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1 Introduction

The FIXML Schema introduces the concept of a batch. According to the FIX 5.0 Service Pack 2 specification:

The FIXML Schema root element has been expanded to include the ability to include a batch of FIXML application messages. Batch capability was provided to deliver groups of messages, such as post trade confirms or position reports at the end of a trading session. Single message capability is still supported. Note that the headers [sic] are optional.

While some FIX messages support sending multiple independent business actions in a single message (e.g. Market Data Snapshot / Full Refresh), many messages (such as Account Summary Report, Position Report, Security Definition, etc.) do not. Therefore, the batch concept allows the sender to associate messages representing multiple independent business actions together in a single file. The batch concept is used extensively for both reference data (e.g. securities masters using Security Definition and settlement price files using the Market Data messages) and transaction data (e.g. end of day trade register using Position Report and Trade Capture Report).

This gap analysis proposes a method whereby the sender of a batch can indicate whether the collection of messages contained in a batch form a complete picture (e.g. a snapshot), or whether they should be considered incremental updates.

At present, the FIX Tag=Value encoding does not use the concept of a batch, and would be unaffected. Initially, this would affect FIXML encoding only. However, should other future encodings of FIX support batches, the method of this gap analysis would be applicable.

1.1 Summary of Proposed Changes

- Add a new optional attribute (BatchProcessMode, abbreviated @ProcMode) to the batch header to indicate whether the batch should be considered incremental, or a complete snapshot.

2 Business Requirements

The initial request for this feature stems from LSOC (Legally Segregated Operationally Commingled) reporting requirements; however the proposed solution is general, and can be used in many other situations.

FCM clearing members can satisfy their CFTC reporting requirements for the LSOC (Legally Segregated Operationally Commingled) model by disclosing to the DCO the value of collateral posted to each customer's account. An FCM can do this by sending the DCO a batch file of Account Summary Report messages. However, this approach has some complications:

- The DCO needs a complete picture of collateral value for all of the FCM's accounts.
- FCMs may have many inactive accounts with no collateral. Sending an Account Summary Report for each of these accounts showing collateral value of 0 would be burdensome.

- As FCMs process deposit and withdrawal transactions with their customers, the values reported for LSOC may need to be updated. Sending just accounts that changed, and not all accounts, would be necessary.

Generally speaking, today each FIX message is considered an independent message, and the presence of messages in a batch does not imply completeness. Receiving a batch of Account Summary Report messages implies that the DCO should replace the collateral value for all accounts listed in the batch, however the DCO cannot make assumptions about the collateral value of any account not listed in the batch.

This gap analysis proposes adding a BatchProcessMode attribute (abbreviated @ProcMode) to the batch header. The default value, if not specified, is update/incremental. The recipient of the message will update their own copy of the data based on the information in the batch. However, if the batch has a BatchProcessMode attribute set to snapshot, the recipient will discard or invalidate their copy of the data, and replace it with the data specified in the batch. Note that the definition of what to discard or invalidate will be decided out of band.

Batches labeled as snapshots should only be used to disseminate similar data, such as data with the same message type, or data with contextually related message types, such as Position Report and Trade Capture Report together for an end of day trade register.

For example, an FCM submitting an LSOC report could:

1. Send a batch marked as a snapshot. In that case, for any account not included in the batch, the DCO will set that account's collateral to 0.
2. Send a batch unmarked, or marked as an update. In that case, the DCO will update the collateral for all accounts listed in the batch, but will leave every other account unchanged.
3. The FCM is free to send more than one batch marked as a snapshot, even after sending updates. However, this overwrites previous updates, so the FCM must duplicate the info in the previous updates provided it is still accurate.

Other uses of this are possible. For example, an exchange may publish securities reference data. It might:

1. Publish an initial batch in the morning marked as a snapshot. Any instruments that were delisted, or that were part of an expired series, would not be present in this file. Because it is a snapshot, the recipient can assume any instruments in their securities master not included in the snapshot batch file are invalid.
2. Publish additional batch files throughout the day. These would contain just instruments added or modified during the day, and would be marked as updates, or would be unmarked. The recipient would add or modify these instruments, but would not delete instruments not listed.

As stated above, the scope of what one replaces in a snapshot will be indicated out of band, such as via rules of engagement. Examples include:

- A DCO may expect that an LSOC report contains data for one clearing FCM only. The identity of the FCM might be determined out of band (e.g. a file directory or file name convention), or it might require processing the file to determine the identity of the FCM. Receipt of a snapshot batch will cause the DCO to mark the collateral value of all accounts for that FCM to zero if they are omitted from the file. In other words, even though the batch is marked as a snapshot and

should therefore be considered complete, it is complete for that FCM only; the DCO will not zero out the collateral of all other accounts held at different FCMs.

- Alternately, a DCO with multiple guarantee funds may choose to consider the scope for an LSOC report as the combination of a clearing FCM and a guarantee fund. E.g. FCMs would be expected to submit LSOC reports for different guarantee funds in different files, and an FCM sending a snapshot for their CDS guarantee fund will not zero out the collateral of that FCM's accounts that are part of the IRS guarantee fund.
- An exchange may publish securities reference data in separate files based upon, for example, security type and DCM. So a snapshot batch file for CBOT options will not delete NYMEX options, nor will it delete CBOT futures.

3 Issues and Discussion Points

No issues.

4 Proposed Message Flow

No changes.

5 FIX Message Tables

No changes.

6 FIX Component Blocks

6.1 Component Batch Header

To be completed at the time of the proposal – all information provided will be included in the repository	
Component Name	Batch Header
Component Abbreviated Name (for FIXML)	Batch
Component Type	___ Block Repeating _X_ Block
Category	N/A
Action	__New X_Change
Component Synopsis	
Component Elaboration	
To be finalized by FPL Technical Office	
Repository Component ID	

Note that the Batch Header is not currently a part of the standard FIX Repository, and does not include actual fields. At present, it is an artifact introduced by the schema generation software.

Component FIXML Abbreviation: <Batch>						
Tag	Field Name	Req'd	ICR	Action	Mappings and Usage Comments	Comments
<u>N/A50000</u>	@ID	N				
<u>N/A50001</u>	@TotMsg	N				
<u>N/A50002</u>	@ProcMode	N		NEW		
</Batch>						

7 Category Changes

No changes.

Appendix A - Data Dictionary

Note that the following fields would not ~~presently~~currently appear in the FIX Repository because the batch header does not ~~presently~~currently use FIX fields.

Tag	FieldName	Action	Datatype	Description	FIXML Abbreviation	Add to / Deprecate from Message type or Component block
50000	BatchID	Assign Tag #	String	Unique Identifier for a batch of messages.	@ID	
50001	BatchTotalMessages	Assign Tag #	int	Total # of messages contained within batch.	@TotMsg	

<p>N/A50 002</p>	<p>BatchProcessMode</p>	<p>NEW</p>	<p>int</p>	<p>Indicates the processing mode for a batch of messages.</p> <p>0 = update/incremental (default)</p> <p>1 = snapshot</p> <p>[Elaboration: Indicates that messages within the batch should be considered complete, and should replace all prior information. The recipient can take action, to be decided out of band, on previously received data omitted from the batch (e.g. an account not referenced has zero collateral value, a security not referenced is no longer tradable). The scope of completeness (e.g. a complete list of collateral values for all of a given firm's accounts, a complete list of options trading on a given exchange) will be decided out of band.]</p>	<p>@ProcMode</p>	<p>Batch Header</p>
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Appendix B - Glossary Entries

Term	Definition	Field where used

Appendix C - Abbreviations

Term	Proposed Abbreviation	Proposed Messages, Components, Fields where used
Process	Proc	BatchProcessMode

Appendix D - Usage Examples

The following is an abbreviated FIXML example of a snapshot batch.

```
<FIXML>  
<Batch ProcMode="1">  
<AcctSumRpt ...>  
...  
</AcctSumRpt>  
<AcctSumRpt ...>  
...  
</AcctSumRpt>  
...  
</Batch>  
</FIXML>
```