0) for quantity are acceptable, signifying that no performance of that type has been recorded (e.g., requesting agency has not yet received/accepted a delivery).

4.4.3 7600EZ

It is assumed that Partner 1 is the Servicing Agency for 7600EZ, and Partner 2 is the Requesting Agency. The Servicing Agency can create a new 7600EZ Invoice or reference an existing 7600EZ Invoice to reverse or delete. The Requesting Agency can respond with an Accept or Reject transaction, referencing the Servicing Agency's Invoice, but no action by the Requesting Agency is required. The Requesting Agency can also delete an Accept or Reject transaction in certain circumstances. There are validation rules described below in Business Rules (Section 4.5) and in the Federal Intragovernmental Data Standards (FIDS) that outline the requirements for creating a new 7600EZ Invoice and approving, and rejecting, reversing, or deleting an 7600EZ invoice.

Two types of 7600EZ transactions can be submitted by Partner 1: Invoice (011) and Reversed (324), which both transfer funds. Partner 2 can also submit two types of 7600EZ transactions: Accepted (201) and Rejected (598). Rejected (598) transactions will transfer funds (back) if submitted before the expiration of the Rejection Days of the referenced 7600EZ transaction. If the Rejected (598) transaction is submitted after the expiration of the Rejection window, then the Rejected (598) will be Informational (i.e., INF status) and won't transfer funds. All Accepted (201) transactions are Informational and won't affect funds transfer.

Diagram 6: 7600EZ Logical Data Model
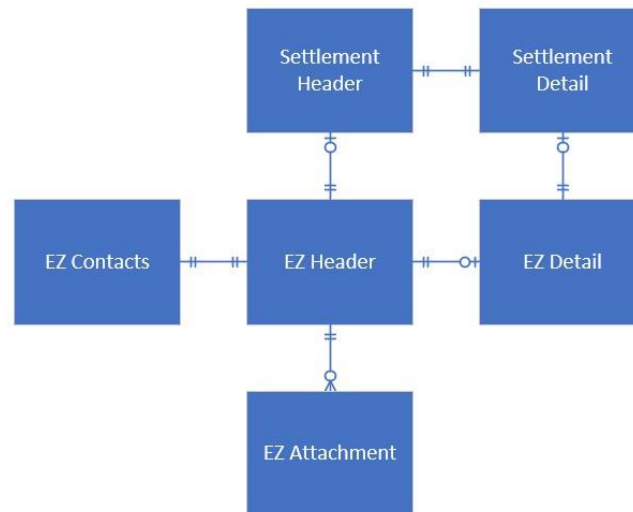
4.5 Business Rules

4.5.1 Common Rules

4.5.1.1   The agency system must be granted permissions (aka, user role) to transmit the type of data being submitted for processing with G-Invoicing.

4.5.1.2   G-Invoicing uses both date and time when validating and persisting data through the application program interface (API) & user interface (UI). Through the API we allow the agency system to send a specific time with their body request. G-Invoicing does honor daylight savings time. So, if a date is transmitted within that period additional logic may need to be coded to follow daylight savings time logic when handling time zone offsets.

4.5.1.3   The Servicing Agencies are not allowed to change the data elements belonging to the Requesting agency and vice versa. Submission of partner's data is typically ignored and sometimes not allowed.

4.5.1.4   Attachments may be added to, and deleted from, existing records using the Attachment service.

4.5.1.5   For the add Attachment requests, the attachment 'FileNm' in the JSON payload must match exactly.

4.5.1.6   An attachment may only be deleted by the trading partner that added the attachment.

4.5.2 Order Rules

4.5.2.1   For any Order updates (e.g., new, reject, modify, close), the GT&C referenced by the Order must be in "open for orders" status**.**

4.5.2.2   For new Orders, the agency system presenting the Order must have Requesting Order Manager or Servicing Order Manager access as required by the Order Originating Partner Indicator (OOPI) on the GT&C agreement.

4.5.2.3   The agency system must be provisioned for the Group to which the Order is assigned.

4.5.2.4   Every change made to an Order will force a new Business Transaction Identifier (BTI) to be assigned to that record. The BTI is returned for all Pull and Push Order requests.

4.5.2.5   When calling the Update Order resource, agency systems must return the BTI in the JSON payload, thus ensuring they are updating the most recent version of the Order record.

4.5.2.6   An out of sequence or invalid BTI will result in error code 400 ("The transaction ID for this order does not match the latest version. Please request the latest version before updating").

4.5.2.7   Order requests may only be submitted with a Document Status Code of SP2 – Shared with Partner 2, REC – Open, REJ – Rejected, REV – Revert or CLZ – Closed. Requests submitted with a Document Status Code other than those listed here will result in an error.

4.5.2.8   For close Order requests:

- Only the requesting agency may close an Order.

- The Requesting agency must send only those data identified as required in the SM&VR document. All other data will be ignored. (G-Invoicing business rules prevent updating and closing an Order simultaneously).

- The net sum of certain Performance details recorded against each Schedule in the Order by the Servicing agency and sometimes by the Requesting agency must be equal. Specifically:

    - Advanced quantity (including future advances) must equal the quantity Delivered/Performed if the Schedule is Advanced.

    - Total quantity Delivered/Performed against a Schedule must equal the total quantity Received/Accepted, if (a) FOB Point is 'Destination' or 'Other' and (b) the Schedule is not Advanced.

    - Total quantity Delivered/Performed against a Schedule must equal the total quantity Received/Accepted if the quantity Received/Accepted is provided. *Note: Received/Accepted is not required when FOB Point is 'Source'.*

4.5.2.9   Orders having Performance in 'PND' (pending settlement) status cannot be closed (until the Performance has settled).

4.5.2.10   Each Schedule within the Order must be concluded in at least one of the following ways:

- Unpaid quantity is zero, meaning that the Schedule was fully performed (and paid), or that the Schedule Quantity has been modified down to the amount that was performed (and paid).

- The most recently reported Performance of Type '035' (Delivered/ Performed), be it positive or negative (aka, adjustment) has a Final Performance Indicator of 'F' (final), meaning that the servicing agency considers the Schedule fully performed.

- Schedule has been Cancelled.

4.5.2.11   For Rejected Order requests, Partner 2 (i.e., the agency that did not originate the Order) must send only those data identified as required in the SM&VR document. All other data will be ignored. (Business rules prevent the modification and rejection of an Order simultaneously).

4.5.2.12   There are required elements that may be sent by both the Requesting and Servicing agencies, and they will be validated by the System (e.g., Line Number, Schedule Number, Order Number). In some cases, the trading partner that originated the Order can propose a value, but then "partner 2" takes over maintenance (e.g., Group Name).

- When changes to data elements violate validation rules, the request will be result in an error. (See SM&VR document for details).

4.5.2.13   Agency Systems are limited to the state changes described in Table 2 (Order Processing). Requests outside of those described in Table 2 will be rejected.

4.5.2.14   During a Modification, the originating partner (aka, Partner 1) may logically delete Order Line items and Schedules using the appropriate codes (e.g., A-Active, C- Cancelled) for Order Line Status and Order Schedule Status.

- All lines and schedules must be pushed for an Order, even those that have been logically deleted. (See SM&VR for line and schedule requirements).

- Physical deletion of lines or schedules is not permitted. Requests submitted with missing lines or schedules will be rejected.

- Missing lines or schedules will result in error code 400 – "The lines and schedules provided for this order do not match existing data. Please send all lines and schedules for this order."

4.5.2.15   Values of certain "administrative" data may be changed without going through the Modification process (which involves re-approval of the Order). Administrative Changes allow Order Managers to update points of contact and other administrative data while the Order remains in Open status, and without need for re-approval.

4.5.2.16   The Order FIDS shows the subset of administrative data that may be changed by each partner agency without approval by either partner. Filter the "How to Update" column for 'Admin Change'.

4.5.2.17   Any attempt to Administratively Change the value of a data element not marked for 'Admin Change' will be ignored. In other words, G-Invoicing will only examine candidates for Admin Change.

4.5.2.18   Administrative Changes are only allowed when the Order is in Open status.

4.5.2.19   Any attempt to Administratively Change values of data elements on a Schedule against which Performance has been reported will result in an error.

4.5.2.20   The client must be assigned the Order Manager role to make Administrative Changes to their agency's data.

- Any attempt to make Administrative Changes with neither the Requesting nor Servicing Order Manager roles will result in an error.

- Any attempt to Administratively Change their trading partner's data without proper permissions will be ignored (not resulting in an error).

- System users possessing both Requesting and Servicing agency permissions must submit both sides of the Order, so G-Invoicing can make all necessary administrative changes at one time.

4.5.2.21   Opportunities for Administrative Changes are the same regardless of which partner originated the Order.

4.5.2.22   Modifications of Orders (Header, Lines and Schedules), initiated by the originating partner (aka, Partner 1), are limited based on the presence of (undeleted) Performance against a Schedule.

- Data elements eligible for modification are shown in the FIDS under the "How to Update" column, filtered to contain 'Admin' or 'Modification'. Almost 70 of these data elements are marked 'N/A if Performance', meaning that they cannot be modified if Performance has been reported against a Schedule.

  - *Note: Data elements eligible for Administrative Changes may also be updated by Modifying the Order, with re-approval.*

- Specific rules are shown in the SM&VR, including (but not limited to):

- An Order Line or Schedule cannot be cancelled if there has been any performance reported against it.

- Order Schedule Quantity cannot be reduced to a point below the sum of the Quantity performed for any Performance Type.

- This includes the sum of Advance(s), the sum of Delivered/Performed and the sum of Received/Accepted, all which cannot exceed the Order Schedule Quantity.

  - For example, if the Schedule Quantity is 20 units and the partners had already Advanced, Delivered/Performed or Received 15 units, the Schedule Quantity cannot be changed to below 15 units.

- Order Schedule Quantity cannot be reduced to a point below the sum of the Delivered/Performed plus the Quantity of a Deferred Payment in INF (informational) status reported in an open Accounting Period.

- For example, if the Schedule Quantity is 20 units and the servicing agency has delivered 10 units and deferred 5 units, the Schedule Quantity cannot be changed to below 15 units (10 + 5).

4.5.2.23   Reverting an Order is only allowed when both Trading Partners have enabled the feature for their agency account.

4.5.2.24   Only the Originating Partner may revert an Order when the Modification number is greater than zero.

- UI: Allows Order Revert in the following states:
    - Draft (DR)
    - Partner 1 Approval (P1A):
        - BIO: Pending Requesting Approval
        - SFO: Pending Servicing Approval
    - Rejected (REJ)
- API: Allows Order Revert in the following state:
    - Rejected (REJ)
        - Through the API the client submits a Revert (REV) to an Order that is in Rejected and G-Invoicing reverts the Order back to is previous Open or Closed status.

4.5.2.25   When an Order is Reverted the current version of the Order is physically deleted and the previous Order is returned; along with the Modification Number, Business Transaction ID (BTI) and Order status Open (REC) or Closed (CLZ).

4.5.2.26   The Order Revert event is captured in the Order's audit log which can be viewed within the G-Invoicing UI.

4.5.3   Performance Rules

4.5.3.1   Agencies granted data access to an Order will be allowed to access Performance related to that Order.

- Users must be assigned a Performance Manager role to create transactions.

4.5.3.2   A performance transaction must reference an open Order, and each detail record within that transaction must reference an active Schedule from an active Line within that open Order.

- Note: Enabling the **Performance while Order Modification** feature allows Performance to continue against the previous Open Order and all active Lines and Schedules that were present on the Order when the current Modification Number (version) is not in an Open state.

- Performance may only be submitted against an Order schedule(s) that have already received Performance prior to the modification. This is to make sure that data isn't changed on the Order Line/Schedule during a modification that would be used on the initial Performance transaction. Performance locks down data to allow additional Performance to occur during the Order modification.

4.5.3.3 The Performance API resource supports a POST method for new Performance transactions and a DELETE method to (logically) delete (future) Performance.

Performance Type Rules

4.5.3.4 Each performance transaction must originate from the appropriate trading partner, as defined for Performance Type in the FIDS.

- The requesting agency can only submit Received/Accepted transactions.

4.5.3.5 When Advance Payment Indicator is False, performance type Advance is not allowed.

4.5.3.6 When Advance Payment Indicator is True, Deferred Payments are not allowed.

4.5.3.7 When Advance Payment Indicator is True, the net quantity of Delivered/Performed may not exceed the net quantity of paid Advance (i.e., type 548 and status STL or PRE).

- Despite this condition, a Delivered/Performed transaction does not reference an Advance. This allows one delivery to cover multiple advances

4.5.3.8 Each Received/Accepted Performance detail having a positive quantity must reference a Delivered/Performed detail with a positive quantity.

- See Performance FIDS for information on how to reference a performance transaction and its detail record(s).

4.5.3.9 The requesting agency is not permitted to respond to a Delivered/Performed detail recorded by the servicing agency having a negative quantity.

- For example, if the servicing agency reports Delivered/Performed of 5 then adjusts that by -2, the requesting agency must reference the 5 (not the -2) when reporting their Received/Accepted performance.

4.5.3.10 Performance of type Deferred Payment are considered life-to-date, representing a single Accounting Period

- The most recently reported quantity replaces any previously reported quantity for that Accounting Period.

- Previously reported Deferred/Payment Performance set to deleted status (XXX)

- When two Accounting Periods are open simultaneously, Deferred Payment cannot be reported against the later of the two periods.

- See Appendix B for a more detailed description of Deferred Payments.

4.5.3.11 The servicing agency is not allowed to report a single Performance transaction of Type 035 (Delivered/Performed) against a mixture of Advance and non-Advance Schedules.

- This rule is needed because Performance Status is tracked at the header level, and this "mixture" could result in one or more detail records of Status 'PND' (pending) with other detail records of Status 'INF' (informational), which cannot be supported.

Performance Date Rules

4.5.3.12   Performance Date must fall within the Performance Period of the Order.

4.5.3.13   The servicing agency may record an Advance with a future Performance Date, provided the date falls within the Accounting Period submitted with the transaction.

4.5.3.14   For all non-Advance Performance, the Accounting Period submitted with the transaction must be an open period.

4.5.3.15   The servicing agency may record a Delivered/Performed with a future Performance Date, provided the date falls within an open Accounting Period.

- Example: On May 27 the servicing agency reports Delivered/Performed with a Performance Date of May 30. This is allowed because the May period is open. If on May 27 the servicing agency submits a June 15 Performance Date, that transaction will be rejected.

4.5.3.16   The servicing agency is not allowed to submit a future dated Deferred Payment.

4.5.3.17   The requesting agency is not allowed to submit a future dated Received/Accepted.

4.5.3.18   The Performance Date of an adjusting transaction may not precede the Performance Date of the adjusted transaction.

- Example: Servicing agency reports Delivered/Performed with a Performance Date of May 27. The servicing agency may not then reference that May 27 delivery with an adjusting Delivered/Performed with a Performance Date prior to May 27.

- However, the requesting agency may reference that May 27 Delivered/Performed with a Received/Accepted having a Performance Date prior to May 27.

Adjusting and Deleting Performance

4.5.3.19   Adjustments are made by submitting Performance having a negative quantity that references a prior (positive) Performance of the same Type.

4.5.3.20   A future dated Performance can be deleted until the point at which the Performance Date is no longer in the future.

- Future dated Performance transactions that have been logically deleted are set to 'XXX' (deleted) status.

4.5.3.21   Deleted Performance records do not count towards validation rules to determine if an Order is eligible for closure or modification.

4.5.3.22   Future dated Performance cannot be adjusted.

- *Note: This prevents refunding a collection that has not yet occurred.*

4.5.3.23   Performance of Type '014' (Deferred Payment) can be "overridden", but not adjusted.

- See Appendix B for a more detailed description of Deferred Payments.

4.5.3.24   All other Performance transactions (aside from Deferred Payment) can be adjusted by submitting a new Performance transaction (containing a negative quantity) that references the Performance transaction being adjusted.

4.5.3.25   The servicing agency is not allowed to respond to a performance detail that is itself a response to a performance detail (i.e., an adjustment).

- *Note: This is not true for the requesting agency because any (-) adjustments to Received/Accepted performance must reference the (+) Received/Accepted performance which itself must reference the servicing agency's (+) Delivered/Received performance.*

Performance Quantity Rules

4.5.3.26   The net quantity of any one Performance Type (other than '014' Deferred Payment) reported against a single Schedule may not exceed the Order Schedule Quantity, thus preventing balances from falling below zero.

- This includes the sum of Advance(s), the sum of Delivered/Performed and the sum of Received/Accepted.

4.5.3.27   The quantity of a Deferred Payment may not exceed the Undelivered Balance of the Schedule (i.e., Schedule Quantity minus the sum of all Delivered/Performed reported through the accounting period of the new Deferred Payment).

- Example: Schedule Quantity = 50 and two accounting periods are open (May and June). Servicing agency reports Delivered/Performed of 30 in May and 20 in June. The servicing agency is allowed to report a Deferred Payment of 20 in May because June's Delivered/Performed (of 20) does not count against May's Undelivered Balance (of 20).

- A previously reported Deferred Payment (for a specific accounting period) does not count against the Undelivered Balance because the newly reported Deferred Payment will replace the old one (for the same accounting period).

4.5.3.28   The quantity of a Delivered/Performed reported against a Schedule may not exceed the Undelivered Balance of that Schedule (i.e., Schedule Quantity minus the sum of all Delivered/Performed minus any active Deferred Payment for the same accounting period as the new Delivered/Performed).

- In this case a previously reported Deferred Payment (in the same accounting period as the newly reported Delivered/Performed) counts against the Undelivered Balance because it represents goods delivered (or work performed) but not yet paid for.

4.5.3.29 The net quantity of any one performance type reported against a single Schedule may not fall below zero, thus preventing overcorrection resulting in balances rising above the Order Schedule Quantity.

4.5.3.30 Performance quantity of zero is not allowed for Advance Payment transactions submitted by the servicing agency.

4.5.3.31 Zero quantity is allowed for Delivered/Performed and Deferred Payment from the servicing agency and Received/Accepted from the requesting agency.

4.5.3.32 The servicing agency cannot report a positive quantity in in a Performance detail that references a previous performance detail.

- For example, if the servicing agency reports Delivered/Performed of 5 then adjusts that by -2, the servicing cannot then readjust the -2 (net 3) back up by +1. Instead, they must create a new (non-referencing) Performance transaction and detail with a quantity of 1.

4.5.3.33 The total quantity of performance details referencing any performance detail may not exceed the quantity of the original performance detail.

- For example, if servicing agency reports Delivered/Performed of 5, the total quantity of subsequent (-) adjustments by the servicing agency must be between 0.01 and -5 (inclusive).

- For example, if servicing agency reports Delivered/Performed of 5, the total quantity of subsequent Received/Accepted by the requesting agency must be between 0.00 and 5 (inclusive).

- For example, if requesting agency reports Received/Accepted of 5, the total quantity of subsequent (-) adjustments by the requesting agency must be between 0.01 and -5 (inclusive).

  - *Note: This rule is more specific than 4.2.3.11-12 (which keeps the performed quantity between zero and the Scheduled quantity). The rule above keeps the net of subsequent performed quantities between zero and the original (positive) Performance quantity which was referenced.*

4.5.3.34 For Orders with FOB Point of 'Destination' or 'Other', G-Invoicing will generate a Constructive Receipt after the number of Constructive Receipt Days on the Order has elapsed. See Appendix A for more information on Constructive Receipts.

4.5.3.35   When reported, the total quantity of Received/Accepted performance details (by the requesting agency) may not exceed the total quantity Delivered/Performed (by the servicing agency) which reference and include the original performance detail.

- For example, if servicing agency reports Delivered/Performed of 5 followed by an adjustment of -2, the total quantity of Received/Accepted by the requesting agency referencing the Delivered/Performed of 5 must be between 0 and 3 (inclusive).

- For example, if servicing agency reports Delivered/Performed of 5 and the requesting agency reports a Received/Accepted of 5, the servicing agency may report an adjustment of -2. The requesting agency could then report an adjustment of -2 to bring the Performance back in balance.

Performance Settlement Rules

4.5.3.36   Performance which does not result in settlement is set to 'INF' (informational only) or 'PRE' status.

4.5.3.37   Performance Type 014 (Deferred Payment) never triggers settlement.

4.5.3.38   Performance to be settled is set to 'PND' (pending) status.

4.5.3.39   Performance Type 548 (Advance) always triggers settlement and is the only way to trigger settlement when the Advance Payment Indicator is True on the Schedule.

4.5.3.40   Performance requiring settlement but having a future Performance Date is settled when that Performance Date occurs.

4.5.3.41   Performance Type 035 (Delivered/Performed) triggers settlement when the Advance Payment Indicator is False on the Schedule and FOB Point is Source/Origin on the Order.

4.5.3.42   Performance Type 050 (Received/Accepted) triggers settlement when the Advance Payment Indicator is False on the Schedule and FOB Point is not 'S' (i.e., it is FOB Destination or Other) on the Order.

4.5.3.43   Exceptions: Performance details having a Quantity of zero (0) are not sent for settlement. Status is set to:

- 'INF' (informational) if all Quantities are 0

- 'STL' (settled) if Quantity 0 mixed in with other details having Quantity greater than 0.

4.5.3.44   Performance for which settlement has occurred is set to 'STL' (settled) status.

4.5.4   7600EZ Rules

4.5.4.1   7600EZ transactions do not reference a G-Invoicing Order, but they do reference either a GT&C or a 7600EZ Invoice (011)

4.5.4.2   Referenced GT&C's must be in an Open status and allow 7600EZ transactions, meaning that the Business Application (Bizapp) selected on the GT&C aligns with 7600EZ.

4.5.4.3   The Servicing Agency can submit transaction types of Invoice (011) and Reversed (324).

4.5.4.4   The Requesting Agency can submit transaction types of Rejected (598) and Accepted (201).

4.5.4.5   Invoice (011) transactions must reference a GT&C when sending a request with a POST method.

4.5.4.6   The Servicing Agency may submit a request with a DELETE method, but it can only reference an Invoice (011) with a status of Pending (PND). This changes the Invoice (011) status from Pending (PND) to Deleted (XXX).

- The Servicing Agency cannot delete an Invoice (011) that is in Settled (STL) status.

4.5.4.7   The Requesting Agency may submit a request with a DELETE method, but it can only reference a Rejected (598) or Accepted (201) in Informational (INF) status. This changes the status from Informational (INF) to Deleted (XXX).

- The Requesting Agency cannot delete a Rejected (598) that is in Settled (STL) status.

4.5.4.8   Reversed (324), Rejected (598) and Accepted (201) must always reference an existing Invoice (011).

- All referencing transaction are for the full Performance Amount of the referenced Invoice (011).

- 7600EZ doesn't allow partial adjustments, rejections, or acceptance.

  - Example: Servicing Agency submits an Invoice (011) for $100 which is Settled (STL). If the Servicing Agency submits a Reversed (324) transaction, it would be for the full $100. Same if the Requesting Agency either submits a Rejected (598) or Accepted (201), it would be for the full $100 Performance Amount.

4.5.4.9   The Requesting Agency may submit a Rejected (598) within an Invoice (011) Rejection window. When this occurs the Rejected (598) status will be Pending (PND) until Settled (STL). This transaction will move funds back to the Requesting Agency.

- The Rejection Days window is based on the GT&C's BizApp condition. For example, GSA Fleet 7600EZs can have a Rejection Days of 30 days from when the Invoice is created and other EZ types could have Rejection Days more or less than 30 days. This BizApp condition data is configurable and the current BizApp conditions are available via the Feature Management

APIs, additional information is available here: Feature Management and BizApp

4.5.4.10 The Servicing Agency may submit a Reversed (324) transaction after the referenced Invoice (011) is Settled (i.e., status is STL) if the following has not occurred:

- The Requesting Agency has not submitted a Rejected (598) within the Rejection window.

4.5.4.11 The Requesting Agency may submit a Rejected (598) or Accepted (201) at any time, even before the Invoice (011) has Settled (STL) unless the Servicing Agency has already submitted a referencing Reversed (324) to the Invoice (011).

- If the Invoice (011) is in Pending (PND) status (i.e., the Invoice's Performance Date is in the future and Settlement has not occurred) when the Requesting Agency submits a Rejected (598) it will cause the Invoice (011) to move from Pending (PND) to Informational (INF) status. The Rejected (598) will be in Informational (INF) status, as it won't affect funds transfer. Neither the Invoice nor the Rejected transaction will generate funds settlement in this case. If the Rejected (598) is Deleted (XXX) the Invoice (011) will remain in Informational (INF) status.

4.5.4.12 The Requesting Agency may submit a Rejected (598) or Accepted (201) if the referenced Invoice (011) doesn't have an Informational (INF) or Pending (PND) Rejected (598) or Accepted (201) transaction.

- The Requesting Agency can delete a Rejected (598) or Accepted (201) and resubmit a new Rejected (598) or Accepted (201) in this case.

4.5.4.13 The Requesting and Servicing Agency can't reference a EZ transaction that is in Deleted (XXX) status with another EZ transaction but can view or pull transactions that are in Deleted (XXX) status.

7600EZ Date Rules

4.5.4.14 7600EZ Performance Date must always fall within the GT&C Start and End dates.

4.5.4.15 All 7600EZ transactions must always be within an open Accounting Period and depending on when a 7600EZ transaction is received by G-Invoicing this will determine which Accounting Period(s) are available at that date/time. The Performance Date doesn't have to be within the provided Accounting Period and in many cases with past dating a Performance Date it will not.

4.5.4.16 The Servicing Agency may record an Invoice (011) with a future Performance Date, provided the date falls within the current open Accounting Period.

- Example: On May 27 the Servicing Agency reports Invoice (011) with a Performance Date of May 30. This is allowed because the May period is open. If on May 27 the Servicing Agency submits a June 15 Performance

Date, that transaction would result in an error and would not be created, because the June Accounting Period is not open.

4.5.4.17   The Servicing Agency may record an Invoice (011) with a past Performance Date; although, the Accounting Period submitted with the transaction must be an open period.

- Example: On May 2 the Servicing Agency reports an Invoice (011) with a Performance Date of February 10. This is allowed, but the Accounting Period submitted with the transaction must be either the April or May period as both are open on the May 2 Transaction Date (when the transaction was created in GInvoicing).

4.5.4.18   The Servicing Agency can Delete an Invoice (011) with a future Performance Date while the Invoice (011) is in Pending (PND) status.

4.5.4.19   The Servicing Agency cannot submit a Reversed (324) with a future Performance Date.

4.5.4.20   The Servicing Agency may submit a Reversed (324) with a past Performance Date, but it must not be before the referenced Invoice (011) Performance Date.

- The Accounting Period submitted with the Reversed (324) must be an open Accounting Period.

  - Example: On March 20 the Servicing Agency submits an Invoice (011) with a Performance Date of February 10. On May 20 the Servicing Agency submits a Reversed (324) with a Performance Date of April 15.

  - This is allowed, but the Accounting Period submitted with the Reversed (324) must be for the May Accounting Period, which is the only open Accounting Period when the Reversed (324) is submitted on May 20.

4.5.4.21   The Requesting Agency is not allowed to submit a future dated 7600EZ transaction.

4.5.4.22   The Requesting Agency may reference an Invoice (011) when submitting either an Accepted (201) or Rejected (598) with a Performance Date in the past.

- When the referenced Invoice's Performance Date is less than the Transaction Date then the Accepted/Rejected Performance Date must be greater than or equal to the Invoice's Performance Date. i.e., the Servicing Agency backdated the Invoice's Performance Date.

- When the referenced Invoice's Performance Date is equal to or greater than the Transaction Date then the Accepted/Rejected Performance Date must be equal to or greater the Invoice's Transaction Date.

  - Example: The Servicing Agency submits an Invoice with the same Performance date and Transaction Date or the Servicing Agency future dates the Invoice's Performance date.

- Example: On June 10 the Servicing Agency reports an Invoice (011) with a Performance Date of June 5. On June 15, the Requesting Agency may reference the Invoice (011) with a Performance Date between June 5 and June 15.

- The Accounting Period submitted with the Accepted (201) or Rejected (598) must be an open Accounting Period.

7600EZ Settlement Rules

4.5.4.23 The Requesting Agency Accepted (201) is always Informational (INF), which means it will not result in settlement or funds transfer.

4.5.4.24 7600EZ transactions for which settlement has occurred are set to Settled (STL) status.

4.5.4.25 An Invoice (011) with a future Performance Date will be Settled (STL) when that Performance Date occurs.

- An Invoice (011) to be Settled (STL) is set to Pending (PND) status.

4.5.4.26 The Requesting Agency Rejected (598) will result in settlement or funds transfer when submitted within the Rejection window of the Invoice (011). If the Rejected (598) is submitted outside the Rejection window, then it will be Informational (INF).

- The Rejection window is determined by the 7600EZ Business Application (BizApp) assigned to the referenced GT&C.

  - Example: The Rejection window for the 'EZ 10k' BizApp is 30 calendar days, and BizApp 'EZ 10k' is assigned to the referenced GT&C. The Servicing Agency submits an Invoice (011) on December 5 with a Performance Date of December 10, the Rejection window for the Invoice (011) will end on January 9 (30 days after December 10). So, if the Requesting Agency submits a Rejected (598) on or before January 9 then the Rejected (598) will result in a Settled (STL). (i.e., It will generate a funds transfer to reverse the Invoice settlement that occurred on December 10).

4.5.4.27 7600EZ transactions for which settlement has failed is set to 'ERR' (error) status.

- Errors will be corrected by the G-Invoicing Production Support team (if possible, not by an agency user or agency system)

4.6 File Naming Convention

Attachments to Orders and Performance transactions are streamed in the request to G-Invoicing and described by data elements (e.g., file name) in the JSON of the request. There are limitations on special characters used in file names and the types of files that can be attached. Details are available in the on-line User Help available from the G- Invoicing application. (Search for 'attachment').

4.7 Interface Timing

The web services are generally available 24 hours per day, 7 days per week. G-Invoicing <u>may</u> have scheduled outages for maintenance as noted below.

- Monday – Saturday 3:45 AM - 4:15 AM EST
- Sunday 11:00 AM - 11:30 AM EST

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

4.8 Retransmissions

N/A – 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 Order requests, multiple attachment requests) the client (i.e., interfacing agency system) is responsible for continuing the requests when services are restored.

4.9 Interface Data Details

The documents referenced below, along with the details contained in this interface specification, show the required data for the request type and state of an Order transaction via these web services. For additional documentation, refer to the JSON OpenAPI documents published on the Fiscal Service G-Invoicing Resource site.

Orders require data from both trading partners, and some of that Order data may (at times) be provided by either partner. The "Provided By (BIO)" and "Provided By (SFO)" columns of the Order FIDS (referenced in section 1.3 above) indicate which partner contributes each data element for Buyer Initiated Orders and for Seller Facilitated Orders, respectively. Table 2 (above), the Order FIDS and the Order SM&VR (also referenced in section 1.3) can be used together to determine the required data elements for type of request and state of a transaction. The SM&VR also contains the business rules for each type of request and state at the data element level.

The Order FIDS is the source for all data element specifications (e.g., data type, size, etc.) for this interface and is the system agnostic standard for all IGT Buy/Sell data. The FIDS does contain data elements that can be derived from other data (i.e., calculated values). Generally, these derived data elements do not appear in the JSON OpenAPI documents.

4.9.1   Attachment - Data Elements

Table 5: Attachment Push Data Elements

Familiar Name	JSON Attributes	Definition	Constraints	Optionality
Attachment File Name	"fileNm"	The actual name of the attachment file. Note: Not passed on Delete	String [1, 132] Maximum length = 132 String UTF-8	Required Delete: N/A
Attachment File Alias	"fileNameAlias"	Descriptive name for an attachment. Different from the name assigned to the file itself. Note: Not passed on Delete	String [0,132] Maximum length = 132 String UTF-8	Optional Delete: N/A

Document Number	"documentNumber"	Unique identifier for a document which the attachment will be associated.	String [1, 20] Maximum length = 20 String UTF-8	Required
Buy Sell Indicator ***Note:*** *G-Invoicing needs this info in case the client has access to the transaction from both the servicing and requesting sides.*	"buySellIndicator"	Indicates whether the submitter of the attachment is the buyer (Requesting) or seller (Servicing).	String [1,1] Maximum length = 1 String UTF-8 Values: "R" – Requesting, "S" – Servicing ***Note:*** *G-Invoicing will verify that the user has update privileges based on the submitted Buy/Sell Indicator and will reject the request if they do not.*	Required

Note: The attachment service and supporting schema is generic, but the path name differentiates the type of document targeted for the attachment.

4.9.2   Response – Data Elements

The data elements in Table 4 below will be returned in the body of every response generated by G-Invoicing.

Table 6: Call Detail Response Data Elements

Familiar Name	JSON Attributes	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 = 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 [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 = 0 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	Required
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 ***Note:*** *Values are derived from the service that is being accessed.*	Required
Record Count	"recordCount"	The total number of records in the payload.	Integer	Required

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G-Invoicing System Interface Specifications – Push: Order, Performance and 7600EZ
Version 1.3 – March 2024

G-Invoicing
GOVERNMENT INVOICING
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Table 7: Attachment Response Data Elements

Familiar Name	JSON Attributes	Definition	Constraints	Optionality
Attachment File Name	"fileNm"	The actual name of the attachment file.	String [1, 132] 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	"iddrz "	Unique identifier for an attachment.	Integer Maximum length = 30	Required
Attachment Updated By	"createUsr"	The user's name or partner (Buyer or Seller) that uploaded the attachment	String [0,100] Maximum length = 100 String UTF-8	Required
Attachment Date Time	"uploadDtTm"	The time and date 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
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 document.	String [0, 4000] Maximum length = 4000 String UTF8	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 "errors" element will vary depending on the error condition.*	```{ "callDetail": { "environment": "Production", "recordCount": "1" }, "errors": [{ "code": "400", "message": "EZ record not found" }] }```

2	403 – Unauthorized AccessDeniedException
	
	Note: *Message text included in the "errors" element will vary depending on the error condition.*
		<pre>{
		  "callDetail": {
		    "environment": "Production",
		    "recordCount": "1"
		  },
		  "errors": [
		    {
		      "code": "403",
		      "message": "No authorized user found for partner: partnerId, system: systemId."
		    }
		  ]
		}</pre>

3	500 – Internal Server Error ServerException
	
	Note: *Message text included in the "errors" element will vary depending on the error condition.*
		<pre>{
		  "callDetail": {
		    "environment": "Production",
		    "recordCount": "1"
		  },
		  "errors": [
		    {
		      "code": "500",
		      "message": "An unexpected error was encountered.."
		    }
		  ]
		}</pre>

6 Interface Integrity

6.1 Treasury Web Application Infrastructure (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   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 Personally Identifiable Information (PII) is being transported by this system interface. There is no risk that this interface 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   Revision History

Vers. Num.	Date of Change	G-Inv Rel.	Change/Revision Description	Page/Section Affected
1.0	2/27/2023	5.1	Initial Draft of JSON documentation	All
1.1	6/23/2023	5.2	Updated Order and Performance for new Order Revert and Performance while Mod features	Update Diagram 2 Table 2 4.5.2.7 4.5.3.2 Added 4.5.2.15
1.2	7/17/2023	5.2	Corrected EZ attachment version number	3.2.8 Resource: New Attachment
1.3	3/01/2024	7.0	Update Order section for Bidirectional Modification feature Included additional verbiage on restrictions to the Performance while Mod feature	4.4.1 4.5.3.2

Appendix A: Constructive Receipt

Under certain conditions the G-Invoicing system will generate a *Constructive Receipt* to guarantee timely reimbursement for goods delivered or services performed by the servicing agency:

- Conditions:
  - FOB Point is Destination (or Other) for the Order.
  - The number of Constructive Receipt Days (CRD) for the Order have elapsed since the Performance Date of the Delivered/Performed transaction.
  - The number of CRDs for the Order have elapsed since the Transaction Date of the Delivered/Performed transaction.
  - The Quantity of the unanswered Delivered/Performed detail record is greater than zero, because the requesting agency: (a) need not respond to zero quantity Performance by the servicing agency, and (b) must actively receive/accept an adjustment to Delivered/Performed.
  - The requesting agency has not submitted a Received/Accepted performance detail record which references a positive Delivered/Performed detail record submitted by the servicing agency.

  Note: The constructive receipt will be generated the morning after the Constructive Receipt Days period elapses.

- The system-generated performance transactions will have the following characteristics:
  - Prepared By Name will be set to 'System'. o Transaction Date will be set to the current date. o Performance Date will be set to the current date, or to the Order End Date if in the past. o Accounting Period will align with the Performance Date.
  - Comments will be set to 'Constructive Receipt generated because requesting agency did not respond to servicing agency's Delivered/Performed detail record within the agreed upon timeframe'.
  - Status will be set to 'PND' (pending). o Performance Type will be set to 'Received/Accepted'.
  - Quantity will be set to the Quantity of the Delivered/Performed detail record which went unanswered by the requesting agency.
  - All other optional data elements will be omitted.
  - If more than one Schedule in the Order went unanswered on the same day, multiple performance detail records will be grouped within a single performance transaction.

    Note: Settlement requests are not being generated at this time. Performance transactions (including Constructive Receipts) are informational only.

Appendix B: Deferred Payments

Beginning with release 4.2 of G-Invoicing, Performance Type 014 (Deferred Payment) is handled differently than the other three types. Deferred Payments are evaluated as life-to-date entries, replacing any prior entry for the same Schedule and Period. Performance reported against each of the other three types (i.e., Advance Payment, Delivered/Performed and Received/Accepted) are summed together and handled as an aggregate. The impacts of this Type 014 distinction are described within this appendix as an aide to software developers.

Informational Only

Deferred Payment is the only Performance Type that never triggers settlement. It is purely informational (i.e., Status 'INF'), used by the servicing agency to communicate a work in progress accrual. This was the case prior to G-Invoicing release 4.2 and is the case afterwards.

End of Month

Unlike some accounting systems, G-Invoicing does not physically reverse Deferred Payments (aka, accruals) at the month when an accounting period is closed. Instead, G-Invoicing no longer counts previous months' Deferred Payment(s) as accruals in the current period.

To reduce confusion, G-Invoicing only permits reporting of Deferred Payments in the earlier accounting period when two periods are open. Thus, any attempt to report a Deferred Payment in the later open period will result in an error.

Replacements

When a second Deferred Payment is reported against the same Schedule in the same Accounting Period the previous Deferred Payment Performance Transaction (Header and Details) are logically deleted. The client or user may just want to replace one (of many) Details, but the Status is stored at the Header level, so all Details are assigned the same Status. There can be more than one active ('INF'ormational status) Header referencing an Order, each containing Detail(s) which reference (non-overlapping) Schedules. Logically deleted Performance have a Status of 'XXX' in their Header. This concept of Replacement is new as of the 4.2 release.

Reporting Options

Reporting Deferred Payment performance may be handled in two ways. Regardless of which option is chosen, the servicing agency must consistently use one of the two options to avoid inadvertently deleting Performance Details.

A. Report one Detail per Header. One of the ERP vendors has chosen this option, reporting only one Performance Detail per Header, even when there are multiple Schedules involved. This vendor's solution will be able to pull down multiple Details when necessary. This design does not limit how that vendor's offering may present accruals for an Order containing multiple Schedules. Rather, it is a choice on how to communicate that information to G-Invoicing.

B. Report every Detail that has ever been assigned a value in the Accounting Period. This is the way that G-Invoicing and two other ERP vendors will communicate Deferred Payments. For Orders with only one Schedule, there is no difference between the two options. But for multiple Schedules a complete set of deferred payments for the entire Order will be reported within each Accounting Period. These systems will send Details for any Schedule that has a value now or at any time during the Period.

If these two approaches were to be co-mingled (e.g., system user representing an ERP system employing option A followed by a human user in G-Invoicing reporting Deferred Payments against the same Order in the same period), Performance Details could be inadvertently deleted. To prevent this, G-Invoicing recommends that Master and User Administrators do not assign the Performance Manager role to system users and human users assigned to the same organizational group(s).

Example: Order has one Line with five Schedules. Below please find a series of Deferred Payments reported against a single Accounting Period, once using option A and again using option B.

Option A (7 Headers and 7 Details)

On Day 1 the following Deferred Payments are submitted (separately)
>   1. 10 units deferred payment for Schedule 1 2. 20 units deferred payment for Schedule 2
>   3. 30 units deferred payment for Schedule 3

On Day 2 the following Deferred Payments are submitted (separately)
>   1.   0 units deferred payment for Schedule 1
>   2.   0 units deferred payment for Schedule 2
>   3.   40 units deferred payment for Schedule 4

On Day 3 the following Deferred Payments are submitted (separately)
>   1. 300 units deferred payment for Schedule 3

Option B (3 Headers and 11 Details)

On Day 1, Deferred Payment #1 submitted containing these Detail Quantities per Schedule
>   1.   10   2.
>   20
>   3.   30
>   4.   no value … meaning there is no Detail submitted for this Schedule
>   5.   no value

On Day 2, Deferred Payment #2 submitted containing these Detail Quantities per Schedule
>   1.   zero (0) … replaces 10
>   2.   zero (0) … replaces 20
>   3.   30 … unchanged
>   4.   40 … new Performance Detail for Schedule 4
>   5.   no value … this is okay because there has never been a value for schedule 5

On Day 3, Deferred Payment #3 submitted containing these Detail Quantities per Schedule
>   1.   zero (0) … could send no value instead because it was already zero

2. zero (0) … could send no value instead because it was already zero
3. 300 … replaces 30
4. 40 … unchanged
5. no value … this is okay because there has never been a value for schedule 5

<u>Processing Deferred Payments</u>

Each Performance Header submitted may contain 1-to-'n' Details, where 'n' is the number of Schedules in the referenced Order. G-Invoicing will follow these steps when creating Deferred Payments:

1. When G-Invoicing receives a Deferred Payment, it will look for existing Performance Header(s) and Detail(s) possessing the following characteristics:
   a. Type 014 (deferred payment)
   b. Same Accounting Period as new Performance
   c. Same referenced Schedule as appears with a Quantity value (0+) in the new Performance
   d. Status = INF (not XXX)
2. If such Performance Header(s) and Detail(s) are found, they will be logically deleted (i.e., status set to XXX at the Header level) when new deferred payment(s) are saved. This logically deletes all Details associated with the old Header(s).
3. The new Performance Header and Detail(s) replace the old Header(s) and Detail(s), when applicable, and will be set to INF status.
   a. Performance Quantity of zero (or more) will be saved as a Performance Detail.
   b. Performance Quantity is required with each Detail submitted.
   c. If no Detail is submitted for a referenced Schedule, no Performance Detail will be saved.

Note: This does not mean that an existing Performance Detail (for that referenced Schedule and Period) wasn't deleted under Step 2.

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G-Invoicing System Interface Specifications – Push: Order, Performance and 7600EZ
Version 1.3 – March 2024

39