Order Mod/Revert – Objectives

- Describe set of post-Mandate changes (FY ’23 or beyond)
- **Order Mod**: Allow Performance to be reported while previously open Order is being modified
- **Order Revert**: Allow the agency that initiated the modification (Partner 1) to Revert the Order back to its previous version
- Minimize the impact to external APIs

- **Note**: We also analyzed related enhancements for the future
  1. **Return an Order from Partner 2 (manager) to Partner 1 (manager)**
     - Currently, partner 2 manager must submit to approver for rejection
     - Return not possible because no previous status when partner 1 uses API
  2. **Allow partner 2 to initiate Order modification**
     - Currently need to ask Partner 1 to initiate Mod
     - Possible, but large effort to create new SFO and BIO flows
Order Mod/Revert – Background

• Current G-Invoicing Design
  – Two sets of tables for Orders: Active and Archive
  – The highest Order Modification Number (Mod ‘n’) is active
    o Previous Mod Numbers are archived (each one in open or closed status)
    o Currently, access to archive tables is limited to Order History export
  – Performance only allowed when active Order is in open status
  – No easy way to abandon a Mod and restore previous Order version

• API Transition
  – Two partners and G-Invoicing must stay in sync
    o Example: Partner 1 wants to Revert, but Partner 2 cannot interpret that action
  – New API versions must be backwards compatible
    o Use of a new feature that might corrupt an Order in their partner’s system will be controlled through Feature Management
Performance During Order Modification

• Relax validation rules for Performance requests
  – Performance will be allowed when all three conditions are met:
    a) Order is being modified (i.e., states DR/P1A/SP2/P2A)
    b) Previous Modification Number (n -1) is open (REC status)
    c) Feature flag for ‘Order Mod’ is Yes for both partners
      o Both partners must be able to handle this action
  – Note: Performance is still allowed when active Order is open

• Flow of Order modification remains the same
  – No changes to Push Order API
  – G-Invoicing will validate the Order with each UI approval
  – Changes needed to display Orders in G-Invoicing UI
    o Show current version on Order List and Details pages
    o Show “Performance ready” version from Order Schedule Balance page
Revert Order to Previous Version

• Current Order flow for rejection by Partner 2
  1. Partner 1 introduces modification to open Order, then approves
  2. Partner 2 rejects the modification (with Reason)
  3. Partner 1 must then restore previous values of the Order
  4. Both partners must re-approve the Order (as it was)

• Partner 1 Order Manager provided two new options to Revert
  A. Revert a rejected Order (API or UI)
     o Replaces steps 3 and 4 (above)
  B. Revert a draft Order (UI only)

• Active Order is replaced by archived version (Mod ‘n – 1’)
  – UI will preview the prior version (i.e., the target for the Revert)
  – Both partners must be able to interpret this action (see Feature Management)
  – Order Manager must provide a reason for the Revert action
  – Business Transaction ID from archived Order will be restored
  – Last Updated Date/Time will be updated so API clients can pull the change
  – Abandoned modification (number ‘n’) is audited, deleted, and available for reuse
Implementation Details

- The following slides document what needs to be changed in published G-Invoicing specifications in order to implement this new feature.

- Implementation details are provided so that:
  - Product Owner(s) can confirm detailed business requirements
  - Development team(s) can visualize changes needed to support new features

- At this time, we cannot predict when development of this feature will begin, when it will be released into QA or Production, or in which release it will be included.

- When the time comes to begin work on these features, the details will be added to the specifications, a release will be targeted, and API specifications will be republished.

- One of the implementation details described below is a move from XML to JSON payloads for APIs involving GT&Cs, Orders and Performance.
  - Future (post-mandate) APIs will only support JSON payloads
    - Note: Newer APIs (e.g., Pull Org, Remittance) are already in JSON format.
Changes to FIDS

- **Order Federal Intragovernmental Data Standards**
  - Add new data element to capture Reprocessing Reason
    - Definition: Explanation for an action that moves a document back to a prior version or status, including instructions on if/how to correct the document for reprocessing.
    - reprocessingReason (JSON), 1024 characters
      
      *Note: This one data element will cover multiple Reprocessing Reasons, such as Return (for GT&C and Orders), Revert (for GT&C and Orders), and Reverse (for EZ).*
  
  - Add new data element to capture Modification Reason
    - Definition: Explanation for a change to a versioned document (e.g., Order), significant enough to warrant reapproval of the document.
    - modificationReason (JSON), 1024 characters

- We will **not** pursue combining Action with Reason to form Comments
  - This change would have been impactful on the APIs and ERP vendors
  - Rejection Reason remains unchanged
  - Closing Comments remains unchanged
  - In the future, G-Invoicing UI may add the Reason to each Action in the Audit History

- **No changes to Performance FIDS**
Changes to Order SM&VR

• Add new data element (row) to capture Reprocessing Reason
• Add new data element (row) to capture Modification Reason
• There are already “action” columns for Close, Modify and Reject
  – Modification Reason is now required for Modify
  – Return only applies to the user interface
• Add a new column for Revert (see table below)
  – Client must indicate if previous version was open or closed
    o If wrong status is submitted, a 400 error is returned

<table>
<thead>
<tr>
<th></th>
<th>Close</th>
<th>Modify</th>
<th>Reject</th>
<th>Return</th>
<th>Revert</th>
</tr>
</thead>
<tbody>
<tr>
<td>via API or UI:</td>
<td>either</td>
<td>either</td>
<td>either</td>
<td>UI only</td>
<td>either</td>
</tr>
<tr>
<td>Closing Comments:</td>
<td>required</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rejection Reason</td>
<td></td>
<td>required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modification Reason</td>
<td></td>
<td>required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reprocessing Reason</td>
<td></td>
<td></td>
<td>required</td>
<td>required</td>
<td></td>
</tr>
<tr>
<td>Order Number:</td>
<td>required</td>
<td>required</td>
<td>required</td>
<td>required</td>
<td>required</td>
</tr>
<tr>
<td>Business Transaction ID:</td>
<td>required</td>
<td>required</td>
<td>required</td>
<td>required</td>
<td>required</td>
</tr>
<tr>
<td>(new) Status:</td>
<td>CLZ</td>
<td>DR or SP2</td>
<td>REJ</td>
<td>SP2 or DR</td>
<td>REC or CLZ</td>
</tr>
<tr>
<td>Other data requirements:</td>
<td>full Order</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note that the BTI submitted in the request must match the active Order version, not the archived version that will be restored.

New requirements appear in red boldface
Order State Diagram for Push API

Diagram 2:

- Added two new flows for Partner 1 from Reject to Open or Closed
- Previously, Reject could only go to SP2 through the API (due to a modification)
Order Processing for Push API

Table 2

- Added new row for Revert
- Additional UI options appear on later slides

<table>
<thead>
<tr>
<th>Requested By</th>
<th>Type of Request</th>
<th>Method</th>
<th>Current State</th>
<th>New State</th>
<th>Data Validation Rules</th>
</tr>
</thead>
</table>
| 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 2       | 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 (xml)  
|                 |                 |        |               |           | - Partner 2 (only) data in request will be ignored |
| Partner 1       | Reverted Order  | PUT    | Rejected      | Open or Closed | - All required Seller data in request (see SM&VR)  
|                 |                 |        |               |           | - All other Partner 1 & 2 data in request will be ignored  
|                 |                 |        |               |           | - Status included in request must match the status of the previous (Mod n -1) version |

- Requesting Agency
- Requesting Admin Changes
- Servicing Agency

- Closed Order
- Open
- Open
- Open
- Open
- Open
- Open

- Requested Order
- Requesting Admin Changes
- Servicing Admin Changes

- 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
- All required Buyer data in request (see SM&VR)
- Administrative changes detected to Buyer data (xml)
- All required Seller data in request (see SM&VR)
- Administrative changes detected to Seller data (xml)
Other Changes to Push API

• Updated Business Rules
  – At the Agency (aka, disburser) Account level, agencies will be allowed to declare their readiness for:
    a) Performance during Order modification
    b) Reverting a modified Order back to previous version
   
   *Note: Feature Management requirements appear in a separate presentation. Future enhancement could allow for readiness to be signaled at organizational group level.*

  – Performance will be allowed for Orders when:
    a) Order is being modified (i.e., states DR/P1A/SP2/P2A), and
    b) Previous Modification Number (n -1) is open (REC status)

  – Exception to rule 4.2.2.4: BTI will be reused for Revert action

  – For reverted Order requests, Partner 1 must send only those data identified as required in the SM&VR document
    • All other data will be ignored
    • The previous version will be restored as is, except for the Last Update Date/Time
## Version History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Release</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>v0.1</td>
<td>8/21/2021</td>
<td>TBD</td>
<td>Original version</td>
</tr>
<tr>
<td>v0.2</td>
<td>9/27/2021</td>
<td>TBD</td>
<td>After internal reviews</td>
</tr>
<tr>
<td>v0.3</td>
<td>11/5/2021</td>
<td>TBD</td>
<td>Reacted to Treasury &amp; agency feedback. Added detail specs. FRB review.</td>
</tr>
<tr>
<td>v0.4</td>
<td>12/2/2021</td>
<td>TBD</td>
<td>Future API payloads will be in JSON</td>
</tr>
<tr>
<td>v0.5</td>
<td>12/22/2021</td>
<td>TBD</td>
<td>(1) Changed reverseActionComments to backwardActionComments to accommodate 7600EZ type 'Reverse'. (2) Target 13 agencies said it's always okay to report Performance during Order Mod.</td>
</tr>
<tr>
<td>v0.6</td>
<td>1/10/2022</td>
<td>TBD</td>
<td>Draft version for publishing for G-Invoicing website</td>
</tr>
<tr>
<td>v0.7</td>
<td>1/27/2022</td>
<td>TBD</td>
<td>Added new Modify and &quot;Retreat&quot; Reasons. First published version on G-Invoicing website.</td>
</tr>
<tr>
<td>v1.0</td>
<td>1/28/2022</td>
<td>TBD</td>
<td>First version for publishing to G-Invoicing website</td>
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</tbody>
</table>