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| Misys |
| External Fund Order Workflow & Adapter for RBC GFP |
| FusionInvest Toolkit |

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Document Control

Purpose

This document defines the client requirements in which they communicate with RBC in relation to managing external fund orders, and also outlines the solutions Misys will provide to integrate such process in the FusionInvest implementation.

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| ACTION | VERSION | NAME | DATE | COMMENTS |
| Creation | 0.01 | Yuanjia Su | 10-AUG-2016 | Beta version, internal distribution |
| Review | 0.02 | Amira Benslimane | 11-AUG-2016 | Internal distribution |
| Modification | 1.00 | Yuanjia Su | 11-AUG-2016 | Remove the partial execution requirement |

1. Functional details

Business requirement

Treasury team rebalance fund orders to match models that have already been adjusted and validated.

These fund orders are to be executed by RBC GFP platform,

The aim of toolkit will be to send and receive files to and from RBC and manage the orders status and properties in OMS.

1.1 Toolkit interaction with fund orders workflow

**File out (TK1)**:

Toolkit between order status ‘Created‘ and ‘Sent to RBC’

If a fund order (*external fund order* in FusionInvest term) is raised, FusionInvest will propose a button in the order blotters or in the edit order screen to allow user to choose “Send to RBC”; once clicked the order status will be changed to “Sent to RBC”. The file is then sent to the FTP.

This transaction also requires a 4 eyes check – the person who created the order cannot send the order to RBC.

**File in -ACK (TK2)**:

Toolkit between order statuses ‘Sent to RBC’ and ‘RBC working’

The file contains the acknowledgment from RBC. This ACK means the order is going to be executed. Order status will change to ‘RBC working’

**File in – NACK (TK3)**:

Toolkit between order status ‘Sent to RBC’ and ‘RBC rejected’

The file contains the non-acknowledgment from RBC. This NACK means the order won’t be executed and needs to be amended. Order status will change to ‘RBC rejected”.

Once the order is status RBC rejected, the user will have the possibility to:

* Amend the order then re send to RBC
* Cancel the order

**File in – Execution (TK4)**:

Toolkit between order status ‘RBC working’ and ‘Filled’

The file contains the execution details from RBC. Once received the order status will be changed to ‘Filled” and the execution updated with the corresponding details (price, quantity…)

1.2 Timeout requirements

The SFTP that sends orders (in CSV format) to and receives executions from RBC is swiped every 15 minutes. If we don’t receive an ACK or a NACK in 15 minutes the order will be flagged, order status will ~~remain ‘Sent to RBC’.~~Order will change to Timed Out-> user can then send the order to RBC

Mediolanum Treasury team will call RBC to send back the ACK. Once processed the order will follow the workflow described above.

2 Technical details

2.1 Order file format

**File name:** Subject to Mediolanum’s agreement the filename could be in the format: MAML\_ XXX \_GFP\_SEQ\_YYYYMMDD

Where XXX corresponds to the different underlying fund of funds and the sequence is used to avoid a situation where duplicate file is sent in error.

**Fields description:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | Field Name | Description | Format | Populated  “In” Flow | Populated  “Out” Flow |
| 1 | account-no | Account Number  Mediolanum will not quote the GFP account number, they will quote the new CU/FA identifier. The same value will be used in the confirmation file from GFP. | Alpha Numeric | Yes | Yes |
| 2 | h-status | ‘P’ for Pending i.e. not processed  GFP will reply with ‘H’ for History, i.e. processed or ‘R’ for Rejected | Alpha | Yes | Yes |
| 3 | entry-date | Reception date of the orders in GFP | DDMMYYYY | No | Yes |
| 4 | order-date | Trade or Dealing Date of the trade | DDMMYYYY | Yes | Yes |
| 5 | tran-code | Required values are:  “CTB”: Subscription  “BTC”: Redemption | Alpha | Yes | Yes |
| ~~6~~ | ~~tran\_cat~~ | ~~Value of the transaction~~  ~~“P”: Plus~~  ~~“M”: Minus~~ | ~~Alpha~~ | ~~Yes~~ | ~~Yes~~ |
| 7 | order-amt | Gross amount instructed | Numeric (2 decimals) | If trade placed in Amount | Yes |
| 8 | order-shares | Units instructed | Numeric (3 decimals) | If trade placed in Units | Yes |
| 9 | confirm-no | GFP transaction reference number | Alpha Numeric | No | Yes |
| 10 | price-used | Price used / NAV per unit | Numeric (4 decimals) | No | Yes |
| ~~11~~ | ~~settle-date~~ | ~~Requested value date~~ | ~~DDMMYYYY~~ | ~~Yes~~ | ~~Yes~~ |
| 12 | date-settled | Execute date | DDMMYYYY | No | Yes |
| 13 | receipt-amt | Amount on the order | Numeric (2 decimals) | No | Yes |
| 14 | receipt-shares | Units on the order | Numeric (3 decimals) | No | Yes |
| 15 | local-currency | Trade currency (ISO currency code) | Alpha | Yes | Yes |
| 16 | loc-curr-rate | FX rate applied to the transaction if required | Numeric (9 decimals) | No | Yes |
| 17 | all-shares | Client can fully redeem shares:  “Yes”: Full redeem  Blank or “No”: No full redemption | Alpha | Yes | Yes |
| 18 | trn-id | Client transaction number | Alpha Numeric | Yes | Yes |
| ~~19~~ | ~~Type~~ | ~~Buy or sell~~ | ~~Alpha~~ | ~~Yes~~ | ~~Yes~~ |
| 20 | fund-id-ext | ISIN Code for the target fund in format  “ISIN:” followed by ISIN code, e.g. ISIN: LU0000000011 | Alpha Numeric | Yes | Yes |
| 21 | Bloomberg-security- code | New security identifier in the format:  [Bloomberg ticker] [Exchange] [Yellow Key]  e.g. IE0004462408 would be MEDINDL ID Equity  - MEDINDL is the ticker for the class on the Challenge Cyclical fund  - ID represents that the fund is listed on the Irish stock exchange  - Equity represents the asset class (or Bloomberg yellow key) | Alpha Numeric | Yes | Yes |

The table above is provided by RBC, as well as the following examples (in XLS for illustrative purposes but must be a CSV delimited file):

1) The toolkit order adapter sends -> RBC (“In” flow in the above table)



2) RBC -> OMS (“Out” flow in the above table)



2.2 Order adapter and workflow

1. EFT order WF: set up a workflow that is dedicated for ETF(by instrument type) such that the orders will be send to the adapter
2. The order adapter which implements IAdapter: manages the SFTP connection and generation of the above required files
3. The adapter will also manage timeouts: A FileWatcher object will be initialised in the adapter, and listens to a file change event. Within the timeout limit (configurable), if a confirmation file that has the same name is pushed in the SFTP, the order status will be changed to “RBC acknowledged’ or “RBC rejected” as per field “h-status”, otherwise will be “RBC timeout”
4. Execution: Once the execution file is received, the adapter will parse the csv file to fpml format, in order for Integration Service to pick up and process to generate an execution.

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Sign-off

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| *Date* |  | *Date* |  |
| *Authorized Mediolanum Signature(s)* |  | *Authorized MISYS Signature(s)* |  |

