

clear to trade



## eurex clearing circular 046/15

**Date:** 22 April 2015  
**Recipients:** All Clearing Members of Eurex Clearing AG and Vendors  
**Authorized by:** Heike Eckert

### Adjustment of the Currency Haircut File (FPHCPA)

**Contact:** Risk Control, T+49-69-211-1 24 52, [risk@eurexclearing.com](mailto:risk@eurexclearing.com)

**Content may be most important for:**

➔ Middle + Backoffice

**Attachment:**

Eurex Release 14.0 - Member Interface Specification -  
File Interface Layouts

**Summary:**

With this circular, Eurex Clearing would like to inform all Members, Customers and Vendors about the adjustment of the "Currency Haircut File" (FPHCPA). This file contains the currency haircut parameters and the adjusted exchange rates used for margining and collateral evaluation. Through this adjustment, additional exchange rate combinations can be provided.

The adjusted "Currency Haircut File" (FPHCPA) is scheduled to be provided in simulation from 2 June 2015. Production launch is planned for **15 June 2015**.

The amendment relates to the fields "EXCH-RAT MHC" and "PRV-EXCH-RAT RMHCPA". Currently, the exchange rate of the currency, represented by the field "CURR-TYPE COD RMHCPA" against the base currency euro (EUR) is always displayed.



Eurex Clearing AG  
Mergenthalerallee 61  
65760 Eschborn  
Mailing address:  
60485 Frankfurt/Main  
Germany

T +49-69-211-1 17 00  
F +49-69-211-1 17 01  
[memberservices@eurexclearing.com](mailto:memberservices@eurexclearing.com)  
Internet:  
[www.eurexclearing.com](http://www.eurexclearing.com)

Chairman of the  
Supervisory Board:  
Hugo Bänziger

Executive Board:  
Thomas Book (CEO),  
Heike Eckert, Matthias Graulich,  
Thomas Laux, Erik Tim Müller

Aktiengesellschaft mit  
Sitz in Frankfurt/Main  
HRB Nr. 44828  
USt-IdNr. DE194821553  
Amtsgericht  
Frankfurt/Main

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With this circular, Eurex Clearing would like to inform all Members, Customers and Vendors about the adjustment of the "Currency Haircut File" (FPHCPA). This file contains the currency haircut parameters and the adjusted exchange rates used for margining and collateral evaluation. Through this adjustment, additional exchange rate combinations can be provided.

Provision of the adjusted "Currency Haircut File" (FPHCPA) is scheduled for in simulation from 2 June 2015. Production launch is planned for 15 June 2015.

The amendment relates to the fields "EXCH-RAT MHC" and PRV-EXCH-RAT RMHCPA". Currently, the exchange rate of the currency, represented by the field "CURR-TYPE COD RMHCPA" against the base currency euro (EUR) is always displayed.

Example:

AUDCHF	<b>1.39140000</b>	1.41110900	1.19939700	8.11	<b>1.37970000</b>	1.40517500	1.19435400	8.11AUD	1.0000
AUDEUR	<b>1.39140000</b>	1.50076400	1.28203600	7.86	<b>1.37970000</b>	1.48814400	1.27125600	7.86AUD	1.0000
AUDUSD	<b>1.39140000</b>	1.41822100	1.19842300	8.40	<b>1.37970000</b>	1.41668500	1.19712500	8.40AUD	1.0000

In future, the exchange rate against other base currencies, depending on the field "EUREX CURR-TYPE COD RMHCPA" is displayed.

Example:

AUDCHF	1.30600000	1.41110900	1.19939700	8.11	1.29910000	1.40517500	1.19435400	8.11AUD	1.0000
AUDEUR	1.39140000	1.50076400	1.28203600	7.86	1.37970000	1.48814400	1.27125600	7.86AUD	1.0000
AUDUSD	1.30970000	1.41822100	1.19842300	8.40	1.30720000	1.41668500	1.19712500	8.40AUD	1.0000

Above-mentioned adjustments refer to both the intra-day and the end-of-day versions of the Currency Haircut File.

A detailed file description can be found in chapter 12.2 of the document attached to this circular.

22 April 2015



## **Eurex Release 14.0**

Member Interface Specification - File Interface Layouts



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## 1 How to use this Manual

This document provides information about the Eurex file based member interface as well as the layout of the provided files. It is intended for both exchanges Eurex and EEX and applies to their users, unless clearly stated otherwise.

Please note that information related to XML and generic text format reports is available in the document "Eurex XML Report Reference Manual".

## **2 Eurex File Interface**

### **2.1 Overview**

The files provided by Eurex allow members to use Eurex calculated theoretical values (i.e. risk arrays), security and coupon parameters, to verify the Eurex margin calculation and to margin their customers and non-clearing members.

The files described below support members with their risk margin calculation.

These files are not member specific, i.e. the same files are sent to all members and are available on the Internet. The files are sent in complete form, not only the changes from the last update.

In addition to the files described in this document, BOF margin parameter transactions for derivatives are sent to clearing member back office systems to support risk based margining.

#### **2.1.1 What Is Copied**

Eurex writes all the files to one compressed file and copies them to the public section of the Common Report Engine (CRE). To learn more about the CRE, please refer to the "Common Report Engine User Guide" available for download on the Eurex/Eurex Clearing websites. The files are transferred twice each day, once prior to and the second time during the Eurex batch processing. Theoretical price files for the cash market (i.e. FPTHEB, FPTHEC, FPTHEE, FPTHES), however, are only distributed once per day during batch processing. The files have the date of generation in the form YYYYMMDD in the filename. The last record in the files does not contain data, but marks the end of the file. This last record contains the number of data records and a short description of its contents.

## 2.1.2

**Theoretical Values Data Access**

After decompression, the file names are:

Common Report Engine file name (zipped, as delivered to CRE)	File	Record Length in Bytes
<NC>FPICTHEBPUBLI<YYYYMMDD>.TXT.ZIP	FPTHEB	131
<NC>FILETHNBPUBLI<YYYYMMDD>.TXT.ZIP	FPTHNB	134
<NC>FPICTHECPUBLI<YYYYMMDD>.TXT.ZIP	FPTHEC	52
<NE>FPICTHEDPUBLI<YYYYMMDD>.TXT.ZIP	FPTHED	up to 44
<NE>FPICTHEDPUBLI<YYYYMMDD>INTR.TXT.ZIP	FPTHND	
<NE>FILETHNDPUBLI<YYYYMMDD>.TXT.ZIP		
<NE>FILETHNDPUBLI<YYYYMMDD>INTR.TXT.ZIP		
<NC>FPICTHEEPUBLI<YYYYMMDD>.TXT.ZIP	FPTHEE	117
<NC>FILETHNEPUBLI<YYYYMMDD>.TXT.ZIP	FPTHNE	117
<NE>FPICTHEFPUBLI<YYYYMMDD>.TXT.ZIP	FPTHEF	264
<NE>FPICTHEFPUBLI<YYYYMMDD>INTR.TXT.ZIP	FPTHNF	266
<NE>FILETHNFPUBLI<YYYYMMDD>.TXT.ZIP		
<NE>FILETHNFPUBLI<YYYYMMDD>INTR.TXT.ZIP		
<NC>FPICTHESPUBLI<YYYYMMDD>.TXT.ZIP	FPTHES	152
<NC>FILETHNSPUBLI<YYYYMMDD>.TXT.ZIP	FPTHNS	152
<NE>FPICPARMPUBLI<YYYYMMDD>.TXT.ZIP	FPPARM	64
<NE>FPICPARMPUBLI<YYYYMMDD>INTR.TXT.ZIP		
<NE>FPICPARAPUBLI<YYYYMMDD>.TXT.ZIP	FPPARA	65
<NE>FPICPARAPUBLI<YYYYMMDD>INTR.TXT.ZIP		
<NC>FPICMGBPPUBLI<YYYYMMDD>.TXT.ZIP	FPMGBP	61
<NE>FTHCPARMPUBLI<YYYYMMDD>.TXT.ZIP	FPHCPA	104
<NE>FTHCPARMPUBLI<YYYYMMDD>INTR.TXT.ZIP		
<NE>RPTDEPRAPUBLI<YYYYMMDD>.TXT.ZIP	RPTDEPRA	up to 42

(Where <YYYYMMDD> is the date of the current business day and <NE> is the EUREX related environment number and <NC> is CCP related environment number)

These files are organized sequentially and contain only ASCII characters. Use of this standard provides platform independence.

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### **2.1.3 File Processing**

Members use these files to assist with the calculation of margin requirements for their principal and agent accounts. Member back office margin applications read the files in their entirety to access the Eurex supplied theoretical values, margin group and class information and other parameters.

### **2.1.4 File Maintenance**

All files are sent each business day prior to or at the early start of the Eurex batch. It is the member responsibility to delete obsolete versions of the files (i.e. versions of prior days) before receiving the current day's files.

## 2.2 File Format Specifications

In the following chapters the format of files is described using the common COBOL syntax. Some definitions and examples are provided here for clarification.

Format Identifier	Description
PIC X(1) resp. PIC X	Alphanumeric data field containing one single character
PIC X(2) resp. PIC XX	Alphanumeric data field with 2 characters
PIC X(N)	Alphanumeric data field containing N characters
PIC 9(N)	Unsigned numeric data field containing N digits, leading zeros are displayed
PIC 9(2) resp. PIC 99	Unsigned numeric data field containing 2 digits
PIC 9(7).9(3)	Unsigned numeric data field containing 7 digits before and 3 digits after the decimal point. All leading and trailing zeros are displayed
PIC 9(7).999	Same as PIC 9(7).9(3)
PIC -9.99	Signed numeric data field displaying 1 digit before and 2 after the decimal point. The number is preceded with a minus sign if negative, otherwise it is a blank. The maximum numeric value of this field is 9.99, the minimum numeric value of this field is -9.99.
PIC Z(N)....	Represents N leading digit positions. Each is replaced by a space when its value and the value of the digits to its left are zero

## 2.3 Theoretical Values: Bonds – FPTHEB/FPTHNB

FPTHEB/FPTHNB contain theoretical values and parameters for bonds, which are required for the risk based margining of the day. These files are only provided for Eurex.

### 2.3.1 Record layout of the file FPTHEB

```

01  RMTHEB-WS-REC.
05  KEY-GRP-RMTHEB.
    10  SECU-ISIN-RMTHEB                PIC X(12) .
05  DATA-CLS-RMTHEB.
    10  MGN-GRP-COD-RMTHEB              PIC X(5) .
    10  MGN-CLS-COD-RMTHEB              PIC X(5) .
    10  MGN-PAR-RMTHEB                  PIC 9(3) .9(3) .
    10  MGN-PAR-FLG-RMTHEB              PIC X
05  DATA-SECU-RMTHEB.
    10  SECU-PRC-RMTHEB                  PIC 9(10) .9(5) .
    10  SECU-MAX-UP-PRC-RMTHEB           PIC 9(10) .9(2) .
    10  SECU-MAX-DWN-PRC-RMTHEB         PIC 9(10) .9(2) .
    10  SECU-NEAR-STL-DATE-RMTHEB       PIC 9(8) .
    10  SECU-AI-METHOD-RMTHEB         PIC X(2) .
    10  SECU-ACCRU-INT-RMTHEB           PIC -9(3) .9(9) .
    10  SECU-FREQ-RMTHEB                 PIC 9(3) .
    10  SECU-CDAYS-ACCRU-RMTHEB         PIC -9(5) .
    10  SECU-CDAYS-IN-PER-RMTHEB        PIC 9(5) .
05  DATA-CURR-RMTHEB.
    10  CURR-TYP-COD-RMTHEB              PIC X(3) .
    10  CURR-INTR-RATE-RMTHEB           PIC 9(2) .9(3) .
    10  UP-ADPT-INTR-RATE-RMTHEB        PIC 9(2) .9(3) .
    10  DWN-ADPT-INTR-RATE-RMTHEB       PIC 9(2) .9(3) .

01  RMTHEB-FILE-INFO-REC REDEFINES RMTHEB-WS-REC.      (last record)
05  FILE-END-MARK-RMTHEB                PIC X(5) .
05  FILLER                               PIC X.
05  FILE-COUNTER-RMTHEB                  PIC 9(8) .
05  FILLER                               PIC X.
05  CURR-BUS-DAY-RMTHEB                  PIC 9(8) .
05  FILLER                               PIC X.
05  DESCRIPTION-RMTHEB                   PIC X(40) .
05  FILLER                               PIC X(67) .

```

### 2.3.2 Record layout of the file FPTHNB

```

01  RMICTHNB-WS-REC.
05  KEY-GRP-RMICTHNB.
    10  SECU-ISIN-RMICTHNB              PIC X(12) .
05  DATA-CLS-RMICTHNB.

```

## Eurex Member Interface Specifications - File Interface

As of Apr. 17, 2015

## Eurex File Interface

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```

10 MGN-GRP-COD-RMICHNB          PIC X(5) .
10 MGN-CLS-COD-RMICHNB          PIC X(5) .
10 MGN-PAR-RMICHNB              PIC 9(3).9(3) .
10 MGN-PAR-FLG-RMICHNB          PIC X(1) .
05 DATA-SECU-RMICHNB .
10 SECU-LST-CLS-PRC-RMICHNB      PIC 9(10).9(5) .
10 SECU-MAX-UP-PRC-RMICHNB       PIC 9(10).9(2) .
10 SECU-MAX-DWN-PRC-RMICHNB      PIC 9(10).9(2) .
10 SECU-NEAR-STL-DATE-RMICHNB    PIC 9(8) .
10 SECU-AI-METHOD-RMICHNB       PIC X(2) .
10 SECU-ACCRU-INT-RMICHNB         PIC -9(3).9(9) .
10 SECU-FREQ-RMICHNB             PIC 9(3) .
10 SECU-CDAYS-ACCRU-RMICHNB      PIC -9(5) .
10 SECU-CDAYS-IN-PER-RMICHNB     PIC 9(5) .
05 DATA-CURR-RMICHNB .
10 CURR-TYP-COD-RMICHNB          PIC X(3) .
10 CURR-INTR-RATE-RMICHNB        PIC -9(2).9(3) .
10 UP-ADPT-INTR-RATE-RMICHNB     PIC -9(2).9(3) .
10 DWN-ADPT-INTR-RATE-RMICHNB    PIC -9(2).9(3) .
01 RMICHNB-FILE-INFO-REC REDEFINES RMICHNB-WS-REC .
05 FILE-END-MARK-RMICHNB         PIC X(5) .
05 FILLER                        PIC X .
05 FILE-COUNTER-RMICHNB          PIC 9(8) .
05 FILLER                        PIC X .
05 CURR-BUS-DAY-RMICHNB          PIC 9(8) .
05 FILLER                        PIC X .
05 DESCRIPTION-RMICHNB           PIC X(40) .
05 FILLER                        PIC X(70) .

```

## 2.3.3

## Field descriptions

## FPTHEB

Field	Description
SECU-ISIN-RMTHEB	ISIN of the security for which the information is shown.
MGN-GRP-COD-RMTHEB	Margin group code.
MGN-CLS-COD-RMTHEB	Margin class code: Identification of the margin class.
MGN-PAR-RMTHEB	Margin parameter: This is the maximum fluctuation which a security can be expected to have during the next day. Based on the historical volatility.
MGN-PAR-FLG-RMTHEB	Indicator: if the margin parameter is given in absolute (A) or percentage (P).
SECU-PRC-RMTHEB	Security price used for risk based margining.
SECU-MAX-UP-PRC-RMTHEB	Maximum expected price. For bonds it is the expected clean price as a percentage.

**FPTHEB**

Field	Description
SECU-MAX-DWN-PRC-RMTHEB	Minimum expected price. For bonds it is the expected clean price as a percentage.
SECU-NEAR-STL-DATE-RMTHEB	Nearest settlement date (actual date plus standard settlement period for a bond).
SECU-AI-METHOD-RMTHEB	Accrued interest method. "01" – 30/360 days/year, "02" – 30/365 days/year, "03" – 30/360 days/year, including Italian tax, and "04" – actual/actual (ICMA standard).
SECU-ACCRU-INT-RMTHEB	Accrued interest for next coupon p.a..
SECU-FREQ-RMTHEB	Number of coupon payments per year.
SECU-CDAYS-ACCRU-RMTHEB	Number of days since last coupon – counted according to specific accrued interest method.
SECU-CDAYS-IN-PER-RMTHEB	Number of days between last and next coupon – counted according to specific accrued interest method.
CURR-TYP-COD-RMTHEB	Currency type code (ISO Code), e.g.: EUR, CHF.
CURR-INTR-RATE-RMTHEB	Market cash interest rate of the currency.
RSK-ADPT-INTR-RATE-RMTHEB	Obsolete field. Currently always filled with 0.
UP-ADPT-INTR-RATE-RMTHEB	Obsolete field. Currently always filled with 0.
DWN-ADPT-INTR-RATE-RMTHEB	Obsolete field. Currently always filled with 0.

The following descriptions apply to the last record only.

#### FPTHEB

Field	Description
FILE-END-MARK-RMTHEB	This field marks the end of the file and contains the string "**EOF**".
FILE-COUNTER-RMTHEB	This field contains the number of data records contained in the file, <i>not</i> including the last record.
CURR-BUS-DAY-RMTHEB	This field contains the date of the business day in the format YYYYMMDD.
DESCRIPTION-RMTHEB	This field contains a short description of the file content.

FPTHNB is a copy of FPTHEB, with the exception of the following 3 interest rate fields, which support both positive and negative values:

#### FPTHNB

Field	Description
RSK-ADPT-INTR-RATE-RMTHEB	Risk adapted interest rates.
UP-ADPT-INTR-RATE-RMTHEB	Currency risk adapted interest rate – up.
DWN-ADPT-INTR-RATE-RMTHEB	Currency risk adapted interest rate – down.

## 2.4 File Bond Coupon Parameters – FPTHEC

This file contains coupon dates and rates for all bonds required for the risk based margining of the day. This file is only provided for Eurex.

### 2.4.1 Record layout of the file FPTHEC

```

01  RMTHEC-WS-REC .
    10  SECU-ISIN-RMTHEC                PIC X(12) .
    10  SECU-CPN-DATE-RMTHEC           PIC 9(8) .
    10  SECU-CPN-RATE-RMTHEC           PIC 9(2) .9(3) .
    10  SECU-CPN-ADJ-RMTHEC           PIC 9(3) .9(5) .
    10  SECU-CPN-FLAG-RMTHEC          PIC X(1) .
    10  SECU-CPN-RECORD-DATE-RMTHEC   PIC 9(8) .
    10  SECU-CPN-PAYMENT-DATE-RMTHEC  PIC 9(8) .

01  RMTHEC-FILE-INFO-REC REDEFINES RMTHEC-WS-REC.      (last record)
    05  FILE-END-MARK-RMTHEC           PIC X(5) .
    05  FILLER                          PIC X .
    05  FILE-COUNTER-RMTHEC           PIC 9(8) .
    05  FILLER                          PIC X .
    05  CURR-BUS-DAY-RMTHEC           PIC 9(8) .
    05  FILLER                          PIC X .
    05  DESCRIPTION-RMTHEC           PIC X(12) .
    05  FILLER                          PIC X(19) .

```

### 2.4.2 Field descriptions

FPTHEC	
Field	Description
SECU-ISIN-RMTHEC	ISIN of the security
SECU-CPN-DATE-RMTHEC	Issue/maturity/coupon date – depending on the flag below
SECU-CPN-RATE-RMTHEC	Coupon rate (0 for issue date)
SECU-CPN-ADJ-RMTHEC	Coupon adjustment
SECU-CPN-FLAG-RMTHEC	Issue/maturity/coupon flag - the coupon rate and date fields are set for "I" – Issue of the bond "M" – Maturity of the bond "C" – Regular coupon
SECU-CPN-RECORD-DATE-RMTHEC	Date upon which the coupon compensation is based
SECU-CPN-PAYMENT-DATE-RMTHEC	Date upon which the coupon payment is due

---

The following descriptions apply to the last record of FPTHEC only.

FPTHEC	
Field	Description
FILE-END-MARK-RMTHEC	This field marks the end of the file and contains the string “*EOF*“
FILE-COUNTER-RMTHEC	This field contains the number of data records contained in the file, <i>not</i> including the last record
CURR-BUS-DAY-RMTHEC	This field contains the date of the business day in the format YYYYMMDD
DESCRIPTION-RMTHEC	This field contains a short description of the file content

## 2.5 Theoretical Price File - FPTHED/FPTHND

FPTHED/FPTHND contain information about theoretical prices for all Eurex and EEX products. Eurex single-stock futures on USD-listed stocks are contained in the intra-day version.

The files have a record structure with the following information:

- Margin Class (M)
- Array (A)
- Product (P)
- Expiry (E)
- Series (S)
- Bucket (B)
- Volatility (V)

The files have a variable record length with up to 44 bytes. The very last line contains up to 86 characters.

### 2.5.1 Record layout of the file FPTHED

```

01  RMTHED-WS-REC.
    05  RMTHED-CLS-REC.
         10  REC-TYP-COD-RMTHED                PIC X.
         10  FILLER                            PIC X(43) .

***
* RECORD TYPE = "M" (Margin class Record)
***
    05  RMTHED-MGN-CLS-REC REDEFINES RMTHED-CLS-REC.
         10  REC-TYP-COD-RMTHED                PIC X.
         10  MGN-CLS-COD-RMTHED                PIC X(5) .
         10  MGN-EXPI-YR-DAT-RMTHED            PIC 9(2) .
         10  MGN-EXPI-MTH-DAT-RMTHED            PIC 9(2) .
         10  INTP-REF-PRC-RMTHED                PIC X(10) .
         10  MGN-INTERVAL-RMTHED                PIC X(11) .
         10  CURR-DCML-SHFT-GRP-RMTHED.
             15  CURR-TYP-COD-RMTHED            PIC X(3) .
             15  DCML-SHFT-NO-RMTHED            PIC 9(1) .

***
* RECORD TYPE = "A" (Array Record)
***
    05  RMTHED-ARRAY-REC REDEFINES RMTHED-CLS-REC.
         10  REC-TYP-COD-RMTHED                PIC X.
         10  RISK-ARRAY-INDEX-RMTHED            PIC 9(2) .
         10  CALC-BUC-PRICE-RMTHED              PIC X(9) .
         10  PRICE-UDN-IND-RMTHED                PIC X(1) .
         10  STOCK-PRC-IND-RMTHED                PIC X(1) .

***
* RECORD TYPE = "P" (Product Record)
***
    05  RMTHED-PROD-REC REDEFINES RMTHED-CLS-REC.
         10  REC-TYP-COD-RMTHED                PIC X.
         10  PROD-ID-COD-RMTHED                PIC X(4) .
         10  PROD-TIC-SIZE-RMTHED                PIC X(7) .
         10  PROD-TIC-VAL-RMTHED                PIC Z(3)9.9(4) .
         10  MGN-STYLE-FLG-RMTHED                PIC X(1) .
         10  EXER-PRC-DECIMALS-RMTHED            PIC 9(1) .

```

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```

***
* RECORD TYPE = "E" (Expiry Record)
***
    05 RMTHED-EXPIRY-REC REDEFINES RMTHED-CLS-REC.
       10 REC-TYP-COD-RMTHED          PIC X.
       10 SERI-CLAS-COD-RMTHED        PIC X(1) .
       10 SERI-EXP-DAT-RMTHED.
          20 EXPI-YR-DAT-RMTHED        PIC 9(2) .
          20 EXPI-MTH-DAT-RMTHED       PIC 9(2) .
       10 INTR-RAT-PCT-RMTHED         PIC 9(1) .9(6) .
       10 YIELD-RAT-PCT-RMTHED        PIC 9(1) .9(6) .
       10 DAYS-TO-EXP-RMTHED          PIC Z(4)9 .

***
* RECORD TYPE = "S" (Series Record)
***
    05 RMTHED-SERIES-REC REDEFINES RMTHED-CLS-REC.
       10 REC-TYP-COD-RMTHED          PIC X.
       10 EXER-PRC-RMTHED             PIC 9(6) .
       10 SERI-VERS-NO-RMTHED         PIC 9(1) .
       10 UND-REF-PRC-RMTHED          PIC X(10) .
       10 SERI-REF-PRC-RMTHED         PIC X(10) .
       10 SECU-TRD-UNT-NO-RMTHED      PIC Z(3)9.9(4) .
       10 SERI-STS-COD-RMTHED         PIC X(1) .
       10 VOL-RMTHED                  PIC Z(2)9.9(2) .

***
* RECORD TYPE = "B" (Bucket Record)
***
    05 RMTHED-BUCKET-REC REDEFINES RMTHED-CLS-REC.
       10 REC-TYP-COD-RMTHED          PIC X.
       10 RISK-ARRAY-INDEX-RMTHED     PIC 9(2) .
       10 CALC-UND-PRICE-RMTHED       PIC X(9) .
       10 FORWARD-UND-PRICE-RMTHED    PIC Z(4)9.9(6) .

***
* RECORD TYPE = "V" (Vola Record)
***
    05 RMTHED-VOLA-REC REDEFINES RMTHED-CLS-REC.
       10 REC-TYP-COD-RMTHED          PIC X.
       10 VOLA-UDN-IND-RMTHED         PIC X(1) .
       10 ADJ-VOL-RMTHED              PIC Z(2)9.9(2) .
       10 THEO-VALUE-RMTHED           PIC Z(4)9.9(6) .
       10 SHORT-OPT-THEO-RMTHED      PIC Z(4)9.9(6) .

***
* RECORD TYPE = "*" (EOF Record)
***
    05 RMTHED-FILE-INFO-REC REDEFINES RMTHED-CLS-REC.
       10 FILE-END-MARK-RMTHED        PIC X(5) .
       10 FILLER                      PIC X.
       10 FILE-COUNTER-RMTHED         PIC 9(8) .
       10 FILLER                      PIC X.
       10 CURR-BUS-DAY-RMTHED         PIC 9(8) .
       10 FILLER                      PIC X.
       10 DESCRIPTION-RMTHED          PIC X(20) .

```

## 2.5.2 Record layout of the file FPTHND

```

01 RMICTHND-WS-REC.
   05 RMICTHND-CLS-REC.
      10 REC-TYP-COD-RMICTHND        PIC X.
      10 FILLER                     PIC X(52) .

***
* RECORD TYPE = "M" (Margin class Record)
***
    05 RMICTHND-MGN-CLS-REC REDEFINES RMICTHND-CLS-REC.

```

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```

10 REC-TYP-COD-RMICTHND          PIC X.
10 MGN-CLS-COD-RMICTHND          PIC X(5).
10 MGN-EXPI-YR-DAT-RMICTHND      PIC 9(2).
10 MGN-EXPI-MTH-DAT-RMICTHND     PIC 9(2).
10 INTP-REF-PRC-RMICTHND         PIC X(10).
10 MGN-INTERVAL-RMICTHND         PIC X(11).
10 CURR-DCML-SHFT-GRP-RMICTHND.
15 CURR-TYP-COD-RMICTHND         PIC X(3).
15 DCML-SHFT-NO-RMICTHND         PIC 9(1).

***
* RECORD TYPE = "A" (Array Record)
***
05 RMICTHND-ARRAY-REC REDEFINES RMICTHND-CLS-REC.
10 REC-TYP-COD-RMICTHND          PIC X.
10 RISK-ARRAY-INDEX-RMICTHND     PIC 9(2).
10 CALC-BUC-PRICE-RMICTHND       PIC X(9).
10 PRICE-UDN-IND-RMICTHND        PIC X(1).
10 STOCK-PRC-IND-RMICTHND        PIC X(1).

***
* RECORD TYPE = "P" (Product Record)
***
05 RMICTHND-PROD-REC REDEFINES RMICTHND-CLS-REC.
10 REC-TYP-COD-RMICTHND          PIC X.
10 PROD-ID-COD-RMICTHND          PIC X(4).
10 PROD-TIC-SIZE-RMICTHND        PIC X(7).
10 PROD-TIC-VAL-RMICTHND         PIC Z(3)9.9(4).
10 MGN-STYLE-FLG-RMICTHND        PIC X(1).
10 EXER-PRC-DECIMALS-RMICTHND    PIC 9(1).

***
* RECORD TYPE = "E" (Expiry Record)
***
05 RMICTHND-EXPIRY-REC REDEFINES RMICTHND-CLS-REC.
10 REC-TYP-COD-RMICTHND          PIC X.
10 SERI-CLAS-COD-RMICTHND        PIC X(1).
10 SERI-EXP-DAT-RMICTHND.
20 EXPI-YR-DAT-RMICTHND          PIC 9(2).
20 EXPI-MTH-DAT-RMICTHND         PIC 9(2).
10 INTR-RAT-PCT-RMICTHND         PIC -9(1).9(6).
10 YIELD-RAT-PCT-RMICTHND        PIC -9(1).9(6).
10 DAYS-TO-EXP-RMICTHND          PIC Z(4)9.

***
* RECORD TYPE = "S" (Series Record)
***
05 RMICTHND-SERIES-REC REDEFINES RMICTHND-CLS-REC.
10 REC-TYP-COD-RMICTHND          PIC X.
10 EXER-PRC-RMICTHND             PIC 9(6).
10 SERI-VERS-NO-RMICTHND         PIC 9(1).
10 UND-REF-PRC-RMICTHND          PIC X(10).
10 SERI-REF-PRC-RMICTHND         PIC X(10).
10 SECU-TRD-UNT-NO-RMICTHND      PIC Z(3)9.9(4).
10 SERI-STS-COD-RMICTHND         PIC X(1).
10 VOL-RMICTHND                  PIC Z(2)9.9(2).

***
* RECORD TYPE = "B" (Bucket Record)
***
05 RMICTHND-BUCKET-REC REDEFINES RMICTHND-CLS-REC.
10 REC-TYP-COD-RMICTHND          PIC X.
10 RISK-ARRAY-INDEX-RMICTHND     PIC 9(2).
10 CALC-UND-PRICE-RMICTHND       PIC X(9).
10 FORWARD-UND-PRICE-RMICTHND    PIC Z(4)9.9(6).

***
* RECORD TYPE = "V" (Volatility Record)
***

```

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```

05 RMICTHND-VOLA-REC REDEFINES RMICTHND-CLS-REC.
   10 REC-TYP-COD-RMICTHND          PIC X.
   10 VOLA-UDN-IND-RMICTHND         PIC X(1) .
   10 ADJ-VOL-RMICTHND              PIC Z(2)9.9(2) .
   10 THEO-VALUE-RMICTHND           PIC Z(4)9.9(6) .
   10 SHORT-OPT-THEO-RMICTHND       PIC Z(4)9.9(6) .

***
* RECORD TYPE = "*" (EOF Record)
***

05 RMICTHND-FILE-INFO-REC REDEFINES RMICTHND-CLS-REC.
   10 FILE-END-MARK-RMICTHND        PIC X(5) .
   10 FILLER                        PIC X.
   10 FILE-COUNTER-RMICTHND         PIC 9(8) .
   10 FILLER                        PIC X.
   10 CURR-BUS-DAY-RMICTHND         PIC 9(8) .
   10 FILLER                        PIC X.
   10 DESCRIPTION-RMICTHND          PIC X(29) .

```

**2.5.3 Field descriptions**

FPTHED	
Field	Description
REC-TYP-COD-RMTHED	This field contains the record type.
MGN-CLS-COD-RMTHED	This field contains the margin class code assigned by the exchange.
MGN-EXPI-YR-DAT-RMTHED	This field contains the expiration year of the options series or futures contract.
MGN-EXPI-MTH-DAT-RMTHED	This field contains the expiration month of the options series or futures contract.
INTP-REF-PRC-RMTHED	This field contains a reference price of the underlying for the interval product.  In an EOD file, it contains the last closing price of the underlying asset; if the interval product is a future with no underlying price, this field contains the settlement price of the spot month series. It has a decimal point with variable number of decimal places depending on the product.

**FPTHEd**

Field	Description
MGN-INTERVAL-RMTHED	<p>This field contains the margin interval. The value of this field is determined using the last closing price and historical volatility of the interval product. For products whose historical volatility is expressed as a percentage (for instance stock options), the margin interval is the historical volatility multiplied by the last closing price. For products with a historical volatility expressed in ticks (such as the Bund and DAX futures and their options), the margin interval is the historical volatility multiplied by the tick value. It has a decimal point with variable number of decimal places depending on the product.</p>
CURR-TYP-COD-RMTHED	<p>This field contains the currency code of the underlying instrument.</p>
DCML-SHFT-NO-RMTHED	<p>This field contains one digit specifying a decimal given as a power of ten. It represents the factor by which a price has to be multiplied in order to get the real price.</p> <p>Example:            Decimal Shift: 0            Factor: <math>10^0 = 1</math> (for example, for EUR)            The amount "23.45" is then understood by the user in the associated currency as:  <math>23.45 \times 1 = 23.45</math> EUR</p>
RISK-ARRAY-INDEX-RMTHED	<p>This field contains the current index in the risk array; for each risk array this indicator starts with 1 and is increased up to the risk array size. Maximum is 29.</p>
CALC-BUC-PRICE-RMTHED	<p>This field contains the projected underlying price for the interval product. For each class there is one interval product which determines the margin interval and projected underlying values for all products in the class. This field has the same value as the CALC-UND-PRICE-RMTHED for products that are interval products, or have the same underlying as the interval product for their class. It has a decimal point with variable number of decimal places depending on the product.</p>

**FPTHEd**

Field	Description
PRICE-UND-IND-RMTHED	This field contains an indicator showing whether the projected underlying price is less than (downside), greater than (upside) or movement neutral to the closing price of the underlying. "D" – downside "U" – upside "N" – neutral
STOCK-PRC-IND-RMTHED	This field contains an indicator showing whether the theoretical price calculated relates to a minimum projected underlying price (2), to an in-between strike (3), to a maximum projected underlying price (1) or to zero price movement (0) used in pure volatility buckets.
PROD-ID-COD-RMTHED	This field contains the product ID.
PROD-TIC-SIZE-RMTHED	This field contains the tick size for the product. It has a decimal point with variable number of decimal places depending on the product.
PROD-TIC-VAL-RMTHED	This field contains the tick value for the product.
MGN-STYLE-FLG-RMTHED	This field contains a code to identify the margining style for the product. Valid values are: "F" – futures style "T" – traditional style
EXER-PRC-DECIMALS-RMTHED	This field indicates the number of decimals in the exercise price.
SERI-CLAS-COD-RMTHED	This field contains the class code for option series or a blank for futures contracts. Field values include: "C" – Call "P" – Put " " – Future
SERI-EXP-DAT-RMTHED	This field contains the date the option series or the futures contract expires.

**FPTHEd**

Field	Description
EXPI-YR-DAT-RMTHED	This field contains the expiration year of the options series or futures contract.
EXPI-MTH-DAT-RMTHED	This field contains the expiration month of the options series or futures contract.
INTR-RAT-PCT-RMTHED	Obsolete field. Currently always filled with 0.
YIELD-RAT-PCT-RMTHED	Obsolete field. Currently always filled with 0.
DAYS-TO-EXP-RMTHED	This field contains the number of days until the Final Settlement Day of the series or contract.
EXER-PRC-RMTHED	This field contains the price at which an option contract may be exercised. The field EXER-PRC-DECIMALS-RMTHED contains the number of decimal places to be used to format the value of this field. For future contracts it is zero.
SERI-VERS-NO-RMTHED	This field contains the version number assigned to the series at creation. The value is zero for all standard series not changed as a result of capital adjustment to the underlying instrument and for futures contracts. Valid values include: 0 – standard series version or futures contract 1 – adjusted series version from most recent capital adjustment 2 – adjusted series version from the second most recent capital adjustment 3 – adjusted series version from the third most recent capital adjustment
UND-REF-PRC-RMTHED	This field contains the underlying reference price. In an EOD file, it is the last closing price of the underlying asset; for futures with no underlying price, this field contains the settlement price of the appropriate series. It has a decimal point with variable number of decimal places depending on the product.

**FPTHEd**

<b>Field</b>	<b>Description</b>
SERI-REF-PRC-RMTHED	This field contains the series reference price (in EOD file, it is the last settlement price of the series). It has a decimal point with variable number of decimal places depending on the product.
SECU-TRD-UNT-NO-RMTHED	This field contains the quantity of the underlying instrument traded per contract.
SERI-STS-COD-RMTHED	This field contains a code to identify an options series/futures contract as active ("A") or expired ("E").
VOL-RMTHED	This field contains the implied volatility used for theoretical price calculations.
CALC-UND-PRICE-RMTHED	This field contains the projected underlying price used to calculate the theoretical value for this record. It has a decimal point with variable number of decimal places depending on the product.
FORWARD-UND-PRICE-RMTHED	This field contains the forward underlying price. Only applicable to options with theoretical underlying.
VOLA-UND-IND-RMTHED	This field indicates whether the implied volatility is in the up scenario (U), down scenario (D) or neutral scenario (N).
ADJ-VOL-RMTHED	This field contains the simulated implied volatility based on the VOLA-UDN-IND-RMTHED field, used for theoretical price calculations.

**FPTHEd**

Field	Description
THEO-VALUE-RMTHED	This field contains the theoretical value calculated for an active options/futures position for a given CALC-UND-PRICE-RMTHED and ADJ-VOL-RMTHED.
SHORT-OPT-THEO-RMTHED	<p>This field contains the short option adjustment (= [margin interval] × [out-of-the-money minimum percentage] + [settlement price for the series]).</p> <p>It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical.</p> <p>It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical.</p> <p>For futures, this field is set zero.</p> <p>Note: This field is only written if the theoretical price was replaced.</p>

The following descriptions apply to the last record only.

**FPTHEd**

Field	Description
FILE-END-MARK-RMTHED	This field marks the end of the file and contains the string "**EOF**".
FILE-COUNTER-RMTHED	This field contains the number of data records contained in the file, not including the last record.
CURR-BUS-DAY-RMTHED	This field contains the date of the business day in the format YYYYMMDD.
DESCRIPTION-RMTHED	This field contains a short description of the file content.

---

FPTHND is a copy of FPTHED, with the exception of 2 interest rate fields in the (E)xpiry section, which support both positive and negative values:

---

**FPTHND**

---

<b>Field</b>	<b>Description</b>
INTR-RAT-PCT-RMTHED	This field contains the security risk free interest rate used to calculate the theoretical value.
YIELD-RAT-PCT-RMTHED	This field contains the yield rate which is used for the calculation of theoretical prices of currency options.

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## 2.6 Theoretical Values: Equities – FPTHEE/FPTHNE

FPTHEE/FPTHNE contain theoretical values and parameters for equities required for the risk based margining of the day.

### 2.6.1 Record layout of the file FPTHEE:

```

01 RMTHEE-WS-REC.
05 KEY-SECU-RMTHEE.
    10 SECU-ISIN-RMTHEE PIC X(12)
05 DATA-GRP-RMTHEE.
    10 MGN-GRP-COD-RMTHEE PIC X(5)
05 DATA-CLS-RMTHEE.
    10 MGN-CLS-COD-RMTHEE PIC X(5)
    10 MGN-PAR-UP-RMTHEE PIC 9(3).9(8)
    10 MGN-PAR-DOWN-RMTHEE PIC 9(3).9(8)
    10 MGN-PAR-FLG-RMTHEE PIC X(1)
05 DATA-SECU-RMTHEE.
    10 SECU-STL-PRC-RMTHEE PIC 9(10).9(5)
    10 PRICE-TYPE-RMTHEE PIC 9(1)
    10 SECU-NEAR-STL-DATE-RMTHEE PIC 9(8)
05 DATA-CURR-RMTHEE.
    10 CURR-TYP-COD-RMTHEE PIC X(3)
    10 CURR-INTR-RATE-RMTHEE PIC 9(4).9(9)
    10 UP-ADPT-INTR-RATE-RMTHEE PIC 9(4).9(9)
    10 DWN-ADPT-INTR-RATE-RMTHEE PIC 9(4).9(9)

01 RMTHEE-FILE-INFO-REC REDEFINES RMTHEE-WS-REC. (last record)
05 FILE-END-MARK-RMTHEE PIC X(7).
05 FILLER PIC X.
05 FILE-COUNTER-RMTHEE PIC X(8).
05 CURR-BUS-DAY-RMTHEE PIC X(10).
05 FILLER PIC X.
05 DESCRIPTION-RMTHEE PIC X(90).

```

### 2.6.2 Record layout of the file FPTHNE

```

01 RMTHNE-WS-REC.
05 KEY-SECU-RMTHNE.
    10 SECU-ISIN-RMTHNE PIC X(12)
05 DATA-GRP-RMTHNE.
    10 MGN-GRP-COD-RMTHNE PIC X(5)
05 DATA-CLS-RMTHNE.
    10 MGN-CLS-COD-RMTHNE PIC X(5)
    10 MGN-PAR-UP-RMTHNE PIC 9(3).9(8)
    10 MGN-PAR-DOWN-RMTHNE PIC 9(3).9(8)
    10 MGN-PAR-FLG-RMTHNE PIC X(1)
05 DATA-SECU-RMTHNE.
    10 SECU-STL-PRC-RMTHNE PIC 9(10).9(5)
    10 PRICE-TYPE-RMTHNE PIC 9(1)
    10 SECU-NEAR-STL-DATE-RMTHNE PIC 9(8)
05 DATA-CURR-RMTHNE.
    10 CURR-TYP-COD-RMTHNE PIC X(3)
    10 CURR-INTR-RATE-RMTHNE PIC -9(3).9(9)
    10 UP-ADPT-INTR-RATE-RMTHNE PIC -9(3).9(9)
    10 DWN-ADPT-INTR-RATE-RMTHNE PIC -9(3).9(9)
01 RMTHNE-FILE-INFO-REC REDEFINES RMTHNE-WS-REC. (last record)
05 FILE-END-MARK-RMTHNE PIC X(7).
05 FILLER PIC X.
05 FILE-COUNTER-RMTHNE PIC X(8).
05 CURR-BUS-DAY-RMTHNE PIC X(10).
05 FILLER PIC X.
05 DESCRIPTION-RMTHNE PIC X(90).

```

## 2.6.3

## Field descriptions

## FPTHEE

Field	Description
SECU-ISIN-RMTHEE	ISIN of the security for which the information is shown
MGN-GRP-COD-RMTHEE	Margin group code
MGN-CLS-COD-RMTHEE	Margin class code. Identification of the margin class
MGN-PAR-UP-RMTHEE	Margin Parameter – upside direction
MGN-PAR-DOWN-RMTHEE	Margin Parameter – downside direction
MGN-PAR-FLG-RMTHEE	Indicator, if the margin parameter is given in absolute (A) or percentage (P)
SECU-STL-PRC-RMTHEE	Settlement price of the security
PRICE-TYPE-RMTHEE	Type of price in field SECU-STL-PRC-RMTHEE Valid values: 0 – settlement 1 – maximal 2 – minimal 3 – any between max. and min
SECU-NEAR-STL-DATE-RMTHEE	Nearest settlement date (Actual date plus standard settlement period for a security)
CURR-TYP-COD-RMTHEE	Currency Type
CURR-INTR-RATE-RMTHEE	Obsolete field. Currently always filled with 0.
UP-ADPT-INTR-RATE-RMTHEE	Obsolete field. Currently always filled with 0.
DWN-ADPT-INTR-RATE-RMTHEE	Obsolete field. Currently always filled with 0.

The following descriptions apply to the last record only.

<b>FPTHEE</b>	
<b>Field</b>	<b>Description</b>
FILE-END-MARK-RMTHEE	This field marks the end of the file and contains the string "* EOF *"
FILE-COUNTER-RMTHEE	This field contains the number of data records contained in the file with leading spaces, <i>not</i> including the last record
CURR-BUS-DAY-RMTHEE	This field contains the date of the business day in the format "YYYY-MM-DD"
DESCRIPTION-RMTHEE	This field contains a short description of the file contents

FPTHNE is a copy of FPTHEE, with the exception of the following 3 interest rate fields, which support both positive and negative values:

<b>FPTHNE</b>	
<b>Field</b>	<b>Description</b>
CURR-INTR-RATE-RMTHEE	Market Cash Interest Rate of the Currency
UP-ADPT-INTR-RATE-RMTHEE	Currency Risk Adapted Interest Rate – Up
DWN-ADPT-INTR-RATE-RMTHEE	Currency Risk Adapted Interest Rate – Down.

## 2.7 Theoretical Values: Flexible Options Contracts – FPTHEF/FPTHNF

FPTHEF/FPTHNF contain derivative theoretical prices used for margining of flexible contracts.

### 2.7.1 Record layout of the file FPTHEF

```

01  RMTHEF-WS-REC.
    10  MGN-CLS-COD-RMTHEF          PIC  X(5) .
    10  SERI-GRP-ID-COD-RMTHEF.
    15  PROD-ID-COD-RMTHEF          PIC  X(4) .
    15  SERI-CLAS-COD-RMTHEF        PIC  X(1) .
    15  SERI-EXP-DAT-RMTHEF.
    20  EXPI-YR-DAT-RMTHEF          PIC  9(2) .
    20  EXPI-MTH-DAT-RMTHEF         PIC  9(2) .
    20  EXPI-DAY-DAT-RMTHEF         PIC  9(2) .
    15  EXER-PRC-RMTHEF              PIC  9(5) .9(4) .
    15  EXER-STYLE-FLG-RMTHEF       PIC  X(1) .
    15  SERI-VERS-NO-RMTHEF          PIC  9(1) .
    10  FLEX-PRODUCT-ID-RMTHEF       PIC  X(4) .
    10  RISK-ARRAY-INDEX-RMTHEF      PIC  9(2) .
    10  CALC-BUC-PRICE-RMTHEF        PIC  X(9) .
    10  CALC-UND-PRICE-RMTHEF        PIC  X(9) .
    10  FORWARD-UND-PRICE-RMTHEF     PIC  Z(4)9.9(6) .
    10  UD-IND-RMTHEF                PIC  X(1) .
    10  STOCK-PRC-IND-RMTHEF          PIC  X(1) .
    10  EA-THEO-VALUE-RMTHEF         PIC  X(9) .
    10  ADJ-VOL-U-RMTHEF              PIC  Z(2)9.9(2) .
    10  THEO-VALUE-U-RMTHEF           PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-U-RMTHEF      PIC  Z(4)9.9(6) .
    10  ADJ-VOL-N-RMTHEF              PIC  Z(2)9.9(2) .
    10  THEO-VALUE-N-RMTHEF           PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-N-RMTHEF      PIC  Z(4)9.9(6) .
    10  ADJ-VOL-D-RMTHEF              PIC  Z(2)9.9(2) .
    10  THEO-VALUE-D-RMTHEF           PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-D-RMTHEF      PIC  Z(4)9.9(6) .
    10  UND-REF-PRC-RMTHEF            PIC  X(10) .
    10  INTP-REF-PRC-RMTHEF           PIC  X(10) .
    10  SERI-REF-PRC-RMTHEF           PIC  X(10) .
    10  MGN-INTERVAL-RMTHEF          PIC  X(11) .
    10  VOL-RMTHEF                    PIC  Z(2)9.9(2) .
    10  INTR-RAT-PCT-RMTHEF           PIC  9(1) .9(6) .
    10  YIELD-RAT-PCT-RMTHEF          PIC  9(1) .9(6) .
    10  SECU-TRD-UNT-NO-RMTHEF       PIC  Z(3)9.9(4) .
    10  PROD-TIC-SIZE-RMTHEF          PIC  X(7) .
    10  PROD-TIC-VAL-RMTHEF           PIC  Z(3)9.9(4) .
    10  SERI-STS-COD-RMTHEF           PIC  X(1) .
    10  MGN-STYLE-FLG-RMTHEF         PIC  X(1) .
    10  CURR-DCML-SHFT-GRP-RMTHEF.
    15  CURR-TYP-COD-RMTHEF          PIC  X(3) .
    15  DCML-SHFT-NO-RMTHEF          PIC  9(1) .
    10  DAYS-TO-EXP-RMTHEF           PIC  Z(4)9.
01  RMTHEF-FILE-INFO-REC REDEFINES RMTHEF-WS-REC.
    05  FILE-END-MARK-RMTHEF          PIC  X(5) .
    05  FILLER                          PIC  X.
    05  FILE-COUNTER-RMTHEF           PIC  9(8) .
    05  FILLER                          PIC  X.
    05  CURR-BUS-DAY-RMTHEF           PIC  9(8) .
    05  FILLER                          PIC  X.
    05  DESCRIPTION-RMTHEF            PIC  X(92) .
    05  FILLER                          PIC  X(147) .

```

## Eurex Member Interface Specifications - File Interface

As of Apr. 17, 2015

## Eurex File Interface

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## 2.7.2

## Record layout of the file FPTHNF:

```

01  RMICHTNF-WS-REC.
    10  MGN-CLS-COD-RMICHTNF          PIC  X(5) .
    10  SERI-GRP-ID-COD-RMICHTNF.
        15  PROD-ID-COD-RMICHTNF      PIC  X(4) .
        15  SERI-CLAS-COD-RMICHTNF    PIC  X(1) .
        15  SERI-EXP-DAT-RMICHTNF.
            20  EXPI-YR-DAT-RMICHTNF   PIC  9(2) .
            20  EXPI-MTH-DAT-RMICHTNF  PIC  9(2) .
            20  EXPI-DAY-DAT-RMICHTNF  PIC  9(2) .
        15  EXER-PRC-RMICHTNF         PIC  9(5) .9(4) .
        15  EXER-STYLE-FLG-RMICHTNF   PIC  X(1) .
        15  SERI-VERS-NO-RMICHTNF     PIC  9(1) .
    10  FLEX-PRODUCT-ID-RMICHTNF      PIC  X(4) .
    10  RISK-ARRAY-INDEX-RMICHTNF     PIC  9(2) .
    10  CALC-BUC-PRICE-RMICHTNF       PIC  X(9) .
    10  CALC-UND-PRICE-RMICHTNF       PIC  X(9) .
    10  FORWARD-UND-PRICE-RMICHTNF    PIC  Z(4)9.9(6) .
    10  UD-IND-RMICHTNF               PIC  X(1) .
    10  STOCK-PRC-IND-RMICHTNF        PIC  X(1) .
    10  EA-THEO-VALUE-RMICHTNF        PIC  X(9) .
    10  ADJ-VOL-U-RMICHTNF            PIC  Z(2)9.9(2) .
    10  THEO-VALUE-U-RMICHTNF         PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-U-RMICHTNF     PIC  Z(4)9.9(6) .
    10  ADJ-VOL-N-RMICHTNF            PIC  Z(2)9.9(2) .
    10  THEO-VALUE-N-RMICHTNF         PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-N-RMICHTNF     PIC  Z(4)9.9(6) .
    10  ADJ-VOL-D-RMICHTNF            PIC  Z(2)9.9(2) .
    10  THEO-VALUE-D-RMICHTNF         PIC  Z(4)9.9(6) .
    10  SHORT-OPT-THEO-D-RMICHTNF     PIC  Z(4)9.9(6) .
    10  UND-REF-PRC-RMICHTNF          PIC  X(10) .
    10  INTP-REF-PRC-RMICHTNF         PIC  X(10) .
    10  SERI-REF-PRC-RMICHTNF         PIC  X(10) .
    10  MGN-INTERVAL-RMICHTNF         PIC  X(11) .
    10  VOL-RMICHTNF                  PIC  Z(2)9.9(2) .
    10  INTR-RAT-PCT-RMICHTNF         PIC  -9(1) .9(6) .
    10  YIELD-RAT-PCT-RMICHTNF        PIC  -9(1) .9(6) .
    10  SECU-TRD-UNT-NO-RMICHTNF      PIC  Z(3)9.9(4) .
    10  PROD-TIC-SIZE-RMICHTNF        PIC  X(7) .
    10  PROD-TIC-VAL-RMICHTNF         PIC  Z(3)9.9(4) .
    10  SERI-STS-COD-RMICHTNF         PIC  X(1) .
    10  MGN-STYLE-FLG-RMICHTNF       PIC  X(1) .
    10  CURR-DCML-SHFT-GRP-RMICHTNF.
        15  CURR-TYP-COD-RMICHTNF     PIC  X(3) .
        15  DCML-SHFT-NO-RMICHTNF     PIC  9(1) .
    10  DAYS-TO-EXP-RMICHTNF          PIC  Z(4)9.
01  RMICHTNF-FILE-INFO-REC REDEFINES RMICHTNF-WS-REC.
    05  FILE-END-MARK-RMICHTNF        PIC  X(5) .
    05  FILLER                        PIC  X.
    05  FILE-COUNTER-RMICHTNF         PIC  9(8) .
    05  FILLER                        PIC  X.
    05  CURR-BUS-DAY-RMICHTNF         PIC  9(8) .
    05  FILLER                        PIC  X.
    05  DESCRIPTION-RMICHTNF          PIC  X(92) .
    05  FILLER                        PIC  X(147) .

```

## 2.7.3

## Field descriptions

## FPTHEF

Field	Description
MGN-CLS-COD-RMTHEF	This field contains the margin class code assigned by the exchange.
PROD-ID-COD-RMTHEF	This field contains the product ID.
SERI-CLAS-COD-RMTHEF	This field contains the class code for option series or a blank for futures contracts. Field values include: "C" - Call "P" - Put " " - Future
EXPI-YR-DAT-RMTHEF	This field contains the year when the flexible contract expires.
EXPI-MTH-DAT-RMTHEF	This field contains the month when the flexible contract expires.
EXPI-DAY-DAT-RMTHEF	This field contains the day when the flexible contract expires.
EXER-PRC-RMTHEF	This field contains the price at which an option contract may be exercised. This field has the format 99999.9999.
EXER-STYLE-FLG-RMTHEF	This field contains the exercise style of the flexible options contract. It has either the value 'A' for American style or 'E' for European style.

**FPTHEF**

Field	Description
SERI-VERS-NO-RMTHEF	<p>This field contains the version number assigned to the series on creation. The value is zero for all standard series not changed as a result of capital adjustment to the underlying instrument and for futures contracts. Valid values include:</p> <p>0 - standard series version or futures contract  1 - adjusted series version from most recent capital adjustment  2 - adjusted series version from the last two capital adjustments  3 - adjusted series version from the last three capital adjustments  ...  9 – adjusted series version from the last ninth capital adjustments</p>
FLEX-PRODUCT-ID-RMTHEF	<p>This field contains the ID of the product for which flexible series were created.</p>
RISK-ARRAY-INDEX-RMTHEF	<p>This field contains the current index in the risk array; for each risk array this indicator starts with 1 and is increased up to the risk array size. Maximum is 29.</p>
CALC-BUC-PRICE-RMTHEF	<p>This field contains the projected underlying price for the interval product. For each class there is one interval product which determines the margin interval and projected underlying values for all products in the class. This field has the same value as the CALC-UND-PRICE-RMTHEF for products that are themselves interval products, or have the same underlying as the interval product for their class.</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>

**FPTHEF**

Field	Description
CALC-UND-PRICE-RMTHEF	<p>This field contains the projected underlying price used to calculate the theoretical value for this record.</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
FORWARD-UND-PRICE-RMTHEF	This entry contains the forward underlying price.
UD-IND-RMTHEF	<p>This field contains an indicator showing whether the projected underlying price is less than (downside), greater than (upside) or movement neutral to the closing price of the underlying.</p> <p>"D" - downside  "U" - upside  "N" - neutral</p>
STOCK-PRC-IND-RMTHEF	This field contains an indicator showing whether the theoretical price calculated relates to a minimum projected underlying price (2), to an in-between strike (3) or to a maximum projected underlying price (1).
EA-THEO-VALUE-RMTHEF	<p>This field contains the theoretical value calculated for an exercised/assigned or notified/allocated flexible contract for a given CALC-UND-PRICE-RMTHEF.</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
SHORT-OPT-THEO-RMTHEF	This field contains the value short option adjustment. It is calculated by multiplying the margin interval by the out-of-the-money minimum percentage and adding to it the settlement price for the series. It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical. It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical.

**FPTHEF**

Field	Description
UND-REF-PRC-RMTHEF	<p>This field contains the underlying reference price (in EOD file, it is the last closing price of the underlying asset or for futures with no underlying price, this field contains the settlement price of the appropriate series).</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
INTP-REF-PRC-RMTHEF	<p>This field contains a reference price of the underlying for the interval product (in EOD file, it is the last closing price of the underlying asset or if the interval product is a future with no underlying price, this field contains the settlement price of the spot month series).</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
SERI-REF-PRC-RMTHEF	<p>This field contains the series reference price (in EOD file, it is the last settlement price of the series).</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
MGN-INTERVAL-RMTHEF	<p>The value of this field is determined using the last closing price and historical volatility of the interval product. For products, whose historical volatility is expressed as a percentage (for instance stock options), the margin interval is the historical volatility multiplied by the last closing price. For products with a historical volatility expressed in ticks (such as the Bund and DAX futures and their options), the margin interval is the historical volatility multiplied by the tick value.</p> <p>This field contains a decimal point with a variable number of decimal places depending on the product.</p>
VOL-RMTHEF	<p>This field contains the volatility used for theoretical price calculations.</p>

**FPTHEF**

<b>Field</b>	<b>Description</b>
ADJ-VOL-U-RMTHEF	This field contains the simulated implied volatility (up scenario) used for theoretical price calculations.
THEO-VALUE-U-RMTHEF	This field contains the theoretical value calculated for an active options/future position for a given CALC-UND-PRICE-RMTHEF and ADJ-U-VOL-RMTHEF
SHORT-OPT-THEO-U-RMTHEF	This field contains a value also called short option adjustment. It is calculated by multiplying the margin interval with the out-of-the-money minimum percentage and adding the settlement price for the series to this. It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical. It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical. For futures this field is set zero.
ADJ-VOL-N-RMTHEF	This field contains the simulated implied volatility (neutral scenario) used for theoretical price calculations.
THEO-VALUE-N-RMTHEF	This field contains the theoretical value calculated for an active options/future position for a given CALC-UND-PRICE-RMTHEF and ADJ-N-VOL-RMTHEF.
SHORT-OPT-THEO-N-RMTHEF	This field contains a value also called short option adjustment. It is calculated by multiplying the margin interval with the out-of-the-money minimum percentage and adding the settlement price for the series to this. It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical. It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical. For futures this field is set zero.
ADJ-VOL-D-RMTHEF	This field contains the simulated implied volatility (down scenario) used for theoretical price calculations.

**FPTHEF**

Field	Description
THEO-VALUE-D-RMTHEF	This field contains the theoretical value calculated for an active options/future position for a given CALC-UND-PRICE-RMTHEF and ADJ-D-VOL-RMTHEF.
SHORT-OPT-THEO-D-RMTHEF	This field contains a value also called short option adjustment. It is calculated by multiplying the margin interval with the out-of-the-money minimum percentage and adding the settlement price for the series to this. It replaces the maximum upside theoretical option price for a short call option if it is greater than that theoretical. It replaces the maximum downside theoretical option price for a short put option if it is greater than that theoretical. For futures this field is set zero.
INTR-RAT-PCT-RMTHEF	Obsolete field. Currently always filled with 0.
YIELD-RAT-PCT-RMTHEF	Obsolete field. Currently always filled with 0.
SECU-TRD-UNT-NO-RMTHEF	This field contains the quantity of the underlying instrument traded per contract.
PROD-TIC-SIZE-RMTHEF	This field contains the tick size for the product. This field contains a decimal point with a variable number of decimal places depending on the product.
PROD-TIC-VAL-RMTHEF	This field contains the tick value for the product.
SERI-STS-COD-RMTHEF	This field contains a code to identify an option series/future contract as active ("A") or expired ("E").
MGN-STYLE-FLG-RMTHEF	This field contains a code to identify the margining style for the product. Valid values are: "F" - futures style "T" - traditional style

**FPTHEF**

Field	Description
CURR-TYP-COD-RMTHEF	This field contains the currency code of the underlying instrument.
DCML-SHFT-NO-RMTHEF	This field contains one digit specifying a decimal given as a power of ten. It represents the factor by which a price has to be multiplied in order to get the „real“ price. Example: Decimal Shift: 0 Factor: $10^0 = 1$ (e.g. for EUR) The amount “23.45” is then understood by the user in the associated currency as: $23.45 \times 1 = 23.45$ EUR
DAYS-TO-EXP-RMTHEF	This field contains the number of days until expiration of the contract.

The following descriptions apply to the last record of FPTHEF only.

**FPTHEF**

Field	Description
FILE-END-MARK-RMTHEF	This field marks the end of the file and contains the string “*EOF*”.
FILE-COUNTER-RMTHEF	This field contains the number of data records contained in the file, <i>not</i> including the last record.
CURR-BUS-DAY-RMTHEF	This field contains the date of the business day in the format YYYYMMDD.
DESCRIPTION-RMTHEF	This field contains a short description of the file content.

---

FPTHNF is a copy of FPTHEF, with the exception of the following 2 interest rate fields, which support both positive and negative values:

**FPTHNF**

<b>Field</b>	<b>Description</b>
INTR-RAT-PCT-RMTHEF	This field contains the security risk free interest rate used to calculate the theoretical value.
YIELD-RAT-PCT-RMTHEF	This field contains the yield rate which is used for the calculation of theoretical prices of currency options.

## 2.8 Theoretical Values: Unconditional Subscription Rights – FPTHEs/FPTHNS

FPTHEs/FPTHNS contain theoretical values and parameters for subscription rights on equities required for the risk based margining of the day.

### 2.8.1 Record layout of the file FPTHEs

```

01 RMTHEs-WS-REC.
05 KEY-SECU-RMTHEs.
    10 SECU-ISIN-RMTHEs                PIC X(12)
05 DATA-SECU-RMTHEs
    10 UNDER-ISIN-RMTHEs                PIC X(12)
    10 SECU-NEAR-STL-DATE-RMTHEs        PIC 9(8)
05 DATA-CURR-RMTHEs.
    10 CURR-TYP-COD-RMTHEs              PIC X(3)
    10 CURR-INTR-RATE-RMTHEs            PIC 9(4).9(9)
05 DATA-SECU-2-RMTHEs.
    10 SECU-RATIO-RMTHEs                PIC 9(10).9(8)
    10 SECU-EXER-RMTHEs                 PIC 9(10).9(5)
    10 SECU-BEG-DATE-RMTHEs             PIC 9(8)
    10 SECU-END-DATE-RMTHEs             PIC 9(8)
    10 SECU-VOLA-RMTHEs                 PIC 9(10).9(8)
    10 SECU-STL-PRC-RMTHEs              PIC 9(10).9(5)
    10 UNDER-PRC-RMTHEs                 PIC 9(10).9(5)
    10 PRICE-TYPE-RMTHEs                PIC 9(1)

01 RMTHEs-FILE-INFO-REC REDEFINES RMTHEs-WS-REC. (last record)
05 FILE-END-MARK-RMTHEs                 PIC X(7).
05 FILLER                               PIC X.
05 FILE-COUNTER-RMTHEs                  PIC X(8).
05 CURR-BUS-DAY-RMTHEs                  PIC X(10).
05 FILLER                               PIC X.
05 DESCRIPTION-RMTHEs                   PIC X(92).
05 FILLER                               PIC X(33).

```

### 2.8.2 Record layout of the file FPTHNS

```

01 RMTHNS-WS-REC.
05 KEY-SECU-RMTHNS.
    10 SECU-ISIN-RMTHNS                PIC X(12)
05 DATA-SECU-RMTHNS
    10 UNDER-ISIN-RMTHNS                PIC X(12)
    10 SECU-NEAR-STL-DATE-RMTHNS        PIC 9(8)
05 DATA-CURR-RMTHNS.
    10 CURR-TYP-COD-RMTHNS              PIC X(3)
    10 CURR-INTR-RATE-RMTHNS            PIC -9(3).9(9)
05 DATA-SECU-2-RMTHNS.
    10 SECU-RATIO-RMTHNS                PIC 9(10).9(8)
    10 SECU-EXER-RMTHNS                 PIC 9(10).9(5)
    10 SECU-BEG-DATE-RMTHNS             PIC 9(8)
    10 SECU-END-DATE-RMTHNS             PIC 9(8)
    10 SECU-VOLA-RMTHNS                 PIC 9(10).9(8)
    10 SECU-STL-PRC-RMTHNS              PIC 9(10).9(5)
    10 UNDER-PRC-RMTHNS                 PIC 9(10).9(5)
    10 PRICE-TYPE-RMTHNS                PIC 9(1)
01 RMTHNS-FILE-INFO-REC REDEFINES RMTHNS-WS-REC. (last record)
05 FILE-END-MARK-RMTHNS                 PIC X(7).
05 FILLER                               PIC X.
05 FILE-COUNTER-RMTHNS                  PIC X(8).
05 CURR-BUS-DAY-RMTHNS                  PIC X(10).
05 FILLER                               PIC X.
05 DESCRIPTION-RMTHNS                   PIC X(92).
05 FILLER                               PIC X(33).

```

## 2.8.3

## Field descriptions

## FPTHES

Field	Description
SECU-ISIN-RMTHES	ISIN of the subscription right for which the information is shown
UNDER-ISIN-RMTHES	ISIN of the underlying for subscriptions right
SECU-NEAR-STL-DATE-RMTHES	Nearest settlement date (Actual date plus standard settlement period for a security)
CURR-TYP-COD-RMTHES	Currency
CURR-INTR-RATE-RMTHES	Obsolete field. Currently always filled with 0.
SECU-RATIO-RMTHES	Ratio of the subscription right
SECU-EXER-PRC-RMTHES	Exercise price of the subscription right
SECU-BEG-DATE-RMTHES	Beginning date of subscription period of the subscription right
SECU-END-DATE-RMTHES	Ending date of subscription period of the subscription right
SECU-VOLA-RMTHES	Volatility used for risk based margining
SECU-STL-PRC-RMTHES	Settlement price of the subscription right
UNDER-PRC-RMTHES	Settlement price of the underlying security
PRICE-TYPE-RMTHES	Type of price. Valid values are: 0 – settlement 1 – maximal 2 – minimal 3 – any between max. and min

The following descriptions apply to the last record of FPTHES only.

FPTHES	
Field	Description
FILE-END-MARK-RMTHES	This field marks the end of the file and contains the string "** EOF **".
FILE-COUNTER-RMTHES	This field contains the number of data records contained in the file with leading spaces, <i>not</i> including the last record.
CURR-BUS-DAY-RMTHES	This field contains the date of the business day in the format "YYYY-MM-DD".
DESCRIPTION-RMTHES	This field contains a short description of the file contents.

FPTHNS is a copy of FPTHES, with the exception of the following interest rate field, which supports both positive and negative values:

FPTHNS	
Field	Description
CURR-INTR-RATE-RMTHNS	Interest rate of the currency.

## 2.9 Securities Margin Class and Group Information File – FPMGBP

This file contains general data for securities (bonds, equities and subscription rights) margining and serves as a margin class and group mapping information for the securities. This file is only provided for Eurex.

### 2.9.1 Record layout of the file FPMGBP

```

01 RMMGBP-WS-REC
05 DATA-GRP-RMMGBP
   10 MGN-GRP-COD-RMMGBP          PIC X(5) .
   10 GRP-OFF-SET-RMMGBP         PIC -9(3) .
05 DATA-CLS-RMMGBP
   10 MGN-CLS-COD-RMMGBP        PIC X(5) .
05 SECU-ISIN-RMMGBP             PIC X(12) .
05 DATA-VOL-RMMGBP
   10 MGN-PAR-UP-RMMGBP         PIC 9(3) .9(3) .
   10 MGN-PAR-DOWN-RMMGBP      PIC 9(3) .9(3) .
   10 MGN-PAR-FLG-RMMGBP       PIC X
05 DATA-CURR-RMMGBP
   10 CURR-TYP-COD-RMMGBP      PIC X(3) .
   10 DCML-SHFT-NO-RMMGBP     PIC 9(1)
   10 FORX-EXC-RAT-RMMGBP     PIC 9(3) .9(9) .
05 DATA-BOND-RMMGBP
   10 STD-STL-PERIOD-RMMGBP    PIC 9(3) .

01 RMMGBP-FILE-INFO-REC REDEFINES RMMGBP-WS-REC.      (last record)
05 FILE-END-MARK-RMMGBP      PIC X(5) .
05 FILLER                    PIC X.
05 FILE-COUNTER-RMMGBP      PIC 9(8) .
05 FILLER                    PIC X.
05 CURR-BUS-DAY-RMMGBP     PIC 9(8) .
05 FILLER                    PIC X.
05 DESCRIPTION-RMMGBP      PIC X(30) .

```

## 2.9.2

## Field descriptions

FPMGBP	
Field	Description
MGN-GRP-COD-RMMGBP	Margin group code.
GRP-OFF-SET-RMMGBP	Offset factor.
MGN-CLS-COD-RMMGBP	Margin class code.
SECU-ISIN-RMMGBP	ISIN of the security.
MGN-PAR-UP-RMMGBP	Margin parameter – upside direction.
MGN-PAR-DOWN-RMMGBP	Margin parameter – downside direction.
MGN-PAR-FLG-RMMGBP	Indicator, for the value of the margin parameter. Valid values: “A” – absolute “P” – percentage
CURR-TYP-COD-RMMGBP	Currency code.
DCML-SHFT-NO-RMMGBP	Decimal shift for currency.
FORX-EXC-RAT-RMMGBP	Exchange rate.
DATA-BOND-RMMGBP	Bond parameters.
STD-STL-PERIOD-RMMGBP	Standard settlement period in days per bond.

The following descriptions apply to the last record of FPMGBP only.

FPMGBP	
Field	Description
FILE-END-MARK-RMMGBP	This field marks the end of the file and contains the string “*EOF*”.

---

**FPMGBP**

---

<b>Field</b>	<b>Description</b>
FILE-COUNTER-RMMGBP	This field contains the number of data records contained in the file, <i>not</i> including the last record.
CURR-BUS-DAY-RMMGBP	This field contains the date of the business day in the format YYYYMMDD.
DESCRIPTION-RMMGBP	This field contains a short description of the file content.

## 2.10 Margin Group Parameters – FPPARM

This file contains information about different margin rates and historical volatilities for derivatives margin groups and classes.

### 2.10.1 Record layout of the file FPPARM

```

01 RMPARM-WS-REC.
05 DATA-GRP-RMPARM.
10 MGN-GRP-COD-RMPARM PIC X(5).
10 GRP-OFF-SET-RMPARM PIC -9(3).
05 DATA-CLS-RMPARM.
10 MGN-CLS-COD-RMPARM PIC X(5).
10 CURR-TYP-COD-RMPARM PIC X(3).
10 BCK-MTH-SPD-RAT-RMPARM PIC 9(7).
10 SPT-MTH-SPD-RAT-RMPARM PIC 9(7).
10 OOM-MIN-RAT-AMT-RMPARM PIC 9.9(2).
10 MATURITY-SWITCH-RMPARM PIC X.
10 EXP-MONTH-FACTOR-RMPARM PIC 9(3).9(3).
05 SECU-ID-COD-RMPARM PIC X(4).
05 DATA-VOL-RMPARM.
10 INTP-SECU-ID-COD-RMPARM PIC X(4).
10 HIST-VOL-RMPARM PIC 9(4).9(3).
10 HIST-VOL-PCT-ABS-RMPARM PIC X.
05 FILLER PIC X(4).
01 RMPARM-FILE-INFO-REC REDEFINES RMPARM-WS-REC.
05 FILE-END-MARK-RMPARM PIC X(5).
05 FILLER PIC X.
05 FILE-COUNTER-RMPARM PIC 9(8).
05 FILLER PIC X.
05 CURR-BUS-DAY-RMPARM PIC 9(8).
05 FILLER PIC X.
05 DESCRIPTION-RMPARM PIC X(40).

```

## 2.10.2 Field descriptions

### FPPARM

Field	Description
MGN-GRP-COD-RMPARM	This field contains the margin group code assigned by the exchange.
GRP-OFF-SET-RMPARM	This field contains the value of the margin group offset
MGN-CLS-COD-RMPARM	This field contains the margin class code assigned by the exchange.
CURR-TYP-COD-RMPARM	This field contains the currency code of the margin class.
BCK-MTH-SPD-RAT-RMPARM	This field contains value of the back month spread rate.
SPT-MTH-SPD-RAT-RMPARM	This field contains value of the spot month spread rate.
OOM-MIN-RAT-AMT-RMPARM	This field contains value of the out-of-the-money minimum rate.
MATURITY-SWITCH-RMPARM	Indicates if maturity dependent margining is enabled or disabled. "Y" = enabled. "N" = disabled.
EXP-MONTH-FACTOR-RMPARM	This field contains the value of the expiry month factor.
SECU-ID-COD-RMPARM	This field contains the security ID code
INTP-SECU-ID-COD-RMPARM	Interval product ID. Used for derivatives to determine the risk array. Empty for cash market margin classes.
HIST-VOL-RMPARM	This field contains the historical volatility.
HIST-VOL-PCT-ABS-RMPARM	This field contains the historical volatility, absolute or in percentage.

---

The following descriptions apply to the last record of FPPARM only.

<b>FPPARM</b>	
<b>Field</b>	<b>Description</b>
FILE-END-MARK-RMPARM	This field marks the end of the file and contains the string “*EOF*”.
FILE-COUNTER-RMPARM	This field contains the number of data records contained in the file, <i>not</i> including the last record.
CURR-BUS-DAY-RMPARM	This field contains the date of the business day in the format YYYYMMDD.
DESCRIPTION-RMPARM	This field contains a short description of the file content.

## 2.11 Maturity Factors – FPPARA

This file contains all maturity factors configured for margin classes with enabled maturity dependent margining.

The file is transferred with the same periodicity and to the same locations as the FPPARM file.

FPPARA may not contain maturity factors for all series, since new series might be created during EOD processing.

### 2.11.1 Record layout of the file FPPARA

```

01 RMPARA-WS-REC.
05 DATA-MATF-RMPARA.
    10 MGN-CLS-COD-RMPARA          PIC X(5) .
    10 EXPI-YR-DAT-RMPARA         PIC 9(2) .
    10 EXPI-MTH-DAT-RMPARA        PIC 9(2) .
    10 MATURITY-FACTOR-RMPARA     PIC Z9.9(2) .
05 FILLER                        PIC X(51) .
01 RMPARA-FILE-INFO-REC REDEFINES RMPARA-WS-REC.
05 FILE-END-MARK-RMPARA          PIC X(5) .
05 FILLER                        PIC X .
05 FILE-COUNTER-RMPARA          PIC 9(8) .
05 FILLER                        PIC X .
05 CURR-BUS-DAY-RMPARA          PIC 9(8) .
05 FILLER                        PIC X .
05 DESCRIPTION-RMPARA           PIC X(41) .

```

### 2.11.2 Field descriptions

#### FPPARA

Field	Description
MGN-CLS-COD-RMPARA	This field contains the margin class code assigned by the exchange.
EXPI-YR-DAT-RMPARA	This field contains the expiration year of the option series or futures contract.
EXPI-MTH-DAT-RMPARA	This field contains the expiration month of the options series or futures contract.
MATURITY-FACTOR-RMPARA	This field contains the value of the maturity factor for a particular combination of expiration month, expiration year and margin class.

---

The following descriptions apply to the last record of FPPARA only.

<b>FPPARA</b>	
<b>Field</b>	<b>Description</b>
FILE-END-MARK-RMPARA	This field marks the end of the file and contains the string “*EOF*”.
FILE-COUNTER-RMPARA	This field contains the number of data records contained in the file, <i>not</i> including the last record.
CURR-BUS-DAY-RMPARA	This field contains the date of the business day in the format YYYYMMDD.
DESCRIPTION-RMPARA	This field contains a short description of the file content.

## 2.12 Haircut and Adjusted Exchange Rate – FPHCPA

This file contains the currency haircut parameters and the adjusted exchange rates used for margining and collateral evaluation.

### 2.12.1 Record layout of the file FPHCPA

```

01 RMHCPA-WS-REC.
   10 CURR-TYP-COD-RMHCPA          PIC X(3) .
   10 EUREX-CURR-TYP-COD-RMHCPA    PIC X(3) .
   10 EXCH-RAT-RMHCPA              PIC Z(3)9.9(8) .
   10 ADJ-EXCH-RAT-CRED-RMHCPA     PIC Z(3)9.9(8) .
   10 ADJ-EXCH-RAT-DEB-RMHCPA     PIC Z(3)9.9(8) .
   10 HAIRCUT-PCNT-RMHCPA          PIC Z(1)9.9(2) .
   10 PRV-EXCH-RAT-RMHCPA          PIC Z(3)9.9(8) .
   10 PRV-ADJ-EXCH-RAT-CRED-RMHCPA PIC Z(3)9.9(8) .
   10 PRV-ADJ-EXCH-RAT-DEB-RMHCPA PIC Z(3)9.9(8) .
   10 PRV-HAIRCUT-PCNT-RMHCPA      PIC Z(1)9.9(2) .
   10 MJR-CURR-TYP-COD-RMHCPA     PIC X(3) .
   10 MIN-MJR-CURR-RAT-RMHCPA     PIC Z(1)9.9(4) .

01 RMHCPA-FILE-INFO-REC REDEFINES RMHCPA-WS-REC. (last record)
   05 FILE-END-MARK-RMHCPA        PIC X(5) .
   05 FILLER                      PIC X.
   05 FILE-COUNTER-RMHCPA         PIC 9(8) .
   05 FILLER                      PIC X.
   05 CURR-BUS-DAY-RMHCPA        PIC 9(8) .
   05 FILLER                      PIC X.
   05 DESCRIPTION-RMHCPA         PIC X(80) .

```

## 2.12.2 Field descriptions

### FPHCPA

Field	Description
CURR-TYP-COD-RMHCPA	Currency (Valid values are all currencies known by the Eurex system)
EUREX-CURR-TYP-COD-RMHCPA	Eurex Currency (Valid values are all Eurex currencies, currently EUR and CHF) represents the base currency of the following (adjusted) exchange rates.
EXCH-RAT-RMHCPA	(Unadjusted) exchange rate between the currency specified in the field CURR-TYP-COD-RMHCPA and the base currency defined by EUREX-CURR-TYP-COD-RMHCPA.
ADJ-EXCH-RAT-CRED-RMHCPA	Adjusted credit exchange rate between the currency specified in the field CURR-TYP-COD-RMHCPA and the base currency defined by EUREX-CURR-TYP-COD-RMHCPA.
ADJ-EXCH-RAT-DEB-RMHCPA	Adjusted debit exchange rate between the currency specified in the field CURR-TYP-COD-RMHCPA and the base currency defined by EUREX-CURR-TYP-COD-RMHCPA.
HAIRCUT-PCNT-RMHCPA	Haircut percentage of the current day
PRV-EXCH-RAT-RMHCPA	(Unadjusted) exchange rate of the previous day between the currency specified in the field CURR-TYP-COD-RMHCPA and the base currency defined by EUREX-CURR-TYP-COD-RMHCPA.
PRV-ADJ-EXCH-RAT-CRED-RMHCPA	Adjusted credit exchange rate of the previous day between the currency specified in the field CURR-TYP-COD-RMHCPA and the base currency defined by EUREX-CURR-TYP-COD-RMHCPA.
PRV-ADJ-EXCH-RAT-DEB-RMHCPA	Adjusted debit exchange rate of the previous day between the currency specified in the field CURR-TYP-COD-RMHCPA and the base currency defined by EUREX-CURR-TYP-COD-RMHCPA.

**FPHCPA**

Field	Description
PRV-HAIRCUT-PCNT-RMHCPA	Haircut percentage of the previous day.
MJR-CURR-TYP-COD-RMHCPA	Major currency of the currency in field CURR-TYPCOD-RMHCPA. When both fields are equal it is a major currency, otherwise the currency detailed in CURR-TYP-COD-RMHCPA is a minor currency.
MIN-MJR-CURR-RAT-RMHCPA	Exchange rate between Minor and Major currency.

The following descriptions apply to the last record of FPHCPA only.

**FPHCPA**

Field	Description
FILE-END-MARK-RMHCPA	This field marks the end of the file and contains the string "*EOF*"
FILE-COUNTER-RMHCPA	This field contains the number of data records contained in the file, <i>not</i> including the last record
CURR-BUS-DAY-RMHCPA	This field contains the date of the business day in the format YYYYMMDD.
DESCRIPTION-RMHCPA	This field contains a short description of the file content.

## 2.13 Deposit rates – RPTDEPRA

This file contains the interest rates on cash collateral.

- Format of the file: csv
- Name of the file: `XXRPTDEPRAPUBLIYYYYMMDD.CSV.ZIP`
- Availability: This file is available in the public area of the CRE

The file is generated on every business day and provides interest rates on cash collateral for every day including all the calendar dates.

Weekend rates are included in the file that is published on Friday.

The rates for the last calendar days (weekends/bank holidays) are included in the file that is published on the last business day of a particular month.

### Record layout of the file

File header (first CSV line):

`Valid from;EUR;CHF;USD;GBP`

File data (CSV data lines):

`<DD/MM/YYYY>;IntRateValue;IntRateValue;IntRateValue;IntRateValue`

Where `<DD/MM/YYYY>` is a date. `IntRateValue` is a numeric value having 5 decimals.

### 3 Appendix

#### 3.1 Account Types

Account Code	Description
A1-A7, A9	Agent accounts
G1, G2	Give-up accounts <sup>a</sup>
M1, M2	Market maker accounts
P1, P2	Proprietary accounts
PP	Combined proprietary and market maker accounts
AAA, A8	Dedicated agent accounts used as transition accounts between 2 digit Eurex classic accounts and C7 flexible accounts.
<X...Y>	C7 flexible account (additional agent account)

- a. Please note that G1 and G2 are not physical accounts, they are only used to trigger an automatic predesignation or designation for give-up; the trade itself is posted to the A1 account.