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File set for margin calculation replica

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Preface

TARGET AUDIENCE

This document should be read by those interested in replicating the 'core' components of the Euronext Clearing's margin model for Equity and Equity Derivatives traded on Euronext Legacy markets, i.e. Mark-to-Market/Variation Margins, Initial Margins and Decorrelation risk add-on.

WHAT'S NEW?

The following lists only the most recent modification made to this revision/version. For the Document History table, see the Appendix.

REVISION NO./ VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
1.0	07 June 2023	Euronext Clearing	First Version

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1. INTRODUCTION

The present document illustrates the specifications of the data files which can be employed to replicate the Mark-to-Market/Variation Margins, the Initial Margins and the Decorrelation risk add-on amounts (so called 'core' components) of the end of day margin computation on Euronext Legacy Equity and Equity Derivatives portfolios, and as a reference for static data and closing price data of instruments in scope.

2. REPLICABLE MARGINS

Given input trades/positions with Open Interest (O/I):

- Mark-to-market/Premium Margins;
- Variation Margins;
- Initial Margins;
- Decorrelation risk add-on.

2.1 RF01 – Model Parameters

The RF01 file contains the model parameters for the calculation of the Initial Margins (and of the Decorrelation risk add-on).

Please note that not all the parameters in the file need to be used for the abovementioned computation (e.g. holding period, scaling window and lambda parameters are already embedded into the prices of the product scenario price file).

The file is a **.txt** file composed of 8 rows containing the parameter name followed by its value, as in the below example:

```
holding_period: 2
scaling_window: 60
lambda: 0.98
ordinary_confidence_level: 0.995
stressed_confidence_level: 0.995
decorrelation_parameter: 0.8
ordinary_weight: 0.75
stressed_weight: 0.25
```

2.2 RF02 – Product scenarios

The RF02 file contains the product scenario prices (including current scenario, which must be employed to compute product scenario profits/losses) for the calculation of the Initial Margins (and of the Decorrelation risk add-on).

The file is a **.csv** file composed of a first header row + n value rows.

The table below shows the specifications for the fields in the file:

Table 1 - Product scenario prices

Field name	Field type	Possible field values	Field description
eval_dt	Integer		Evaluation date YYYYMMDD
scenario	String	'S', 'U'	Scenario type, ordinary (scaled) 'S' or stressed (unscaled) 'U'
instr_id	String		Product ISIN code
asset_type	String	'C', 'F', 'O'	Product type, cash ('C'), futures ('F') or option ('O')
option_type	String	'C', 'P', 'N'	Option type, call ('C') or put ('P') ('N' for cash and futures products)
und_instr_id	String		Underlying product ISIN code
mat_dt	Integer		Product expiry date YYYYMMDD (0 for cash products)
mult	Float		Product multiplier
strike	Float		Option strike price (0.0 for cash and futures products)
settl_curcy	String		ISO product denomination currency (ISO 4217, 3 chars code)
ref_dt	Integer		Scenario date YYYYMMDD (= eval_dt for current scenario)
value	Float		Scenario value

2.3 RF03 – Exchange rates scenarios

The RF03 file contains the exchange rate scenario values (including current scenario) for the calculation of the Initial Margins (and of the Decorrelation risk add-on).

The file is a **.csv** file composed of a first header row + n value rows.

The table below shows the specifications for the fields in the file:

Table 2 – FX scenario values

Field name	Field type	Possible field values	Field description
eval_dt	Integer		Evaluation date YYYYMMDD
base_curcy	String		ISO product currency code (e.g. 'USD')
counter_curcy	String		ISO clearing currency code (i.e. 'EUR')
scenario	String	'S', 'U'	Scenario type, ordinary (scaled) 'S' or stressed (unscaled) 'U'
ref_dt	Integer		Scenario date YYYYMMDD (= eval_dt for current scenario)
value	Float		Scenario value

2.4 RF04 – Instrument data

The RF04 file contains product referential (static and settlement price) data for the overall margin replica.

The file is a **.csv** file composed of a first header row + n value rows.

The table below shows the specifications for the fields in the file:

Table 3 – Product referential data

Field name	Field type	Possible field values	Field description
ref_dt	Integer		Reference date YYYYMMDD
instr_id	String		Product ISIN code
trade_curcy	String		ISO product denomination currency (ISO 4217, 3 chars code)
asset_type	String	'C', 'F', 'O'	Product type, cash ('C'), futures ('F') or option ('O')
cfi	String		Product CFI code (ISO 10962, 6 chars code)
mat_date	Integer		Product expiry/maturity date YYYYMMDD (0 for non-bond cash products)
mult	Float		Product Multiplier
settl_type	String	'C', 'P'	Product settlement type, cash settlement ('C') or physical delivery ('P')
option_type	String	'C', 'P', 'N'	Option type, call ('C') or put ('P') ('N' for cash and futures products)
option_exercise_style	String	'A', 'E', 'N'	Option exercise style, American ('A') or European ('E') ('N' for cash and futures products)
option_strike_price	Float		Option strike price (0.0 for cash and futures products)
option_implied_volatility	Float		Option implied volatility (0.0 for cash and futures products)
und_instr_id	String		Underlying product ISIN

und_currency	String		ISO underlying product currency (ISO 4217, 3 chars code)
price	Float		Product settlement/closing price
accr_int	Float		Bond accrued interest (0.0 for non-bond products)

3. FILE SET

The following set of files, produced daily, correspond to the data file described in this document.

- Report RF01 – filename: “yyyymmdd_rf01.txt”
- Report RF02 – filename: “yyyymmdd_rf02.csv”
- Report RF03 – filename: “yyyymmdd_rf03.csv”
- Report RF04 – filename: “yyyymmdd_rf04.csv”

Such files are compressed into the following package that is placed in the member sftp folder.

- Filename: “yyyymmdd_rfx.zip”