Theoretical Price File for Eurex Products – FPTHEA

The file FPTHEA contains derivative theoretical prices used for margining.

Enhancement with Eurex Release 9.0:

The field IMPLIED-VOL-RMTHEA will be renamed to VOL-RMTHEA as it will contain the volatility used for theoretical price calculations. The layout of the file will not be changed.

Record layout for the file FPTHEA:

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01  RMTHEA-WS-REC.
      10  MGN-CLS-COD-RMTHEA              PIC  X(5).
      10  SERI-GRP-ID-COD-RMTHEA.
        15  SECU-ID-COD-RMTHEA            PIC  X(4).
        15  SERI-CLAS-COD-RMTHEA          PIC  X(1).
        15  SERI-EXP-DAT-RMTHEA.
          20  EXPI-YR-DAT-RMTHEA          PIC  9(2).
          20  EXPI-MTH-DAT-RMTHEA         PIC  9(2).
        15  EXER-PRC-RMTHEA               PIC  9(5).
        15  SERI-VERS-NO-RMTHEA           PIC  9(1).
      10  CALC-BUC-PRICE-RMTHEA           PIC  X(9).
      10  CALC-UND-PRICE-RMTHEA           PIC  X(9).
      10  FORWARD-UND-PRICE-RMTHEA        PIC  Z(4)9.9(6).
      10  UD-IND-RMTHEA                   PIC  X(1).
      10  STOCK-PRC-IND-RMTHEA            PIC  X(1).
      10  THEO-VALUE-RMTHEA               PIC  Z(4)9.9(6).
      10  EA-THEO-VALUE-RMTHEA            PIC  X(9).
      10  SHORT-OPT-THEO-RMTHEA           PIC  Z(4)9.9(6).
      10  SECU-LST-CLS-PRC-RMTHEA         PIC  X(10).
      10  INTP-LST-CLS-PRC-RMTHEA         PIC  X(10).
      10  SERI-LST-STL-PRC-RMTHEA         PIC  X(10).
      10  MGN-INTERVAL-RMTHEA             PIC  X(11).
      10  VOL-RMTHEA                      PIC  Z(2)9.9(2).
      10  INTR-RAT-PCT-RMTHEA             PIC  9(1).9(4).
      10  YIELD-RAT-PCT-RMTHEA            PIC  9(1).9(4).
      10  SECU-TRD-UNT-NO-RMTHEA          PIC  Z(3)9.9(4).
      10  SECU-TIC-SIZE-RMTHEA            PIC  X(7).
      10  SECU-TIC-VAL-RMTHEA             PIC  Z(3)9.9(4).
      10  SERI-STS-COD-RMTHEA             PIC  X(1).
      10  MGN-STYLE-FLG-RMTHEA            PIC  X(1).
      10  EXER-PRC-DECIMALS-RMTHEA        PIC  9(1).
      10  CURR-DCML-SHFT-GRP-RMTHEA.
        15  CURR-TYP-COD-RMTHEA           PIC  X(3).
        15  DCML-SHFT-NO-RMTHEA           PIC  9(1).
      10  DAYS-TO-EXP-RMTHEA              PIC  Z(4)9.


01  RMTHEA-FILE-INFO-REC REDEFINES RMTHEA-WS-REC.      (last record)
    05  FILE-END-MARK-RMTHEA              PIC  X(5).
    05  FILLER                            PIC  X.
    05  FILE-COUNTER-RMTHEA               PIC  9(8).
    05  FILLER                            PIC  X.
    05  CURR-BUS-DAY-RMTHEA               PIC  9(8).
    05  FILLER                            PIC  X.
    05  DESCRIPTION-RMTHEA                PIC  X(92).
    05  FILLER                            PIC  X(65).
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The data elements contained in the file FPTHEA are described in the following list.

Field	Description
MGN-CLS-COD-RMTHEA	This field contains the margin class code assigned by the exchange.
SECU-ID-COD-RMTHEA	This field contains the three/four letter abbreviation assigned to the underlying instrument.
SERI-CLAS-COD-RMTHEA	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-RMTHEA	This field contains the year that the option series expires or the futures contract settles.
EXPI-MTH-DAT-RMTHEA	This field contains the month that the option series expires or the futures contract settles.
EXER-PRC-RMTHEA	This field contains the price at which an option contract may be exercised. The field EXER-PRC-DECIMALS-RMTHEA contains the number of decimal places to be used to format the value of this field. For futures contracts it is zero.
SERI-VERS-NO-RMTHEA	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

Field	Description
CALC-BUC-PRICE-RMTHEA	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-RMTHEA for products that are themselves interval products, or have the same underlying as the interval product for their class. This field contains a decimal point with a variable number of decimal places depending on the product.
CALC-UND-PRICE-RMTHEA	This field contains the projected underlying price used to calculate the theoretical value for this record. This field contains a decimal point with a variable number of decimal places depending on the product.
FORWARD-UND-PRICE-RMTHEA	This entry contains the forward underlying price.
UD-IND-RMTHEA	This field contains an indicator showing whether the projected underlying price is less than (downside) or greater than (upside) the closing price of the underlying. “D“ – downside “U“ – upside
STOCK-PRC-IND-RMTHEA	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).
THEO-VALUE-RMTHEA	This field contains the theoretical value calculated for an active options/futures position for a given CALC-UND-PRICE-RMTHEA.
EA-THEO-VALUE-RMTHEA	This field contains the theoretical value calculated for an exercised/assigned options position for a given CALC-UND-PRICE-RMTHEA. This field contains a decimal point with a variable number of decimal places depending on the product.

Field	Description
SHORT-OPT- THEO-RMTHEA	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 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. For futures this field is zero.
SECU-LST-CLS-PRC-RMTHEA	This field contains the last closing price of the underlying asset. For futures products with no underlying price, this field contains the settlement price of the appropriate series. This field contains a decimal point with a variable number of decimal places depending on the product.
INTP-LST-CLS-PRC-RMTHEA	This field contains the last closing price of the underlying asset for the interval product. If the interval product is a future with no underlying price, this field contains the settlement price of the spot month series. This field contains a decimal point with a variable number of decimal places depending on the product.
SERI-LST-STL-PRC-RMTHEA	This field contains the last settlement price of the series. This field contains a decimal point with a variable number of decimal places depending on the product.
MGN-INTERVAL-RMTHEA	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. This field contains a decimal point with a variable number of decimal places depending on the product.
VOL-RMTHEA	This field contains the synthetic volatility used for theoretical price calculations.
INTR-RAT-PCT-RMTHEA	This field contains the security risk free interest rate used to calculate the theoretical value.

Field	Description
YIELD-RAT-PCT-RMTHEA	This field contains the yield rate which is used for the calculation of theoretical prices of currency options.
SECU-TRD-UNT-NO-RMTHEA	This field contains the quantity of the underlying instrument traded per contract.
SECU-TIC-SIZE-RMTHEA	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.
SECU-TIC-VAL-RMTHEA	This field contains the tick value for the product.
SERI-STS-COD-RMTHEA	This field contains a code to identify an options series / futures contract as active (“A“) or expired (“E“).
MGN-STYLE-FLG-RMTHEA	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-RMTHEA	This field indicates the number of decimals in the exercise price.
CURR-TYP-COD-RMTHEA	This field contains the currency code of the underlying instrument.
DCML-SHFT-NO-RMTHEA	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 x 1= 23.45 EUR
DAYS-TO-EXP-RMTHEA	This field contains the number of days until expiration of the series or contract.

The following descriptions apply to the last record of FPTHEA only:

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