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| Interface Design Specifications  Price Feed (IDS-PF)  Version 0.3 ● Proposed |
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# Document history

The following table contains the document revisions, including references to specific comments.

| Version | Notes |
| --- | --- |
| V 0.1 | Initial Draft |
| V 0.2 | * Changed Client-Server roles * Added ISIN discard rule * Added MD5 trigger and validation |
| V 0.3 | * Added RQ4.6: separate file for each trading venue * Changed RQ4.1: corrected typo on file format * Added 6: Backup solution |

# Document Control

The following table contains the complete list of business requirements described in this document, together with their own identification code and status attributes.

For each requirement the following attributes are provided:

1. **Priority**: describes the importance of the requirement using the MoSCoW standard. More specifically, "Must" is a category used for business critical requirements,"Should" is specified for important but not "show-stopping" requirements, "Could" is used for "nice-to-have" requirements.
2. **Analysis**: expresses the level of completeness of the analysis. In particular the flag "Unknowns" means that there are still topics not covered by workshops and interviews, while "No unknowns" means that the analysis can be considered complete from the client perspective.
3. **Stability**: this flag describe the requirements stability in terms of changes connected to external stakeholder influence. A requirement is "Not Stable" if, for example, the team is waiting for an external feedback that could impact it (changing regulations, changing external systems, changing standards...)

| Code | Name | Priority | Analysis status | Stability |
| --- | --- | --- | --- | --- |
| FN00005830 | Transfer process | Must | No unknowns | Stable |
| FN00005839 | File naming convention | Must | No unknowns | Stable |
| FN00005832 | Transfer frequency | Must | No unknowns | Stable |
| FN00005835 | Multimarket support | Must | No unknowns | Stable |
| FN00005836 | Accepted file format | Must | No unknowns | Stable |
| FN00005837 | Record filtering | Must | No unknowns | Stable |
| FN00005838 | Record uniqueness check | Must | No unknowns | Stable |
| FN00005834 | File validation | Must | No unknowns | Stable |
| FN00005842 | Direct transfer | Must | No unknowns | Stable |
| FN00005843 | Transfer from workstations | Must | No unknowns | Stable |

# Overview

The Clearing System maintains an internal archive of financial instrument prices with the following purposes:

* Margin calculation
* Risk factor calculation
* Collateral evaluation

Prices are generated at Vienna Stock Exchange level and transferred to the Clearing System via SFTP protocol. Multimarket Configurations in which the price files are provided by multiple entities are supported.

# Requirements

## File transfer

### FN00005830 - Transfer process

The protocol supports the batch transfer of price records between a price feed Provider, the Trading Venue/Info-provider, and a price feed Consumer, the CCP (Clearing System).

Price records are stored in plain text files and transferred over the SFTP protocol from the Provider node to the Consumer node. The following steps are executed:

|  |  |
| --- | --- |
| 1:File transfer process | |
| Diagram details | |
| 1.0 - Price File | The information exchange is initiated by the Provider that generates the file and, acting as SFTP Client, puts it in a remote directory located in the Consumer node. |
| 1.1 - MD5 File price | After the price file, the corresponding MD5 file is generated and put in the same directory. |
| 1.2 - Processing | The Consumer monitors (polling) the local directory. The price file is processed when the corresponding MD5 file is detected. |
| 1.3 - Archiving | The Consumer moves the processed file and the corresponding MD5 to its internal archive (archiving) where it is safe-kept for further review. |

### FN00005839 - File naming convention

The filename pattern is described by the following schema: “priceXXXYYYYMMDDHHMM\_NN.txt” where:

1. “XXX” identifies the Provider (E.g. “vie”,”pra”,”oth”)
2. “YYYYMMDDHHMM” is file generation date time in CET format (E.g. “2017010311730”).
3. “\_NN” is a file sequence number. The sequence number is incremented every time a file is generated by a specific Provider. “\_FF” is used for the last EOD price. (E.g., pricevie2017010311230\_01.txt is the first intraday file while “pricevie2017010311730\_FF.txt” is an EOD file).

The MD5 file has the same file name with the extension “md5” (and not "txt") (E.g. pricevie2017010311230\_01.md5)

### FN00005832 - Transfer frequency

1. The protocol supports the possibility to process a variable number of files each day.
2. There should be a minimum of 30 mins delay between deliveries.

### FN00005835 - Multimarket support

1. The protocol supports a multimarket architectural shape in which there could be multiple Providers and a single Consumer in a n to 1 relationship.
2. Each trading venue is expected to produce a separate file (e.g. separate files for Vienna, Prague, Collateral eligible instruments).

## File processing

### FN00005836 - Accepted file format

The file content is formatted using a “fixed-length field format” and doesn't include any header or footer row.

Data fields and respective length are described in the following list:

1. MIC Alpha(4) ISO 10383 Market Identification Code, can be virtual (XOTH).
2. Date Numeric(8) Price Date in “YYYYMMDD” format
3. Time Numeric(8) Price Time in “HHMMSSSS” format
4. ISIN Alpha(12) Financial Instrument ISIN code
5. Price type Alpha(2) Fixed “\_A” (Space+A)
6. Price Numeric(13,5) Fixed point representation of the price. (8 digits, 5 decimal positions)
7. Currency Alpha(3) Currency in ISO 4217 format (3 chars)

### FN00005837 - Record filtering

The Consumer can accept price dates different from the business date in which the file is processed.

The Consumer discards a price record if:

- The price date/time is strictly older than the last valid price record stored for the financial instrument.

- The price date/time is strictly higher than the current business date.

- There are records referring to the same instrument in the same file with more recent date/time.

- The ISIN code reference is not found in the Consumer System.

### FN00005838 - Record uniqueness check

The field subset “MIC/DATE/TIME/ISIN/CURRENCY” is unique; in case multiple occurrences are detected, the last one overwrites what already processed.

### FN00005834 - File validation

1. The Consumer performs the MD5 validation check on the received file.   
   In case of validation error an alert is generated for further dissemination.
2. The Consumer performs data type validation checks on the received record fields.   
   In case of validation errors in the processing phase, an error report is generated by the Consumer and made available in a local directory for further dissemination.  
   The report shall contain, for each row, the discarded record and the specific error code which generated the rejection.

## Contingency solution

### FN00005842 - Direct transfer

To ensure in time data provision for the Clearing System also in contingency situations, a backup transfer mechanism is implemented, where the files are transferred in parallel directly to the consumer using an SFTP connection.

### FN00005843 - Transfer from workstations

Network rules are in place to enable a direct SFTP connection between the CCPA Ops subnet and the Consumer node (allowing the usage of FTP clients like FileZilla on the ops terminals).