



**Financial products Markup Language**

**FpML Financial product Markup Language**

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# **1 Business Process Examples**

## ***1.1 Introduction***

This section contains example FpML documents for several message types related to different business processes. Each demonstrates how different message exchanges are modeled in FpML.



## ***1.2 General Messages***

### **1.2.1 Example 3 - Portfolio Message**

File: msg\_ex03\_portfolio.xml

### **1.2.2 Example 21 - Credit Event Notice**

File: msg\_ex21\_credit\_event\_notice.xml

This example shows the representation of a Credit Event Notice as FpML message. This examples is the same as cdcen\_ex01\_credit\_event\_notice\_message.xml available in the cd folder.

## **1.3 Allocations**

### **1.3.1 Example 19 - Long-Form Allocation of a Credit Default Swap**

File: msg\_ex19\_cds\_long\_form\_allocation\_accounts.xml

This example shows a "long-form" representation of allocations for a Credit Default Swap. This means that the block and the allocated trades have a full FpML representation.

### **1.3.2 Example 20 - Short-Form Allocation of a Credit Default Swap**

File: msg\_ex20\_cds\_short\_form\_allocation.xml

This example shows a "short-form" representation of allocations for a Credit Default Swap. This means that only the block trade has a full FpML representation. The allocated trades are described with parameters (percentage of notional, amount) contained in the allocations element

### **1.3.3 Example 22 - Allocation Created**

File: msg\_ex22\_cds\_long\_form\_allocation\_created.xml

This example shows an allocation being created with the AllocationCreated message. It also notes the beginning of a messaging thread between two parties.

### **1.3.4 Example 23 - Allocation Amendment**

File: msg\_ex23\_cds\_long\_form\_allocation\_amended.xml

This example shows a change to the allocation that was created in example 22. The AllocationAmended message continues a thread between two parties.

### **1.3.5 Example 24 - Allocation Cancelled**

File: msg\_ex24\_cds\_long\_form\_allocation\_cancelled.xml

This example shows the allocation created in example 22 being cancelled. The message thread between two parties.

### **1.3.6 Example 25 - Request Allocation**

File: msg\_ex25\_cds\_request\_allocation.xml

This examples shows the usage of the RequestAllocation message and a thread between two parties.

## ***1.4 Amendments***

### **1.4.1 Example 15 - Credit Default Swap Request Amendment Confirmation**

File: msg\_ex15\_cd\_request\_amendment\_confirmation.xml

## **1.5 Cashflow Matching**

### **1.5.1 Example 28 - Simple Cashflow Assertion**

File: msg\_ex28\_cashflow-assertion-most-simple.xml

This example shows the usage of TradeCashflowsAsserted to describe a simple asserted cashflow. The minimal amount of information is specified: A single payment/currency pair and the buyer/seller party references.

### **1.5.2 Example 29 - Asset Swap Cashflow Assertion**

File: msg\_ex29\_cashflow-assertion-assetSwap.xml

Example of a cashflow assertion related to an asset swap. Features of this example include 3 underlying references: The fixed rate, the float rate and the bond reference.

### **1.5.3 Example 30 - Interest Rate Cashflow Assertion**

File: msg\_ex30\_cashflow-assertion-ird.xml

Example of a cashflow assertion related to an interest rate swap with vanilla fixed vs. float terms.

### **1.5.4 Example 31 - Interest Rate Match Result - A**

File: msg\_ex31\_cashflow-match-result-ird-01.xml

Example of a payment exposed cashflow match result message related to an interest rate swap with vanilla fixed vs. float terms.

### **1.5.5 Example 32 - Interest Rate Match Result - B**

File: msg\_ex32\_cashflow-match-result-ird-02.xml

Example of a mismatched cashflow match result message related to an interest rate swap with vanilla fixed vs. float terms.

### **1.5.6 Example 33 - Interest Rate Match Result - C**

File: msg\_ex33\_cashflow-match-result-ird-03.xml

Example of an unmatched cashflow match result message related to an interest rate swap with vanilla fixed vs. float terms.

### **1.5.7 Example 34 - Credit Default Cashflow Termination**

File: msg\_ex34\_cashflow-assertion-cds-Termination.xml

Example of a cashflow assertion related to the termination of a single name credit default swap. No calculation details are provided to explain how the termination fee has been calculated, as the market practice is to have it agreed on by the respective desks.

### **1.5.8 Example 35 - Credit Default Coupon Payment**

File: msg\_ex35\_cashflow-assertion-cds-Coupon.xml

Example of a cashflow assertion related to a single name credit default swap, with a fee leg reset cashflow.

### **1.5.9 Example 36 - Credit Default Cash Flow Assertion**

File: msg\_ex36\_cashflow-assertion-cds2.xml

Example of a cashflow assertion related to the standard quarterly payment on a single name credit default swap.

### **1.5.10 Example 37 - Credit Default Cashflow Match Result - A**

File: msg\_ex37\_cashflow-match-result-cds2-01.xml

Example of a successful cashflow match result message related to the standard quarterly payment on a single name credit default swap.

### 1.5.11 Example 38 - Credit Default Cashflow Match Result - B

File: msg\_ex38\_cashflow-match-result-cds2-02.xml

Example of an erroneous cashflow match result message related to the standard quarterly payment on a single name credit default swap.

### 1.5.12 Example 39 - Credit Default Cashflow Match Result - C

File: msg\_ex39\_cashflow-match-result-cds2-03.xml

Example of an unmatched cashflow match result message related to the standard quarterly payment on a single name credit default swap.

### 1.5.13 Example 40 - Interest Rate Reset

File: msg\_ex40\_cashflow-assertion-eqs-InterestReset.xml

Example of a cashflow assertion related to a single stock equity swap, with a net payment that has only one gross component: an interest reset.

### 1.5.14 Example 41 - Interest Rate Equity Reset

File: msg\_ex41\_cashflow-assertion-eqs-InterestEquityReset.xml

Example of a cashflow assertion related to a single stock equity swap, with a net payment that has only two gross components: an equity reset and an interest reset.

### 1.5.15 Example 42 - Interest Rate Equity Dividend Reset

File: msg\_ex42\_cashflow-assertion-eqs-InterestEquityDividendReset.xml

Example of a cashflow assertion related to a single stock equity swap, with a net payment that has three gross components: an equity reset, an interest reset and a dividend component.

In the case of the equity reset component of the combined reset, the calculation elements are limited to the number of units. The notional of the trade that has been used as a calculation basis for the accrual, i.e. the number of units (19,000) multiplied by the previous strike price (CAD 7.87).

### 1.5.16 Example 43 - Equity Swap Cashflow Partial Termination

File: msg\_ex43\_cashflow-assertion-eqs-PartialTermination.xml

Example of a cashflow assertion related to the partial termination of an equity swap that leads to a cashflow that has an equity, an interest rate and a dividend component. The notional stated here is the notional **resulting from** the partial termination.

The calculation details sections represent the equity PnL and the funding cost related to their portioned shares.

### 1.5.17 Example 44 - Equity Swap Cashflow Partial Termination Match Results - A

As part of these transactions, 6,948 shares were sold at a price of USD 42.6481, generating a cashflow that needs to be broken down across each of the purchased transactions in order to provide an appropriate explanation of the equity and funding PnL.

- 171 shares had been purchased on July 20th at a price of USD 40.9492
- 5,859 shares had been purchased on August 4th at a price of USD 42.6552
- 918 shares had been purchased on October 24 at a price of USD 38.1097

The approach consisted in having 7 calculation details sections: one for each equity and funding component, and one for the dividend component.

File: msg\_ex44\_cashflow-match-result-eqs-PartialTermination-01.xml

Example of a cashflow match result message related to an interest rate swap with vanilla fixed vs. float terms.

### 1.5.18 Example 45 - Equity Swap Cashflow Partial Termination Match Results - B

File: msg\_ex45\_cashflow-match-result-eqs-PartialTermination-02.xml

Example of a cashflow match result message related to an interest rate swap with vanilla fixed vs. float terms.

### **1.5.19 Example 46 - Equity Swap Cashflow Partial Termination Match Results - C**

File: msg\_ex46\_cashflow-match-result-eqs-PartialTermination-03.xml

Example of a cashflow match result message related to an interest rate swap with vanilla fixed vs. float terms.

### **1.5.20 Example 47 - Compounding Swap Cashflow Assertion**

File: msg\_ex47\_cashflow-assertion-CompoundingSwap.xml

Example of a cashflow assertion related to an interest rate swap with compounding interests on one of the legs. In this example, the fixed leg resets semi-annually.

### **1.5.21 Example 48 - Cashflow Assertion: Initial Principal Exchange of a Cross-Currency Swap**

File: msg\_ex48\_cashflow-assertion-XCcy-PrincipalExchange.xml

Example of a cashflow assertion related to the initial principal exchange of a cross-currency swap.

### **1.5.22 Example 49 - Cashflow Assertion: Equity Option Premium**

File: msg\_ex49\_cashflow-assertion-EquityOption.xml

Example of a cashflow assertion related to an equity option premium.

## **1.6 Confirmations**

### **1.6.1 Example 1 - Request Trade Confirmation**

File: msg\_ex01\_request\_confirmation.xml

### **1.6.2 Example 2 - Trade Confirmed**

File: msg\_ex02\_trade\_confirmed.xml

### **1.6.3 Example 5 - Equity Cash Share Request Confirmation**

File: msg\_ex05\_eqd\_cash\_share\_request\_confirmation.xml

### **1.6.4 Example 6 - Equity Index Option Request Confirmation**

File: msg\_ex06\_eqd\_index\_option\_request\_confirmation.xml

### **1.6.5 Example 7 - Equity Physical Share Request Confirmation**

File: msg\_ex07\_eqd\_physical\_share\_request\_confirmation.xml

## **1.7 Increases**

### **1.7.1 Example 4 - Equity Option Increase**

File: msg\_ex04\_eqd\_option\_increase.xml

### **1.7.2 Example 12 - Credit Default Swap Request Increase Termination**

File: msg\_ex12\_cd\_request\_increase\_confirmation.xml



## **1.8 Novations**

### **1.8.1 Example 26 - Alleged Novation**

File: msg\_ex26\_alleged\_novation.xml

This examples shows the usage of the NovationAlleged message and a thread between two parties. The previous trade is a reference Credit Default Swap and the payment is a closeout between the outgoing and incoming parties.

### **1.8.2 Example 27 - Request Novation Consent**

File: msg\_ex27\_request\_consent\_novation.xml

This examples shows the usage of the NovationConsentRequest message and a thread between the two parties in example 26. The entire CDS transaction being novated is exposed while the payment between the incoming and outgoing parties is removed.

## ***1.9 Party Roles and Accounts***

### **1.9.1 Example 16 - FX Single Leg with multiple roles and accounts**

File: msg\_ex16\_fx\_single\_leg\_roles\_accounts.xml

### **1.9.2 Example 17 - Two sided swap with multiple roles and accounts**

File: msg\_ex17\_two\_sided\_swap\_roles\_accounts.xml

### **1.9.3 Example 18 - Credit Default Swap Short Form US Corporate with broker role**

File: msg\_ex18\_cds\_2003\_short\_us\_corp\_broker\_role.xml

This example shows how to model broker parties using the tradeSide structure instead of using the brokerPartyReference element.

## ***1.10 Terminations***

### **1.10.1 Example 8 - Equity Option Partial Termination**

File: msg\_ex08\_eqd\_option\_partial\_termination.xml

### **1.10.2 Example 9 - Equity Option Termination**

File: msg\_ex09\_eqd\_option\_termination.xml

### **1.10.3 Example 10 - Equity Swap Partial Termination**

File: msg\_ex10\_eqd\_swap\_partial\_termination.xml

### **1.10.4 Example 11 - Equity Swap Full Termination**

File: msg\_ex11\_eqd\_swap\_full\_termination.xml

### **1.10.5 Example 13 - Credit Default Swap Full Termination Confirmation**

File: msg\_ex13\_cd\_request\_full\_termination\_confirmation.xml

### **1.10.6 Example 14 - Credit Default Swap Partial Termination Confirmation**

File: msg\_ex14\_cd\_request\_partial\_termination\_confirmation.xml

## **2 Interest Rate Derivative Examples**

### ***2.1 Introduction***

This section contains twenty eight example FpML trades. Each example illustrates how different product features are modeled in FpML.

Example 5 shows the defaulted 'type' attributes as part of the sample document. This illustrates the additional content model information available to a validating parser when processing an FpML document.

The sample xml document are available for download from the [fpml.org](http://fpml.org) website.

## **2.2 Example 1 - Fixed/Floating Single Currency Interest Rate Swap**

File: ird\_ex01\_vanilla\_swap.xml

On 12 December, 1994 Chase New York and Barclays Bank London enter into an ISDA swap agreement with each other. The terms of the contract are:

- Effective Date: 14 December, 1994
- Termination Date: 14 December, 1999
- Notional Amount: EUR 50,000,000
- Chase pays the floating rate every 6 months, based on 6-month EUR-LIBOR-BBA, on an ACT/360 basis
- Barclays pays the 6% fixed rate every year on a 30E/360 basis
- The swap is non compounding, non amortizing and there are no stub periods. There is no averaging of rates. The business day convention for adjusting the calculation dates is the same as that used for payment date adjustments.

Note the following:

- Optional cashflows are not included in this example

## ***2.3 Example 2 - Fixed/Floating Single Currency Interest Rate Swap with Initial Stub Period and Notional Amortization***

File: ird\_ex02\_stub\_amort\_swap.xml

The swap contract is identical to Example 1 except that there is an initial stub period and the notional amortizes.

The rate for the stub period is the linear interpolation between the 4-month and 5-month EUR-LIBOR-BBA rates.

The stub period on the floating stream runs from 16 January, 1995 to 14 June, 1995, and on the fixed stream from 16 January, 1995 to 14 December, 1995.

The notional amount is decreased by EUR 10,000,000 each year.

Note the following:

- Optional cashflows are included. An assumption that all weekdays are good business days has been made in calculating the adjusted dates in the cashflows

## **2.4 Example 3 - Fixed/Floating Single Currency Interest Rate Swap with Compounding, Payment Delay and Final Rate Rounding**

File: ird\_ex03\_compound\_swap.xml

On 25 April, 2000 Morgan Stanley Dean Witter and JPMorgan enter into an ISDA swap agreement with each other. The terms of the contract are:

- Effective Date: 27 April, 2000
- Termination Date: 27 April, 2002
- Notional Amount: USD 100,000,000
- JPMorgan pays the 5.85% fixed rate semi-annually on a 30/360 basis.
- Morgan Stanley Dean Witter pays the floating rate semi-annually, based on 3-month USD-LIBOR-BBA reset and compounded flat quarterly, on an ACT/360 basis. The compounded rate to be used for calculating each floating payment amount will be rounded to the nearest 5 decimal places. Note how a percentage rate rounding of 5 decimal places is expressed as a rounding precision of 7 in the FpML document since the percentage is expressed as a decimal, e.g. 9.876543% (or 0.09876543) being rounded to the nearest 5 decimal places is 9.87654% (or 0.0987654)
- The business day convention for adjusting the calculation dates is the same as that used for payment date adjustments. There is a payment delay of 5 business days.

Note the following:

- Optional cashflows are included. An assumption that all weekdays are good business days has been made in calculating the adjusted dates in the cashflows
- The floatingRateIndexScheme refers to the 1998 Supplement to the 1991 ISDA Definitions.

## **2.5 Example 4 - Fixed/Floating Single Currency Interest Rate Swap with Arrears Reset, Step-Up Coupon and Upfront Fee**

File: ird\_ex04\_arrears\_stepup\_fee\_swap.xml

On 25 April, 2000 Morgan Stanley Dean Witter and JPMorgan enter into an ISDA swap agreement with each other. The terms of the contract are:

- Effective Date: 27 April, 2000
- Termination Date: 27 April, 2002
- Notional amount: USD 100,000,000
- JPMorgan pays a 6.0% fixed rate semi-annually on a 30/360 basis for the first year and a fixed rate of 6.5% for the final year
- Morgan Stanley Dean Witter pays the floating rate quarterly, based on 3-month USD-LIBOR-BBA reset in arrears, on an ACT/360 basis
- There is no adjustment to period end dates on the fixed stream, i.e. the business day convention used for adjusting the payment dates does not apply for adjusting the calculation dates
- There is an upfront fee of USD 15,000 payable by Morgan Stanley Dean Witter to JPMorgan on the Effective Date.

Note the following:

- Optional cashflows are not included in this example
- The floatingRateIndexScheme refers to the 1998 Supplement to the 1991 ISDA Definitions.



## **2.6 Example 5 - Fixed/Floating Single Currency Interest Rate Swap with Long Initial Stub and Short Final Stub**

File: ird\_ex05\_long\_stub\_swap.xml

On 3 April, 2000 Chase and UBS Warburg enter into an ISDA swap agreement with each other. The terms of the contract are:

- Effective Date: 5 April, 2000
- Termination Date: 5 January, 2005
- Notional Amount: EUR 75,000,000
- Chase pays the floating rate every 6 months, based on 6-month EUR-EURIBOR-Telerate plus 10 basis points spread, on an ACT/360 basis
- UBS Warburg pays the 5.25% fixed rate every year on a 30/360 basis
- There is a long initial stub period of 7 months. The first period runs from 5 March, 2000 to 5 October, 2000 and an initial stub rate of 5.125% has been agreed for this period on the floating stream
- There is a short final stub period of 3 months. The final period runs from 5 October, 2004 to 5 January, 2005 and the 3-month EUR-EURIBOR-Telerate rate will be used for this period on the floating stream
- The business day convention for adjusting the calculation dates is the same as that used for payment date adjustments.

Note the following:

- The optional cashflows are not shown in this example
- This example shows the defaulted 'type' attributes to illustrate the additional content model information available to a validating parser. Whilst it is not invalid to include this information in the XML document instance, it is not recommended to do so, as any inconsistencies between the type information specified in the document and that in the DTD will result in a well formed but invalid FpML document
- The floatingRateIndexScheme refers to the 1998 ISDA Euro Definitions.

## **2.7 Example 6 - Fixed/Floating Cross Currency Interest Rate Swap**

File: ird\_ex06\_xccy\_swap.xml

On 12 December, 1994 Chase New York and Barclays Bank London enter into an ISDA cross-currency swap agreement with each other. The terms of the contract are:

- Effective Date: 14 December, 1994
- Termination Date: 14 December, 1999
- Chase pays the floating rate every 6 months, based on 6-month USD-LIBOR-BBA, on USD 10,000,000 and an ACT/360 basis
- Barclays pays the 6% fixed rate every year on JPY 1,000,000,000 and a 30E/360 basis
- The swap is non compounding, non amortizing and there are no stub periods. There is no averaging of rates. The business day convention for adjusting the calculation dates is the same as that used for payment date adjustments.

Note the following:

- This example is identical to the MT361 Example 1 message in the S.W.I.F.T. User Handbook (Page 477, Category 3 - Treasury Markets - Foreign Exchange, Money Markets and Derivatives - October 1998 Standards Release - August 1998 Edition)
- Optional cashflows are included. An assumption that all weekdays are good business days has been made in calculating the adjusted dates in the cashflows
- The floatingRateIndexScheme refers to the 1991 ISDA Definitions.

## 2.8 Example 7 - Fixed/Floating Overnight Interest Rate Swap (OIS)

File: ird\_ex07\_ois\_swap.xml

On 25 January, 2001 Citibank and Mizuho Capital enter into an ISDA swap agreement with each other. The terms of the contract are:

- Effective Date: 29 January, 2001
- Termination Date: 29 April, 2001
- Notional Amount: EUR 100,000,000
- Citibank makes a single floating rate payment at maturity based on the self-compounding floating rate index EUR-EONIA-OIS-COMPOUND, on an ACT/360 basis. The payment is delayed by one TARGET settlement day
- Mizuho Capital makes a single fixed rate payment at maturity based on a fixed rate of 5.1%, on an ACT/360 basis. The payment is delayed by one TARGET settlement day.

Note the following:

- Optional cashflows are not included in this example
- The floatingRateIndexScheme refers to the 2000 ISDA Definitions
- The calculationPeriodFrequency, paymentFrequency and resetFrequency are all specified as 'Term' since payments on the fixed and floating streams occur only at maturity and there is a single calculation period. The rollConvention is specified as 'None'
- The floating rate reset date is the last day of the calculation period. The ISDA definition of the OIS floating rate index provides for the compounding of the overnight deposit rates to occur in the process of arriving at the floating rate. There is no need to specify compounding of the rate separately, i.e. calculationPeriodFrequency and paymentFrequency are the same and no compoundingMethod is specified
- The fixing date is equal to the reset date
- There is no indexTenor (designated maturity) specified for the OIS floating rate index
- The calculation agent is Citibank.

## **2.9 Example 8 - Forward Rate Agreement**

File: ird\_ex08\_fra.xml

On 14 May, 1991 ABN AMRO Bank and Midland Bank enter a Forward Rate Agreement in which ABN AMRO is the seller of the notional contract amount and Midland the buyer. The terms of the contract are:

- Effective Date: 17 July, 1991
- Termination Date: 17 January, 1992
- Notional Amount: CHF 25,000,000
- Fixed Rate: 4.0%
- Day Count Fraction: Actual/360

Note the following:

- This example is identical to the MT340 Example message in the S.W.I.F.T. User Handbook (Page 243, Category 3 - Treasury Markets - Foreign Exchange, Money Markets and Derivatives - October 1998 Standards Release - August 1998 Edition).
- The floatingRateIndexScheme refers to the 1991 ISDA Definitions.

## **2.10 Example 9 - European Swaption, Physical Settlement, Explicit Underlying Effective Date**

File: ird\_ex09\_euro\_swaption\_explicit.xml

On 30 August, 2000 PartyA buys from PartyB an option to exercise into an underlying ISDA swap. The terms of the contract are:

- PartyA pays to partyB a premium of EUR 100000, on 30 August, 2000.
- The Option Expires on 28th August, 2001.
- The Option should be exercised no earlier than 09:00 hours Brussels time, and no later than 11:00 hours Brussels time
- Follow-up confirmation of the exercise decision is required.
- Effective Date of the Underlying Swap: 30 August, 2001
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- Should the option be exercised, PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- Should the option be exercised, PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.

Note the following:

- The Calculation agent is partyB
- The notification party is partyB, i.e. it is to partyB that notice of exercise must be given.
- The Swap is not specified with cashflows.
- The options settles physically.
- The effective date of the underlying swap is explicitly set as 30 August, 2001 by virtue of the fact that there is no relevantUnderlyingDate element set.

## **2.11 Example 10 - European Swaption, Physical Settlement, Relative Underlying Effective Date**

File: ird\_ex10\_euro\_swaption\_relative.xml

On 30 August, 2000 Party buys from PartyB an option to exercise into an underlying ISDA swap. The terms of the contract are:

- PartyA pays to partyB a premium of EUR 100000, on 30 August, 2000.
- The Option Expires on 28th August, 2001.
- The Option should be exercised no earlier than 09:00 hours Brussels time, and no later than 11:00 hours Brussels time
- Follow-up confirmation of the exercise decision is required.
- Effective Date of the Underlying Swap is defined as being 2 days after the Exercise Date.
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- Should the option be exercised, PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- Should the option be exercised, PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.

## **2.12 Example 11 - European Swaption, Physical Settlement, Partial Exercise, Automatic Exercise**

File: example11\_euro\_swaption\_partial\_auto\_ex.xml

On 30 August, 2000 Party buys from PartyB an option to exercise into an underlying ISDA swap. The terms of the contract are:

- PartyA pays to partyB a premium of EUR 100000, on 30 August, 2000.
- The Option Expires on 28th August, 2001.
- The option is exercised automatically where the threshold rate for exercise is set as 2 basis points.
- There is allowance for partial exercise, where the minimum notional amount is EUR 50,000,000 increasing in multiples of EUR 10,000,000.
- Effective Date of the Underlying Swap: 30 August 2001.
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- Should the option be exercised, PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- Should the option be exercised, PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.

## **2.13 Example 12 - European Swaption, Cash Settlement, Swaption Straddle**

File: ird\_ex12\_euro\_swaption\_straddle\_cash.xml

On 30 August, 2000 Party buys from PartyB an option to exercise into an underlying ISDA swap. The terms of the contract are:

- PartyA pays to partyB a premium of EUR 100000, on 30 August, 2000.
- The Option Expires on 28th August, 2001.
- The Option should be exercised no earlier than 09:00 hours Brussels time, and no later than 11:00 hours Brussels time
- The exercise, settlement is made in cash with valuation being performed using the yield curve unadjusted method (rate source - ISDA, rate type - Mid).
- Follow-up confirmation of the exercise decision is required.
- Effective Date of the Underlying Swap: 30 August, 2001
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- The Option held is a straddle, therefore, on exercise, PartyA will either
- Make semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis, and receive annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.
- or
- Make annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis and receive semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.



## **2.14 Example 13 - European Swaption, Cash Settled, cashflows included**

File: ird\_ex13\_euro\_swaption\_cash\_with\_cfs.xml

On 30 August, 2000 Party buys from PartyB an option to exercise into an underlying ISDA swap. The terms of the contract are:

- PartyA pays to partyB a premium of EUR 100000, on 30 August, 2000.
- The Option Expires on 28th August, 2001.
- The Option should be exercised no earlier than 09:00 hours Brussels time, and no later than 11:00 hours Brussels time
- The exercise, settlement is made in cash with valuation being performed using the yield curve unadjusted method (rate source - ISDA, rate type - Mid).
- Follow-up confirmation of the exercise decision is required.
- Effective Date of the Underlying Swap: 30 August, 2001
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- Should the option be exercised, PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- Should the option be exercised, PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.

Note the following:

- The Calculation agent is partyB
- The swaption is specified with its adjusted exercise date.
- The Swap is specified with cashflows included

## **2.15 Example 14 - Bermuda Swaption, Physical Settlement.**

File: ird\_ex14\_berm\_swaption.xml

On 30 August, 2000 Party buys from PartyB an option to exercise into an underlying ISDA swap. The terms of the contract are:

- PartyA pays to partyB a premium of EUR 100000, on 30 August, 2000.
- The Option can be exercised the following dates: 28 December, 2000, 28 April, 2000 or 28 August, 2000
- The Option should be exercised on these dates no earlier than 09:00 hours Brussels time, and no later than 11:00 hours Brussels time
- Follow-up confirmation of the exercise decision is required.
- Effective Date of the Underlying Swap: 30 August, 2001
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- Should the option be exercised, PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- Should the option be exercised, PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.

Note the following:

- The Calculation agent is partyB
- The options settles physically.

## **2.16 Example 15 - American Swaption, Physical Settlement.**

File: ird\_ex15\_amer\_swaption.xml

On 30 August, 2000 Party buys from PartyB an option to exercise into an underlying ISDA swap. The terms of the contract are:

- PartyA pays to partyB a premium of EUR 100000, on 30 August, 2000.
- The Option can be exercised on any date from 30 August 2000 to 30 August 2002.
- The Option should be exercised on these dates no earlier than 09:00 hours Brussels time, and no later than 11:00 hours Brussels time
- Follow-up confirmation of the exercise decision is required.
- Effective Date of the Underlying Swap will be 2 days after the exercise date.
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- Should the option be exercised, PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- Should the option be exercised, PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.

Note the following:

- The Calculation agent is partyB
- The options settles physically.

## **2.17 Example 16 - Fixed/Floating Single Currency IRS With Mandatory Early Termination.**

File: ird\_ex16\_mand\_term\_swap.xml

On 30 August, 2000 PartyA and PartyB agree to enter into an ISDA swap with early termination provision. The terms of the contract are:

- Effective Date of the Swap: 30 August 2001.
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.
- The will terminate on the 30 August 2001.
- Cash settlement will be made on this date with valuation taking place 2 days prior to settlement at 11:00 hours (Brussels time).
- The Swap will be valued at this time using the cash-price method

Note the following:

- The partyA and partyB are joint calculation agents

## **2.18 Example 17 - Fixed/Floating Single Currency IRS With European Style Optional Early Termination.**

File: ird\_ex17\_opt\_euro\_term\_swap.xml

On 30 August, 2000 PartyA and PartyB agree to enter into an ISDA swap with early termination provision. The terms of the contract are:

- Effective Date of the Swap: 30 August 2001.
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.
- The partyA has a chance to terminate the swap early - cash-settling on 30 August 2001. Notification of this needs to be given 5 days prior to this date after 9:00 hours (Brussels time) and not after (11:00 hours Brussels time)
- Cash settlement will be made on this date with valuation taking place 2 days prior to settlement at 11:00 hours (Brussels time).
- The Swap will be valued at this time using the cash-price method

## **2.19 Example 18 - Fixed/Floating Single Currency IRS With Bermuda Style Optional Early Termination, Cashflows + optional Early Termination Adjusted Dates.**

File: ird\_ex18\_opt\_berm\_term\_swap.xml

On 30 August, 2000 PartyA and PartyB agree to enter into an ISDA swap with early termination provision. The terms of the contract are:

- Effective Date of the Swap: 30 August 2001.
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.
- The partyA has a chance to terminate the swap early - cash-settling either 30 August 2003, or 30 August 2004. Notification of this needs to be given 5 days prior to this date after 9:00 hours (Brussels time) and not after (11:00 hours Brussels time)
- Cash settlement will be made on this date with valuation taking place 2 days prior to settlement at 11:00 hours (Brussels time).
- The Swap will be valued at this time using the cash-price method

Note the following:

- The swap is defined with cashflows.

## **2.20 Example 19 - Fixed/Floating Single Currency IRS With American Style Optional Early Termination.**

File: ird\_ex19\_opt\_amer\_term\_swap.xml

On 30 August, 2000 PartyA and PartyB agree to enter into an ISDA swap with early termination provision. The terms of the contract are:

- Effective Date of the Swap: 30 August 2001.
- Termination Date of the Underlying Swap: 30 August, 2011
- Notional on the Underlying Swap Amount: EUR 100,000,000
- PartyA makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- PartyB makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.
- The partyA has a chance to terminate the swap early - cash-settling any time between 30 August 2001 and 30 August 2006. Notification of this needs to be given 5 days prior to this date after 9:00 hours (Brussels time) and not after (11:00 hours Brussels time)
- Cash settlement will be made on this date with valuation taking place 2 days prior to settlement at 11:00 hours (Brussels time).
- The Swap will be valued at this time using the cash-price method

## **2.21 Example 20 - Fixed/Floating Single Currency IRS With European Cancelable Provision.**

File: ird\_ex20\_euro\_cancel\_swap.xml

On 30 August, 2000 PartyA and PartyB agree to enter into an ISDA swap with Cancelable provision. The terms of the contract are:

- Effective Date of the Swap: 30 August 2001.
- Termination Date of the Underlying Swap: 30 August, 2011
- Notional on the Underlying Swap Amount: EUR 100,000,000
- PartyB makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- PartyA makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.
- The partyB has a chance to cancel the swap after five years (30 August 2006) giving notification 15 days prior to this date after 9:00 hours (Brussels time) and not after (11:00 hours Brussels time)



## **2.22 Example 21 - Fixed/Floating Single Currency IRS With European Extendible Provision.**

File: ird\_ex21\_euro\_extend\_swap.xml

On 30 August, 2000 PartyA and PartyB agree to enter into an ISDA swap with Extendible provision. The terms of the contract are:

- Effective Date of the Swap: 30 August 2001.
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: EUR 100,000,000
- PartyB makes semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.
- PartyA makes annual fixed rate payments based on a fixed rate of 5.0%, on an 30/360 basis.
- The partyA has a chance to extend the swap after five years (30 August 2006) giving notification 15 days prior to this date after 9:00 hours (Brussels time) and not after (11:00 hours Brussels time). If extended, the swap will continue until 30 August 2011

## **2.23 Example 22 - Interest Rate Cap**

File: ird\_ex22\_cap.xml

On 29 April, 2001 PartyA sells to PartyB an interest rate cap. The terms of the contract are:

- Effective Date of the Cap: 30 June 2001.
- Termination Date of the Cap: 30 June, 2006
- Notional Amount: EUR 100,000,000
- PartyA sells partyB a stepped cap (initial rate of 6%) on semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis (partyA being the payer of the floating rate).

Note the following:

- The cap rate schedule defines annual 'step up' intervals hence keeping the same strike for 2 successive caplets.

## **2.24 Example 23 - Interest Rate Floor**

File: ird\_ex23\_floor.xml

On 29 April, 2001 PartyA sells to PartyB an interest rate floor. The terms of the contract are:

- Effective Date of the Floor: 30 June 2001.
- Termination Date of the Floor: 30 June, 2006
- Notional Amount: EUR 100,000,000
- PartyA sells partyB a stepped floor (initial floor rate of 4%) on semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis (partyA being the payer of the floating rate).

Note the following:

- The floor rate schedule defines annual 'step up' intervals hence keeping the same strike for 2 successive floorlets.

## **2.25 Example 24 - Interest Rate Collar**

File: ird\_ex24\_collar.xml

On 29 April, 2001 PartyB sells to PartyA an interest rate collar (PartyA buys a cap and sells a floor). The terms of the contract are:

- Effective Date of the Collar: 30 June 2001.
- Termination Date of the Collar: 30 June, 2006
- Notional Amount: EUR 100,000,000
- PartyA buys a stepped cap (initial cap rate of 6%) and partyA sells a stepped floor (initial floor rate of 4%) on semi-annual floating rate payments based on the floating rate index EUR-EURIBOR-Telerate, on an ACT/360 basis.

Note the following:

- The cap and floor rate schedule defines annual 'step up' intervals hence keeping the same strike for 2 successive caplets/floorlets.

## ***2.26 Example 25 - Fixed/Floating IRS Where The Floating Stream Notional Is Reset Based On Prevailing Spot Exchange Rate***

File: ird\_ex25\_fxnotional\_swap.xml

On 9 January, 2001 PartyA and PartyB agree to enter into an FX Resetting interest rate swap. The terms of the contract are:

- Effective Date of the Swap: 11 January 2006.
- Termination Date of the Underlying Swap: 11 January, 2011
- PartyB makes semi-annual fixed rate payments based on a fixed rate of 1.0%, on an ACT/360-Fixed basis.
- Notional on the fixed leg of the Swap: JPY 100,000,000
- PartyA makes quarterly floating rate payments based on the floating rate index USD-LIBOR-BBA, on an ACT/360 basis.
- Notional on the floating leg of the swap has a Ccy of USD and is FX Linked to the fixed leg JPY notional. The conversion rate for each cashflow is that observed on payment day at 17:00 hours from the Bank of Japan information source.

## **2.27 Example 26 - Example 25 - Fixed/Floating IRS Where The Floating Stream Notional Is Reset Based On Prevailing Spot Exchange Rate - Cashflows.**

File: ird\_ex26\_fsnotional\_swap\_with\_cfs.xml

On 9 January, 2001 PartyA and PartyB agree to enter into a forward starting FX Resetting interest rate swap. The terms of the contract are:

- Effective Date of the Swap: 11 January, 2006.
- Termination Date of the Underlying Swap: 11 January, 2001
- PartyB makes semi-annual fixed rate payments based on a fixed rate of 1.0%, on an ACT/360-Fixed basis.
- Notional on the fixed leg of the Swap: JPY 100,000,000
- PartyA makes quarterly floating rate payments based on the floating rate index USD-LIBOR-BBA, on an ACT/360 basis.
- Notional on the floating leg of the swap has a Ccy of USD and is FX Linked to the fixed leg JPY notional. The conversion rate for each cashflow is that observed on payment day at 17:00 hours from the Bank of Japan information source.

Things to note:

- The Swap stream is defined with cashflows

## **2.28 Example 27 - Inverse Floater**

File: ird\_ex27\_inverse\_floater.xml

On 30 August, 2000 PartyA and PartyB agree to enter into an ISDA. The terms of the contract are:

- Effective Date of the Swap: 30 August 2001.
- Termination Date of the Underlying Swap: 30 August, 2006
- Notional on the Underlying Swap Amount: USD 100,000,000
- PartyA makes quarterly payments with floating rate payments derived as (8.5% - floating rate index EUR-EURIBOR-Telerate), on an ACT/360 basis.
- PartyB makes semi-annual fixed rate payments based on a fixed rate of 4.5%, on an 30/360 basis.

Things to note:

- The use of the floatingRateMultiplierSchedule to invert the floating USD rate.

## **2.29 Example 28 - Bullet Payments**

File: ird\_ex28\_bullet\_payments.xml

On 29 April, 2000 PartyA agrees the payment of a single cashflow to PartyB. The terms of the contract are:

- The payment has an unadjusted payment date of 27 July 2001.
- The amount to be paid is USD 15,000.
- Payment dates are adjusted to London and NY business centers for both payments



## ***2.30 Example 29 - Swap with Non-Deliverable Settlement Provision***

File: ird\_ex29\_non-deliverable\_settlement\_swap.xml

Example that shows non-deliverable terms of an interest rate swap.

These non-deliverable terms specify the conditions under which the cashflows will be made in a different currency (the "settlement currency") than the currency in which a given leg is denominated (the "reference currency").

## 3 Inflation Swaps Examples

### ***3.1 Introduction***

This section contains example FpML trades for Inflation Swaps. Each example illustrates how different product features are modeled in FpML.

The sample xml documents are available for download from the [fpml.org](http://fpml.org) website.

### ***3.2 Example 1 - Year-on-Year***

File: inflation\_swap\_ex01\_yoy.xml

### ***3.3 Example 2 - Year-on-Year with Bond Reference***

File: inflation\_swap\_ex02\_yoy\_bond\_reference.xml

### ***3.4 Example 3 - Year-on-Year Initial Level***

File: inflation\_swap\_ex03\_yoy\_initial\_level.xml.xml

### ***3.5 Example 4 - Year-on-Year with Interpolation***

File: inflation\_swap\_ex04\_yoy\_interp.xml

### ***3.6 Example 5 - Zero-Coupon***

File: inflation\_swap\_ex05\_zc.xml

## 4 Credit Derivative Examples

### 4.1 Credit Default Swap

This section contains example credit default swap trades expressed in FpML. These examples cover typical trades in the various regions and sectors that constitute the global credit default swap market.

Each example is fully described by the ISDA confirm which accompanies it. Note that the ISDA confirms represent example transactions documented under the 1999 ISDA Credit Derivatives Definitions. For the short form examples 2, 8 and 11 and the long form examples 7 and 10 additional FpML example files have been included illustrating how the deal would typically be documented under the 2003 ISDA Credit Derivatives Definitions.

The name of each example consists of three components:

- Region/Sector: The example uses the terms that are commonly applicable at the time of the publication of this document to trades done in this region and sector. (e.g. Asian Corporate)
- Form: Whether the FpML description of the trade correspond to the short or long form of trade confirmation.
- Payment Schedule: The characteristics of the fixed rate payer's payment schedule.(e.g. Fixed Regular Payment Schedule).

In some cases there is an example that uses the 2003 ISDA definitions.

#### 4.1.1 Example 1 - Asian Corporate, Long Form, Fixed Regular Payment Schedule

FpML File: cd\_ex01\_long\_asia\_corp\_fixreg.xml

ISDA Confirm: cd\_ex01\_long\_asia\_corp\_fixreg.pdf

#### 4.1.2 Example 2 - Asian Corporate, Short Form, Fixed Regular Payment Schedule

FpML File: cd\_ex02\_short\_asia\_corp\_fixreg.xml

FpML File (2003 version): cd\_ex02\_2003\_short\_asia\_corp\_fixreg.xml

ISDA Confirm: cd\_ex02\_short\_asia\_corp\_fixreg.pdf

#### 4.1.3 Example 3 - Australian Corporate, Long Form, Fixed Regular Payment Schedule

File: cd\_ex03\_long\_aussie\_corp\_fixreg.xml

ISDA Confirm: cd\_ex03\_long\_aussie\_corp\_fixreg.pdf

#### 4.1.4 Example 4 - Australian Corporate, Short Form, Fixed Regular Payment Schedule

File: cd\_ex04\_short\_aussie\_corp\_fixreg.xml

ISDA Confirm: cd\_ex04\_short\_aussie\_corp\_fixreg.pdf

#### 4.1.5 Example 5 - Emerging Markets Asian Corporate, Long Form, Fixed Regular Payment Schedule

File: cd\_ex05\_long\_emasia\_corp\_fixreg.xml

ISDA Confirm: cd\_ex05\_long\_emasia\_corp\_fixreg.pdf

#### 4.1.6 Example 6 - Emerging Markets European Sovereign, Long Form, Fixed Regular Payment Schedule

File: cd\_ex06\_long\_emeur\_sov\_fixreg.xml



ISDA Confirm: cd\_ex06\_long\_emeur\_sov\_fixreg.pdf

#### **4.1.7 Example 7 - European Corporate, Long Form, Fixed Regular Payment Schedule**

File: cd\_ex07\_long\_euro\_corp\_fixreg.xml

File (2003 version): cd\_ex07\_2003\_long\_euro\_corp\_fixreg.xml

ISDA Confirm: cd\_ex07\_long\_euro\_corp\_fixreg.pdf

#### **4.1.8 Example 8 - European Corporate, Short Form, Fixed Regular Payment Schedule**

File: cd\_ex08\_short\_euro\_corp\_fixreg.xml

File (2003 version): cd\_ex08\_2003\_short\_euro\_corp\_fixreg.xml

ISDA Confirm: cd\_ex08\_short\_euro\_corp\_fixreg.pdf

#### **4.1.9 Example 9 - European Sovereign, Long Form, Fixed Regular Payment Schedule**

File: cd\_ex09\_long\_euro\_sov\_fixreg.xml

ISDA Confirm: cd\_ex09\_long\_euro\_sov\_fixreg.pdf

#### **4.1.10 Example 10 - US Corporate, Long Form, Fixed Regular Payment Schedule**

File: cd\_ex10\_long\_us\_corp\_fixreg.xml

File (2003 version): cd\_ex10\_2003\_long\_us\_corp\_fixreg.xml

ISDA Confirm: cd\_ex10\_long\_us\_corp\_fixreg.pdf

#### **4.1.11 Example 11 - US Corporate, Short Form, Fixed Regular Payment Schedule**

File: cd\_ex11\_short\_us\_corp\_fixreg.xml

File (2003 version): cd\_ex11\_2003\_short\_us\_corp\_fixreg.xml

ISDA Confirm: cd\_ex11\_short\_us\_corp\_fixreg.pdf

#### **4.1.12 Example 12 - Emerging Markets Asian Sovereign, Long Form, Fixed Regular Payment Schedule**

File: cd\_ex12\_long\_emasia\_sov\_fixreg.xml

ISDA Confirm: cd\_ex12\_long\_emasia\_sov\_fixreg.pdf

#### **4.1.13 Example 13 - Asia Sovereign, Long Form, Fixed Regular Payment Schedule**

File: cd\_ex13\_long\_asia\_sov\_fixreg.xml

ISDA Confirm: cd\_ex13\_long\_asia\_sov\_fixreg.pdf

#### **4.1.14 Example 14 - Emerging Markets Latin American Corporate, Long Form, Fixed Regular Payment Schedule**

File: cd\_ex14\_long\_emlatin\_corp\_fixreg.xml

ISDA Confirm: cd\_ex14\_long\_emlatin\_corp\_fixreg.pdf

#### **4.1.15 Example 15 - Emerging Markets Latin American Sovereign, Long Form, Fixed Regular Payment Schedule**

File: cd\_ex15\_long\_emlatin\_sov\_fixreg.xml

ISDA Confirm: cd\_ex15\_long\_emlatin\_sov\_fixreg.pdf

## ***4.2 Credit Default Swap Index***

### **4.2.1 Example 1 - CDX Example**

Transaction Supplement: cd\_CDX\_iTraxx\_example\_trades.pdf

File: cdindex\_ex01\_cdx.xml

### **4.2.2 Example 2 - iTraxx Example**

Transaction Supplement: cd\_CDX\_iTraxx\_example\_trades.pdf

File: cdindex\_ex02\_iTraxx.xml

### **4.2.3 Example 3 - iTraxx Contractual Supplement Example**

Transaction Supplement: cd\_non-dealer\_untranchedException\_confirm.pdf

File: cdindex\_ex03\_iTraxx\_contractual\_supplement.xml

### **4.2.4 Example 4 - CDS Index Tranche**

File: cds-index-tranche.xml

## ***4.3 Credit Default Swap Basket***

### **4.3.1 Example 1 - CDS Basket**

File: cds-basket.xml

### **4.3.2 Example 2 - CDS Custom Basket**

File: cds-custom-basket.xml

### **4.3.3 Example 3 - CDS Basket Tranche**

File: cds-basket-tranche.xml

## ***4.4 Independent Amount***

### **4.4.1 Example 1 - Independent Amount**

The independent amount structure is in the Trade level. This example shows the use of independent amount in the context of a credit default swap.

File: cd\_indamt\_ex01\_short\_us\_corp\_fixreg.xml

## ***4.5 Credit Event Notice***

### **4.5.1 Example 1 - Credit Event Notice**

File: cdcen\_ex01\_credit\_event\_notice\_message.xml

File: cdcen\_ex01\_credit\_event\_notice\_document.xml

Credit Event Notice Sample: cd\_example\_credit\_event\_notice.pdf

## **5 Foreign Exchange Examples**

### ***5.1 Introduction***

This section contains twenty three example FpML trades related to FX and FX OTC options. Each example illustrates how different product features are modeled in FpML.

The sample xml documents are available for download from the [fpml.org](http://fpml.org) website.

## **5.2 Example 1 - FX Spot**

File: fx\_ex01\_fx\_spot.xml

On 23 October, 2001, Citibank New York and Barclay's London agree to a foreign exchange trade. The terms of the contract are:

- Trade date: 23 October, 2001
- Value date: 25 October, 2001
- Barclays pays 10,000,000 GBP to Citibank
- Citibank pays 14,800,000 USD to Barclays
- Exchange rate equals 1.48 (USD per GBP).

### **5.3 Example 2 - FX Spot 'Cross' (non-base currency) with Side Rates**

File: fx\_ex02\_spot\_cross\_w\_side\_rates.xml

On 23 October, 2001, Chase New York and CSFB New York agree to a foreign exchange trade. The terms of the contract are similar to Example 1, but in this case, the currencies exchanged are EUR and GBP. Both of these institutions are USD-based, so rates against the base currency (USD) have been captured as well. The terms of the contract are:

- Trade date: 23 October, 2001
- Value date: 25 October, 2001
- CSFB pays 100,000,000 EUR to Chase
- Chase pays 6,300,680 USD to CSFB
- Exchange rate equals 0.630068 (GBP per EUR).
- GBPUSD rate equals 1.48, and EURUSD rate equals 0.9325.



## **5.4 Example 3 - FX Forward**

File: fx\_ex03\_fx\_fwd.xml

On 19 November, 2001, ABN Amro and DeutscheBank agree to a one-month forward foreign exchange contract. The terms of the contract are:

- Trade date: 19 November, 2001
- Value date: 21 December, 2001
- DB pays 10,000,000 EUR to ABN
- ABN pays 9,175,000 USD to DB
- Exchange rate equals 0.9175 (USD per EUR).
- Spot rate equals 0.9130, forward points equals 0.0045.

## **5.5 Example 4 - FX Forward with specific Settlement Instructions**

File: fx\_ex04\_fx\_fwd\_w\_settlement.xml

On 12 November, 2001, UBS Zurich and Citibank New York agree to a foreign exchange contract. The terms of the contract are:

- Trade date: 12 November, 2001
- Value date: 21 December, 2001
- UBS pays 10,000,000 GBP to Citi
- Citi pays 14,643,000 USD to UBS
- Exchange rate equals 1.4643 (USD per GBP).

Settlement is highlighted in this example. In this case, UBS pays the GBP from their account at UBS London to Citi's GBP account at Citi London, with the ultimate beneficiary being Citi New York.

For the USD, Citi pays the USD to ultimate beneficiary UBS Zurich, but in this case, UBS Zurich holds its USD at Citibank, and therefore UBS' account as Citibank is credited.

## ***5.6 Example 5 - FX Forward identified as using standard settlement instructions***

File: fx\_ex05\_fx\_fwd\_w\_ssi.xml

This is identical to Example 3, but the standard settlement scheme is used to highlight that this trade will be paid using standard, pre-agreed settlement instructions.

## **5.7 Example 6 - FX Forward with split settlement**

File: fx\_ex06\_fx\_fwd\_w\_splits.xml

On 12 November, 2001, DeutscheBank Frankfurt and ABN Amro Amsterdam agree to a forward foreign exchange contract. The terms of the contract are:

- Trade date: 12 November, 2001
- Value date: 14 February, 2002
- Deutsche pays 13,000,000 USD to ABN
- ABN pays 14,393,600 EUR to Deutsche
- Exchange rate equals 1.1072 (EUR per USD).

In this example, the exchange rate has been quoted as an "inverted" rate.

Split settlement is highlighted in this example in the payment of the USD. Here, the following has been specified:

- 3,000,000 USD is to be paid to ABNAUS33
- 4,000,000 USD is to be paid to ABNAUS4C
- 6,000,000 USD is to be paid to ABNAUS6F

The ultimate beneficiary is ABNANL2A for all USD payments, but 3 different accounts have been specified for settlement.

For the EUR, ABN pays all EUR to Deutsche, but specifies settlement of the EUR via a debit of ABN's account in EUR with Deutsche.

## **5.8 Example 7 - Non-deliverable FX Forward**

File: fx\_ex07\_non\_deliverable\_forward.xml

On 09 January, 2002, Chase New York and CSFB New York agree to a FX non-deliverable forward contract. The terms of the contract are:

- Trade date: 9 January, 2002
- Fixing date and time: 9 February, 2002, 14:30 Mumbai time
- Rate source: RBIB
- Settlement currency: USD
- Value date: 13 February, 2002
- CSFB has agreed to notionally purchase 434M INR for 10M USD with Chase.
- Since the contract is non-deliverable, the computed settlement will occur on the fixing date based upon the differential between the agreed-upon trade rate and the observed spot rate on the fixing date.
- Exchange rate equals 43.40 INR per USD.

## **5.9 Example 8 - FX Swap**

File: fx\_ex08\_fxswap.xml

On 23 January, 2002, Chase New York and Deutsche Frankfurt agree to an FX swap contract. The terms of the contract are:

- Trade date: 23 January, 2002
- Value date (near leg): 25 January, 2002
- Value date (far leg): 25 February, 2002
- On January 25, Deutsche pays 10,000,000 GBP to Chase
- On January 25, Chase pays 14,800,000 USD to Deutsche
- On February 25, Chase pays 10,000,000 GBP to Deutsche
- On February 25, Deutsche pays 15,000,000 USD to Chase
- Exchange rates equal 1.48 on near leg, 1.5 on far leg.

## **5.10 Example 9 - FX OTC Option - European exercise**

File: fx\_ex09\_euro\_opt.xml

On 4 December, 2001, Chase agrees to purchase a standard FX OTC option from ABN Amro. The terms of the contract are:

- Trade date: 4 December, 2001
- Expiry date: 4 June, 2002
- Option buyer: Chase
- Option seller: ABN Amro
- Exercise style: European
- Quote: 75m 6-month AUD Put on 36.9m USD @ strike of 0.4920
- Option premium: 36,900 USD
- Business center: New York
- Cut Name: New York

## **5.11 Example 10 - FX OTC Option - American exercise**

File: fx\_ex10\_amer\_opt.xml

On 4 December, 2001, Chase agrees to purchase a standard FX OTC option from ABN Amro. The terms of the contract are:

- Trade date: 4 December, 2001
- Expiry date: 4 June, 2002
- Option buyer: Chase
- Option seller: ABN Amro
- Exercise style: American
- Quote: 75m 6-month AUD Put on 36.9m USD @ strike of 0.4920
- Option premium: 36,900 USD
- Business center: New York
- Cut Name: New York



## **5.12 Example 11 - Non-deliverable FX OTC Option**

File: fx\_ex11\_non\_deliverable\_option.xml

On 15 January, 2001, Chase agrees to purchase a non-deliverable FX OTC USD / VEB option from ABN Amro. The terms of the contract are:

- Trade date: 15 January, 2001
- Expiry date: 9 April, 2001
- Expiry time: 10:00 New York time
- Value date: 11 April, 2001
- Option buyer: Chase
- Option seller: ABN Amro
- Exercise style: European
- Call currency: USD
- Call amount: 15,000,000
- Put currency: VEB
- Put amount: 17,250,000
- Strike price: 1.15
- Option premium: 372,750 USD
- Premium payment: 17 January, 2001
- Business center: New York
- Settlement currency: USD
- Primary rate source: VEB BCV28
- Secondary rate source: VEB 01

### **5.13 Example 12 - FX OTC Barrier Option**

File: fx\_ex12\_fx\_barrier\_option.xml

On 16 August, 2001, DB agrees to purchase a EUR call against USD put barrier option with a knock-in

- Trade date: 16 August, 2001
- Expiry date: 6 February, 2002
- Expiry time: 10:00 New York time
- Value date: 8 February, 2002
- Option buyer: DB
- Option seller: Chase
- Exercise style: European
- Call currency: EUR
- Call amount: 5,000,000
- Put currency: USD
- Put amount: 4,500,000
- Strike price: 0.9
- Knockin: 0.8975
- Reference spot: 0.8935
- Option premium: 45,000 USD
- Premium payment: 20 August, 2002
- Business center: New York

## **5.14 Example 13 - FX OTC Double Barrier Option**

File: fx\_ex13\_fx\_dbl\_barrier\_option.xml

On 3 January, 2001, DB agrees to purchase a 2-month double knockout FX OTC JPY put / USD call option from Chase. The terms of the contract are:

- Trade date: 3 January, 2002
- Expiry date: 4 March, 2002
- Expiry time: 10:00 New York time
- Value date: 6 March, 2002
- Option buyer: DB
- Option seller: Chase
- Exercise style: European
- Call currency: USD
- Call amount: 23,798,191.34
- Put currency: JPY
- Put amount: 2,500,000,000
- Strike price: 105.05
- Knockout: 102
- Knockout: 115
- Option premium: 192,765.35 USD
- Premium payment: 7 January, 2002
- Business center: New York

### ***5.15 Example 14 - FX OTC Digital/Binary Option -- Euro Binary***

File: fx\_ex14\_euro\_digital\_option.xml

On 12 November, 2001, UBS agrees to purchase a two-week GBP/USD European binary option and pays a premium. At expiry, if the spot rate is above the trigger rate, UBS receives a payout.

## **5.16 Example 15 - FX OTC Digital/Binary Option -- Euro Range Digital**

File: fx\_ex15\_euro\_range\_digital\_option.xml

On 12 November, 2001, UBS agrees to purchase a two-week GBP/USD European range binary option and pays a premium. At expiry, if below the higher trigger rate and above the lower trigger rate, UBS receives a payout.

### ***5.17 Example 16 - FX OTC Digital/Binary Option -- One-Touch***

File: fx\_ex16\_one\_touch\_option.xml

On 12 November, 2001, UBS agrees to purchase a two-week GBP/USD one-touch option and pays a premium. At any time before expiry, if the spot rate is above the trigger rate, UBS receives a payout, but this payout is deferred until the value date of the option.

### ***5.18 Example 17 - FX OTC Digital/Binary Option -- No-Touch***

File: fx\_ex17\_no\_touch\_option.xml

On 12 November, 2001, UBS agrees to purchase a two-week GBP/USD no-touch option and pays a premium. If the spot rate remains below the trigger rate at all times until expiry, UBS receives a payout.

### ***5.19 Example 18 - FX OTC Digital/Binary Option -- Double One-Touch***

File: fx\_ex18\_double\_one\_touch\_option.xml

On 12 November, 2001, UBS agrees to purchase a two-week GBP/USD double one-touch option and pays a premium. UBS receives a payout at maturity if the spot rate has crossed either trigger rate at some time during the lifetime of the option.



## **5.20 Example 19 - FX OTC Digital/Binary Option -- Double No-Touch**

File: fx\_ex19\_double\_no\_touch\_option.xml

On 12 November, 2001, UBS agrees to purchase a two-week GBP/USD double no-touch option and pays a premium. If the spot rate remains below the upper trigger rate and above the lower trigger rate at all times until expiry, UBS receives a payout.

## **5.21 Example 20 - FX OTC Average Rate Option with Parametric Schedule**

File: fx\_ex20\_avg\_rate\_option\_parametric.xml

On 16 August, 2001, DB agrees to purchase an average rate option from Chase and pays a premium. The terms of the contract are:

- Trade date: 16 August, 2001
- Expiry date:
- Option buyer: DB
- Option seller: Chase
- Put: 5,750,000 MXN
- Call: 585,539.71 USD
- Rate source: BNBX
- Observation start date: 1 November, 2001
- Observation end date: 30 November, 2001
- Observation frequency: Daily, all business days for each currency
-

## **5.22 Example 21 - FX OTC Average Rate Option with Specific Date Schedule**

File: fx\_ex21\_avg\_rate\_option\_specific.xml

This example is identical to Example 20. Instead of using a parametric frequency (e.g., daily), each specific observation date has been specified. All weighting factors are 1.0, since all rates would be weighted evenly when the average rate is computed upon expiry.

### **5.23 Example 22 - Straddle (sample usage of Strategy)**

File: fx\_ex22\_straddle.xml

On 20 November 2001, Chase agrees to purchase a straddle from ABN Amro. A straddle consists of buying a call and a put for the same currency pair, at the same strike price.

This contains two instances of the fxSimpleOption structure within strategy. Note that this is used when a single trade reference number is desired.

## ***5.24 Example 23 - Delta Hedge (sample usage of Strategy)***

File: fx\_ex23\_delta\_hedge.xml

On 4 December, 2001, Chase agrees to purchase an FX OTC European option from ABN Amro. At the same time, they agree to hedge their FX spot risk by doing a FX spot transaction. This is all part of a single trade strategy.

## ***5.25 Term Deposit Example 1 - Simple Term Deposit***

File: td\_ex01\_simple\_term\_deposit.xml

ABN Amro pays 4% CHF fixed rate loan on ACT/360 basis a for 25 million Deposit from Midland starting February 14, 2002 and maturing February 15, 2002.

## ***5.26 Term Deposit Example 2 - Term Deposit with Settlement Instructions***

File: td\_ex02\_term\_deposit\_w\_settlement\_etc.xml

ABN Amro pays 4% CHF fixed rate loan on ACT/360 basis a for 25 million Deposit from Midland starting February 14, 2002 and maturing February 15, 2002. This example also demonstrates setting explicit settlement instructions for each cash flow.

## 6 Equity Options Examples

### ***6.1 Introduction***

This section contains examples of FpML trades for Equity Options products. Each example illustrates how different product features are modeled in FpML.

The sample xml documents are available for download from the [fpml.org](http://fpml.org) website.



## 6.2 Example 1 - American Call Stock Long Form

File: eqd\_ex01\_american\_call\_stock\_long\_form.xml

On 13 July, 2001, Party A and Party B agree to an equity option trade. The terms of the contract are:

- Trade Date: 13th July 2001
- Option Style: American
- Option Type: Call
- Seller: Party A
- Buyer: Party B
- Underlying: ST Microelectronics NV
- Number Options: 150,000
- Option Entitlement: 1
- Multiple Exercise: Applicable
- Minimum Number Of Options: 1
- Maximum Number Of Options: 150,000
- Integral Multiple: 1
- Strike Price: 32 EUR
- Premium: 405,000 EUR
- Premium Per Option: 2.70 EUR
- Premium Payment Date: 17th July 2001
- Exchange: EURONEXT
- Clearance System: SICOVAM
- Calculation Agent: Party A
- Commencement Date: 13th July 2001
- Latest Exercise Time: 5:15pm London
- Expiration Time: Exchange Close
- Expiration Date: 27th Sep 2001
- Automatic Exercise: Applicable
- Valuation Time Exchange: Close
- Valuation Date Exercise: Date
- Physical Settlement: Applicable
- Failure To Deliver: Applicable
- Method of Adjustment: Calculation Agent
- Share-for-Share Merger: Alternative Obligation
- Share-for-Other Merger: Cancellation and Payment
- Share-for-Combined Merger: Cancellation and Payment
- Nationalisation or Insolvency: Cancellation and Payment
- Governing Law: English

## 6.3 Example 2 - Calendar Spread Short Form

File: eqd\_ex02\_calendar\_spread\_short\_form.xml

On 13 July, 2001, Party A and Party B agree to an equity option trade. The terms of the contract are:

- Trade Date: 13th July 2001
- Option Style: American
- Option Type: Call
- Seller: Party A
- Buyer: Party B
- Underlying: ST Microelectronics NV
- Number Options: 150,000
- Option Entitlement: 1
- Multiple Exercise: Applicable
- Minimum Number Of Options: 1
- Maximum Number Of Options: 150,000
- Integral Multiple: 1
- Strike Price: 32 EUR
- Premium: 405,000 EUR
- Premium Per Option: 2.70 EUR
- Premium Payment Date: 17th July 2001
- Exchange: EURONEXT
- Clearance System: SICOVAM
- Calculation Agent: Party A
- Commencement Date: 13th July 2001
- Latest Exercise Time: 5:15pm London
- Expiration Time: Exchange Close
- Expiration Date: 27th Sep 2001
- Automatic Exercise: Applicable
- Valuation Time Exchange: Close
- Valuation Date Exercise: Date
- Physical Settlement: Applicable
- Failure To Deliver: Applicable
- Method of Adjustment: Calculation Agent
- Share-for-Share Merger: Alternative Obligation
- Share-for-Other Merger: Cancellation and Payment
- Share-for-Combined Merger: Cancellation and Payment
- Nationalisation or Insolvency: Cancellation and Payment
- Governing Law: English

## ***6.4 Example 3 - Call or Put Spread Short Form***

File: eqd\_ex03\_call\_or\_put\_spread\_short\_form.xml

## **6.5 Example 4 - European Call Index Long Form**

File: eqd\_ex04\_european\_call\_index\_long\_form.xml

On 4 September, 2001, Party A and Party B agree to an equity option trade. The terms of the contract are:

- Trade Date: 04-09-2001
- Option Style: European
- Option Type: Call
- Seller: Party A
- Buyer: Party B
- Underlying: SMI Index
- Number Options: 2,500
- Option Entitlement: 1
- Maximum Number Of Options: 2,500
- Strike Price: 8,700
- Premium: 300,000 CHF
- Premium Payment Date: 06-09-2001
- Exchange: SWX
- Related Exchange: Eurex
- Calculation Agent: Seller
- Expiration Time: Official Settlement Price
- Expiration Date: Valuation Date 19-12-2003
- Automatic Exercise: Applicable
- Valuation Date: OSP Date
- Futures Price Valuation: Applicable
- Exchange Traded Contract: December 2003 SMI Futures Contract on Related Exchange
- Cash Settlement: Applicable
- Settlement Currency: CHF
- Cash Settlement Payment Date: Two Currency Business Days After Relevant Valuation Date

## **6.6 Example 5 - Asian Option Long Form**

File: eqd\_ex05\_asian\_long\_form.xml

On 28 June, 2000, Party A and Party B agree to an equity option trade. The terms of the contract are:

- Trade Date: 28-06-2000
- Option Style: European
- Option Type: Call
- Seller: Party A
- Buyer: Party B
- Underlying: Nikkei 225 Index
- Number Options: 79.099093
- Option Entitlement: 1
- Strike Price: 17475.90
- Premium: 107,821.57 EUR
- Premium Payment Date: 07-03-2000
- Exchange: TSE
- Related Exchange: OSE
- Calculation Agent: Party A
- Expiration Time: Close
- Expiration Date: Valuation Date 07-01-2002
- Averaging: 1st of every month from Aug 2000 to March 2001.
- Market Disruption: Modified Postponement.
- Automatic Exercise: Applicable
- Cash Settlement: Applicable
- Settlement Currency: EUR
- Documentation: ISDA 2000 Definitions, ISDA 1996 Equity Derivative Definitions.
- Governing Law: English Law.

## ***6.7 Example 6 - Averaging In Long Form***

File: eqd\_ex06\_averaging\_in\_long\_form.xml

## **6.8 Example 7 - Barrier Knockout with Rebate Long Form**

File: eqd\_ex07\_barrier\_knockout\_rebate\_long\_form.xml

A European Call on Eurostoxx 50 Index traded on 1 July 2002.

- Trade Date: 1 July 2002
- Seller: Party A, Buyer: Party B
- Premium: EUR 405,000 on 30 July 2002 (5% of notional)
- Effective Date: 26 July 2002, At the money (ie. 100%)
- Notional: USD 8,000,000
- Valuation: Cash Close and Amount (if any) paid 3 Business Days following Expiration (in EUR).
- Expiration (11 October 2005)
- Calculation Agent: Party A
- Knock out Details: 26th July 2002 - 11th October 2005, at any time during each Business Day if 150% of Strike is hit then Party A pays to Party B EUR 880,000 3 Business Days following Expiration Date.
- Barrier Cap Details: 29th March 2002 - 12th July 2002 at 1,606.346 - triggers payment of EUR 15,000,000. Party A pays to B on 25th March 2002

## 6.9 Example 8 - Basket Long Form

File: eqd\_ex08\_basket\_long\_form.xml

A European call option on a basket of stocks.

- Trade Date: 28-05-2000
- Expiration: 01-07-2002
- Cash settled at exercise
- Option buyer: Party B
- Option seller: Party A
- Number of options: 79.099093
- Price per option: EUR 1363.1202 (paid by Party B)
- Premium: EUR 107,821.57
- Payment date: 03-07-2000
- Basket Currency: EUR
- Basket composition:
  - i) Ahold, initial level = 26.44, weighting = 20%, listed Amsterdam SE
  - ii) Royal Dutch Shell, initial level = 58.80, weighting = 40%, listed Amsterdam SE
  - iii) Fortis, initial level = 25.09, weighting = 20%, listed Amsterdam SE
  - iv) WoltersK, initial level = 22.12, weighting = 20%, listed Amsterdam SE
- Valuation: final close of underlying
- Automatic Exercise: applicable
- Calculation Agent: Party A



## ***6.10 Example 9 - Bermuda Long Form***

File: eqd\_ex09\_bermuda\_long\_form.xml

## **6.11 Example 10 - Binary Barrier Long Form**

File: eqd\_ex10\_binary\_barrier\_long\_form.xml

A European Call on S&P500 Index trade 25 March 2002:

- Trade Date: 25 March 2002
- Seller: Party A
- Buyer: Party B
- Strike Price: 900
- Notional: USD 1,000,000
- Premium: Party B pays EUR 405,000 on 25 March 2002
- Calculation Agent: Party A
- Valuation: Cash Close and Amount (if any) paid 3 Business Days following Expiration date (in EUR)
- Expiration date: 25 June 2002
- Barrier details: If, from 29th March 2002 to 12 July 2002 at the close of trading on the exchange on any Business Day a level of 1,606.346 is hit by the Index this triggers a payment of EUR 15,000,000 by Party B to Party A

## ***6.12 Example 11 - Quanto Long Form***

File: eqd\_ex11\_quanto\_long\_form.xml

## **6.13 Example 12 - Vanilla Short Form**

File: eqd\_ex12\_vanilla\_short\_form.xml

## ***6.14 Example 13 - 1996 American Call Stock***

File: eqd\_ex13\_1996\_american\_call\_stock.xml

## 7 Equity Swaps Examples

### ***7.1 Introduction***

This section contains example FpML trades for Equity Swaps. Each example illustrates how different product features are modeled in FpML.

The sample xml documents are available for download from the [fpml.org](http://fpml.org) website.

## 7.2 Example 1 - Single Underlyer Execution Swap Long Form

File: eqs\_ex01\_single\_underlyer\_execution\_long\_form.xml

On 24th September, 2002, Party A and Party B agree to an equity swap trade. The terms of the contract are:

- Trade Date: 24th September 2001
- Effective Date: 3 exchange business days after the trade date
- Valuation Dates: 12 valuation dates, starting on October 12th, 2001 and ending on September 24th, 2002
- Equity Payment Dates: 3 currency business days following each valuation date
- Termination Date: On the final equity payment date
- Payer of the Equity Amount: Party A
- Receiver of the Equity Amount: Party B
- Number of Underlyers: 1
- Underlyer Type: Equity
- Underlyer: Shire Pharmaceutical group
- Number of Underlying Units: 760,400
- Initial Price: USD 37.44
- Notional Amount: USD 28,469,376
- Type of Notional Adjustments: Execution
- Equity Amount: Defined according to the standard ISDA Definition
- Payment Currency for the Equity Amount: USD
- Interim Valuation Price: The official closing price of the regular session on the Exchange
- Final Valuation Price: The price at which Party A will unwind its hedge position
- Return Type: Total
- Dividend Payout Ratio: 100%
- Dividend Entitlement Date: Ex-Date
- Dividend Payment Date: The equity payment date on which the relevant dividend period ends
- Payer of the Interest Amount: Party B
- Receiver of the Interest Amount: Party A
- Floating Rate Reference: USD-LIBOR-BBA
- Maturity of the Floating Rate Reference: 1 month
- Spread: Minus 0.20% per annum
- Floating Rate Reset Date: The first day of each calculation period
- Floating Rate Day Count Fraction: Actual/360
- Interest Amount: Defined according to the standard ISDA Definition
- Payment Currency for the Interest Amount: USD
- Early Termination Option: Starting on Trade Date for Party A
- Early Termination Option: Starting on Trade Date for Party B

## 7.3 Example 2 - Composite Basket Swap Long Form

File: eqs\_ex02\_composite\_basket\_long\_form.xml

On 17th July, 2002, Party A and Party B agree to an equity swap trade. The terms of the contract are:

- Trade Date: 17th July 2002
- Effective Date: 3 exchange business days after the trade date
- Valuation Dates: 2 valuation dates, October 17th, 2002 and January 17th, 2003
- Equity Payment Dates: 3 currency business days following each valuation date
- Termination Date: On the final equity payment date
- Payer of the Equity Amount: Party A
- Receiver of the Equity Amount: Party B
- Number of Baskets: 1, with 6 equity constituents
- Underlyer - Number of Units: Telecom Italia, for 432,000 units
- Underlyer - Number of Units: Nokia Oyj, for 227,000 units
- Underlyer - Number of Units: Telecom Italia Mobile, for 783,000 units
- Underlyer - Number of Units: Telefonica de Espana, for 344,000 units
- Underlyer - Number of Units: Portugal Telecom, for 340,000 units
- Underlyer - Number of Units: Vodafone Group, for 2,486,000 units
- Initial Price: EUR 19,785,157.16
- Notional Amount: EUR 19,785,157.16
- Type of Notional Adjustments: Standard
- Equity Amount: Defined according to the standard ISDA Definition
- Payment Currency for the Equity Amount: The reference currency of the swap
- Interim Valuation Price: The official closing price of the regular session on the Exchange
- Final Valuation Price: The price at which Party A will unwind its hedge position
- Return Type: Total
- Dividend Payout Ratio: 85% for each of the underlying shares
- Dividend Entitlement Date: Ex-Date
- Dividend Payment Date: The equity payment date on which the relevant dividend period ends
- Reference Currency for the Composite FX Swap: EUR
- Determination Method for the Exchange Rate: Good faith by the calculation agent
- Payer of the Interest Amount: Party B
- Receiver of the Interest Amount: Party A
- Floating Rate Reference: EUR-EURIBOR-Telerate
- Maturity of the Floating Rate Reference: 3 months
- Spread: Plus 0.50% per annum
- Floating Rate Reset Date: The first day of each calculation period
- Floating Rate Day Count Fraction: Actual/360
- Interest Amount: Defined according to the standard ISDA Definition
- Payment Currency for the Interest Amount: The reference currency of the swap
- Early Termination Option: Starting on Trade Date for Party A
- Early Termination Option: Starting on Trade Date for Party B



## **7.4 Example 3 - Index Swap With a Quanto Feature Long Form**

File: eqs\_ex03\_index\_quanto\_long\_form.xml

On 19th July, 2002, Party A and Party B agree to an equity swap trade. The terms of the contract are:

- Trade Date: 19th July 2002
- Effective Date: 3 exchange business days after the trade date
- Valuation Dates: 4 valuation dates, starting on October 21st, 2002 and July 21st, 2003
- Equity Payment Dates: 3 currency business days following each valuation date
- Termination Date: On the final equity payment date
- Payer of the Equity Amount: Party A
- Receiver of the Equity Amount: Party B
- Number of Baskets: 1, with 3 index constituents
- Underlyer - Number of Units: CAC40, for 960 units
- Underlyer - Number of Units: IBEX35, for 260 units
- Underlyer - Number of Units: HSI, for 580 units
- Initial Price: USD 5,591,987.41
- Notional Amount: USD 5,591,987.41
- Type of Notional Adjustments: Standard
- Equity Amount: Defined according to the standard ISDA Definition
- Payment Currency for the Equity Amount: The reference currency of the swap
- Interim Valuation Price: The official closing price of the regular session on the Exchange
- Final Valuation Price: The price at which Party A will unwind its hedge position
- Return Type: Price
- Reference Currency for the Quanto: USD
- Currency Rate 1: USD/EUR = 0.99140
- Currency Rate 2: USD/HKD = 7.80
- Payer of the Interest Amount: Party B
- Receiver of the Interest Amount: Party A
- Floating Rate Reference: USD-LIBOR-Telorate
- Maturity of the Floating Rate Reference: 3 months
- Spread: Plus 0.22% per annum
- Floating Rate Reset Date: The first day of each calculation period
- Floating Rate Day Count Fraction: Actual/360
- Interest Amount: Defined according to the standard ISDA Definition
- Payment Currency for the Interest Amount: The reference currency of the swap
- Early Termination Option: Starting on Trade Date for Party A
- Early Termination Option: Starting on Trade Date for Party B

## 7.5 Example 4 - Zero-strike Equity Swap

File: eqs\_ex04\_zero\_strike\_long\_form.xml

On 17th October, 2002, Party A and Party B agree to an equity swap trade. The terms of the contract are:

- Trade Date: 17th October 2002
- Effective Date: 24th October, 2002
- Valuation Date: October 17th, 2003
- Equity Payment Dates: 5 currency business days following the valuation date
- Termination Date: On the final equity payment date
- Payer of the Equity Amount: Party A
- Receiver of the Equity Amount: Party B
- Number of Underlyers: 1
- Underlyer Type: Equity
- Underlyer: Zee
- Number of Underlying Units: 31,000
- Initial Price: USD 1.8036
- Notional Amount: EUR 55,911.60
- Type of Notional Adjustments: Standard
- Equity Amount: Final Price \* Number of shares
- Payment Currency for the Equity Amount: The reference currency of the swap
- Final Valuation Price: The price at which Party A will unwind its hedge position
- Commissions: 60 basis points
- Return Type: Total
- Dividend Payout Ratio: 100%
- Dividend Entitlement Date: Ex-Date
- Dividend Payment Date: The equity payment date on which the relevant dividend period ends
- Reference Currency for the Composite FX Swap: USD
- Determination Method for the Exchange Rate: Good faith by the calculation agent
- Initial Amount Payable: USD 55,911.60
- Initial Amount Payer: Party B
- Initial Amount Payment Date: The effective date
- Early Termination Option: Starting on Trade Date for Party A
- Early Termination Option: Starting on Trade Date for Party B

## **7.6 Example 5 - Single Underlyer Swap with an Upfront Fee as well as a Brokerage Fee Long Form**

File: eqs\_ex05\_single\_stock\_plus\_fee\_long\_form.xml

On 10th September, 2002, Party A and Party B agree to an equity swap trade. The terms of the contract are:

- Trade Date: 10th September 2002
- Effective Date: 12th September 2002
- Valuation Date: March 12th, 2003
- Equity Payment Dates: 2 currency business days following the valuation date
- Termination Date: On the final equity payment date
- Payer of the Equity Amount: Party A
- Receiver of the Equity Amount: Party B
- Number of Underlyers: 1
- Underlyer Type: Equity
- Underlyer: Fubon Financial Holding
- Number of Underlying Units: 18,388,000
- Initial Price: Average price per share obtained by Party B on Trade Date by selling the shares in the market
- Commissions: 30 basis points
- Notional Amount: Number of shares \* Initial price
- Type of Notional Adjustments: Standard
- Equity Amount: Defined according to the standard ISDA Definition
- Payment Currency for the Equity Amount: USD
- Final Valuation Price: The price at which Party A will unwind its hedge position
- Return Type: Total
- Dividend Payout Ratio: Will correspond to the dividend actually received by a non-resident of Taiwan.
- Dividend Entitlement Date: Ex-Date
- Dividend Payment Date: The equity payment date on which the relevant dividend period ends
- Reference Currency for the Composite FX Swap: USD
- Determination Method for the Exchange Rate: Good faith by the calculation agent
- Payer of the Interest Amount: Party B
- Receiver of the Interest Amount: Party A
- Floating Rate Reference: USD-LIBOR-BBA
- Maturity of the Floating Rate Reference: 6 months
- Floating Rate Reset Date: The first day of each calculation period
- Floating Rate Day Count Fraction: Actual/360
- Interest Amount: Defined according to the standard ISDA Definition
- Payment Currency for the Interest Amount: USD
- Early Termination Option: Starting on Trade Date for Party A
- Early Termination Option: Starting on Trade Date for Party B
- Upfront Fee Amount:  $(18,388,000 * \text{Initial Price} * 6.5\%) + 0.63\%$
- Upfront Fee Payment Date: Effective date
- Upfront Fee Payer: Party B
- Brokerage Fee Amount: USD 1,000
- Brokerage Fee Payment Date: 30th September 2002
- Payer of the Brokerage Fee: Party A
- Receiver of the Brokerage Fee: Party C

## ***7.7 Example 6 - Single Index Long Form***

File: eqs\_ex06\_single\_index\_long\_form.xml

## **7.8 Example 7 - Single Underlyer Swap with both an Initial and a Final Stub**

File: eqs\_ex07\_long\_form\_with\_stub.xml

On 17th July, 2002, Party A and Party B agree to an equity swap trade. The terms of the contract are:

- Trade Date: 17th July 2002
- Effective Date: 20th July 2002
- Valuation Dates: Monthly, from 2002-07-26 to 2004-07-15
- Equity and Interest Payment Dates: 3 currency business days following the valuation date
- Termination Date: On the final equity payment date
- Initial Stub: starts on the swap effective date and goes to 2002-08-01 (aka the 1st payment date); the rate is fixed at 2.125%
- Final Stub: starts on 2004-07-01 (aka the payment date before the last) and goes to the termination date; the rate is float and corresponds to a 1 week Euribor + 50 bp

## 8 Equity Forwards Examples

### ***8.1 Introduction***

This section contains example FpML trades for Equity Forwards. Each example illustrates how different product features are modeled in FpML.

The sample xml documents are available for download from the [fpml.org](http://fpml.org) website.

## ***8.2 Example 1 - Equity Forward Stock Long Form***

File: eqf\_ex01\_forward\_stock\_long\_form.xml

## **9 Variance Swaps Examples**

### ***9.1 Introduction***

This section contains example FpML trades for Equity Variance Swaps. Each example illustrates how different product features are modeled in FpML.

The sample xml documents are available for download from the [fpml.org](http://fpml.org) website.



## ***9.2 Example 1 - Variance Swap Index***

File: eqvs\_ex01\_variance\_swap\_index.xml

### ***9.3 Example 2 - Variance Swap Single Stock***

File: eqvs\_ex02\_variance\_swap\_single\_stock.xml

## 10 Pricing and Risk Examples

### 10.1 Use Cases/Examples

This section identifies scenarios intended to be supported by this specification:

#### 10.1.1 Terminology:

- Client: The originator of a valuation request.
- Provider: The acceptor of a valuation request that generates a valuation report.
- Valuation Request: XML document that specifies what is to be calculated.
- Valuation Report: XML document that contains the results of a valuation. This report may contain either one or more NPVs, or Risk related measures, or both.

#### 10.1.2 Request/Response scenarios:

In these scenarios one party to a deal requests a report from either a counterparty, third party service, or another application or department within the same firm.

##### 10.1.2.1 Scenario 1 – Request Trade Value

A client wants to request a price quote for a proposed trade from a provider (or set of providers). The provider might be anonymous to the client. Typically the provider would be some sort of dealer. The client may be another dealer or an electronic trading service.

- No market data is necessary in the request.
- No market data is returned in the result.
- Market data is assumed to be live or current market data.

##### 10.1.2.1.1 Use Case 1 Description

Client submits a request, including:

- The trade details – for an interest rate swap
- A specification of the required results: Characteristics of the response: Base party for valuation (client) Reporting Currency Valuation Date Requested values Trade Value (NPV)
- Examples can be found at: pr\_ex01a\_request\_trade\_val.xml  
pr\_ex10\_simple\_scenario\_val\_request.xml

Provider returns a basic valuation report, including:

- Trade ID
- Valuation report, including Characteristics of the valuation, e.g. Valuation Date Base Party Reporting currency Trade Value
- Examples can be found at: pr\_ex01a\_return\_trade\_val.xml  
pr\_ex09\_simple\_scenario\_val\_report.xml

##### 10.1.2.2 Scenario 2 – Request Portfolio Value/Sensitivity

A buy-side client wants to request a valuation from a dealer for a deal or portfolio of deals that it has done with that dealer. This request may be also be all deals of a specific type (IR Swaps, CD Swaps, Equity Swaps, FX options, etc.)

- No market data is necessary in the request.
- No market data is returned in the result.
- Market data is for a specified end-of-day close.

Variations on Scenario 2:

- B) The client wants to obtain sensitivity measures as well as simple PV

#### 10.1.2.2.1 Use Case 2A Description

Client submits a request, including:

- The portfolio details – characteristics that the trade must match One party must be client Product must be an IR Swap
- A specification of the required results: Characteristics of the response: Base party for valuation (client) Reporting Currency Valuation Date Requested values Trade Value (NPV)
- An example can be found at: pr\_ex02a\_request\_port\_val.xml

Provider returns a basic valuation report, including:

- Portfolio contents (i.e. list of matching trades)
- Valuation report, including Characteristics of the valuation, e.g. Valuation Date Base Party Reporting currency For each trade, Trade Value
- An example can be found at: pr\_ex02a\_return\_port\_val.xml

#### 10.1.2.2.2 Use Case 2B Description

Client submits a request, including:

- The portfolio details – list of trade ids to report on
- A specification of the required results: Characteristics of the response: Base party for valuation (client) Reporting Currency Valuation Date Requested values Trade Value (NPV) Sensitivity of NPV to yield curve
- An example can be found at: pr\_ex02b\_request\_port\_val\_and\_sens.xml

Provider returns a basic valuation report, including:

- Portfolio contents (i.e. list of matching trades)
- Valuation report, including Characteristics of the valuation, e.g. Valuation Date Base Party Reporting currency For each trade, Trade Value List of sensitivities
- An example can be found at: pr\_ex02b\_return\_port\_val\_and\_sens.xml

#### 10.1.2.3 Scenario 3 – Request Sensitivity Generation

A relatively sophisticated client wants to calculate risk sensitivities and/or scenario valuations for a portfolio of deals that it can price, but either doesn't have the tools or the compute power for sensitivity or scenario calculation.

- Market data is specified in the request.
- A level of control is required over pricing parameters

Provider doesn't need to provide market data back

Variations on Scenario 3:

- 3B – Client wants market data back and explicit link of risk to market data
- 3C Client specifies scenarios to base market data (live or EOD) – e.g. +/- 10% credit spread, +/- 10BP interest rate change

#### 10.1.2.3.1 Use Case 3A Description

Client submits a request, including:

- The portfolio details – list of trade ids to report on
- A specification of the required environment (curves to use)
- A specification of the required results: Characteristics of the response: Base party for valuation (client) Reporting Currency Valuation Date Requested values Trade Value (NPV) Sensitivity of

NPV to yield curve

- An example can be found at: [pr\\_ex03a\\_request\\_sensitivity\\_generation.xml](#)

Provider returns a detailed valuation report, including:

- Portfolio contents (i.e. list of matching trades)
- Valuation report, including Characteristics of the valuation, e.g. Valuation Date Base Party Reporting currency For each trade, Trade Value List of sensitivities
- A basic example can be found at: [pr\\_ex03a\\_return\\_sensitivities.xml](#)
- An example providing slightly more detail about the sensitivities can be found at: [pr\\_ex03a\\_return\\_sensitivities\\_and\\_description.xml](#)

#### 10.1.2.3.2 Use Case 3B Description

Client submits a request, including:

- The portfolio details – list of trade ids to report on
- A specification of the required environment (curves to use)
- A specification of the required results: Characteristics of the response: Base party for valuation (client) Reporting Currency Valuation Date Requested values Trade Value (NPV) Sensitivity of NPV to yield curve That the client wishes the market environment returned (marketEnvironmentIncluded = true).
- An example can be found at: [pr\\_ex03b\\_request\\_sensitivity\\_generation.xml](#)

Provider returns a detailed valuation report, including:

- Portfolio contents (i.e. list of matching trades)
- Valuation report, including Characteristics of the valuation, e.g. Valuation Date Base Party Reporting currency For each trade, Trade Value Sensitivity definitions List of sensitivities, linked to market inputs
- An example can be found at: [pr\\_ex03b\\_return\\_sensitivities\\_with\\_definition.xml](#)

#### 10.1.2.3.3 Use Case 3C Description

Client submits a request, including:

- The portfolio details – list of trade ids to report on
- A specification of the required environment (curves to use)
- A specification of the valuation scenario to use (shifts to apply)
- A specification of the required results: Characteristics of the response: Base party for valuation (client) Reporting Currency Valuation Date Requested values Trade Value (NPV) Sensitivity of NPV to yield curve That the client wishes the market environment returned (marketEnvironmentIncluded = true). Examples can be found at:  
[pr\\_ex12\\_uc4C\\_sens\\_on\\_scenario\\_request.xml](#) [pr\\_ex08\\_sens\\_on\\_scenario\\_request.xml](#)  
[pr\\_ex04\\_cds\\_sens\\_on\\_scenario\\_request.xml](#) [pr\\_ex06\\_option\\_sens\\_on\\_scenario\\_request.xml](#)

Provider returns a detailed valuation report, including:

- Portfolio contents (i.e. list of matching trades)
- Valuation report, including Characteristics of the valuation, e.g. Valuation Date Base Party Reporting currency Valuation scenario applied For each trade, Trade Value Sensitivity definitions List of sensitivities, linked to market inputs Examples can be found at:  
[pr\\_ex11\\_uc4C\\_sens\\_on\\_scenario\\_report.xml](#) [pr\\_ex07\\_sens\\_on\\_scenario\\_report.xml](#)

#### 10.1.2.4 Scenario 4 – Request New Trade Impact

A buy-side client wants to understand the impact on valuation and risk exposure that a proposed deal would

have on an existing portfolio. The provider may be the dealer that is proposing the trade.

This use case is implemented by the client requesting the result twice. The first request includes the original portfolio only, and the second includes the new trade. The requesting party should combine the two results.

For all additive valuations and risk measures, the second call can include only the new trade. For results which are not additive, e.g. value at risk, the second request includes also the original portfolio.

#### **10.1.2.5 Scenario 5 – Perform Analyses**

A trader or marketer oriented spreadsheet client wants to value and calculate risk for a trade or set of trades. The valuation provider is an internal valuation service.

- Market data may or may not be specified in the request.
- Market data and pricing data is returned in the result.
- A high-degree of control is required over pricing parameters.
- No example is currently available for this.

##### **10.1.2.5.1 Use Case 5A Description**

Client submits a request, including:

- The portfolio details – list of trade ids to report on
- A specification of the required environment (curves to use)
- A specification of the required results: Characteristics of the response: Base party for valuation (client) Reporting Currency Valuation Date Requested values Trade Value (NPV) Sensitivity of NPV to yield curve Sensitivity of NPV to vol surface [How does the client specify that provider should return the market environment?]
- No example is currently available for this.

Service returns a detailed valuation report, including:

- Portfolio contents (i.e. list of matching trades)
- Market environment used (curves, vol surfaces)
- Valuation report, including Characteristics of the valuation, e.g. Valuation Date Base Party Reporting currency Valuation scenario applied For each trade, Trade Value Sensitivity definitions List of sensitivities, linked to market inputs
- No example is currently available for this.

#### **10.1.2.6 Scenario 6 – Request Pricing Inputs**

The use cases in this scenario are out of scope for this working draft, but are expected to be covered in an upcoming draft. This means that there is no schema support for these requests and responses, and there are no examples provided. The use case descriptions are provided as an indication of the functionality that is intended to be supported in the future.

A party is requesting a curve of a specific type (IR, Credit, Asset, etc.) Most likely this would be an internal request between applications within the same firm.

- Market data and other pricing data may be required in the report.

Client submits a market input request, including:

- Market environment characteristics to respond with Environment Name Currency Input Type (yield curves, vol surfaces) Valuation date
- A specification of the required results: Requested values Definitions (e.g. curve definitions) Input values Output values (DFs, Zeros, etc.) No example is currently available for this.

Service returns a market environment, including:

- Market environment(s) including Yield curves Vol Surfaces
- No example is currently available for this.

### 10.1.3 Notification Scenarios

In these scenarios a party, service or internal system sends out reports without being first solicited to do so. Parameters that should be agreed upon between the sending and receiving parties should include: counterparty, deal types, when the report is sent, supporting information such as FX rates, risk sensitivities, etc.. Parties should also agree what, if any acknowledgement of receipt should be sent by the receiving party.

#### 10.1.3.1 Position Report

Supports the DSWG Position Report representation:

- pr\_ex13\_position\_report.xml

#### 10.1.3.2 Use Case 7:

An internal middle or back office system needs a feed of valuation (and perhaps risk sensitivities) from a variety of systems, in the form of valuation reports.

- No explicit valuation request
- Market data and other pricing data may be required in the report.

#### 10.1.3.3 Use Case 8:

A service or broker may provide a feed of valuation (and perhaps risk sensitivities) to their clients on a regularly scheduled basis.

- No explicit valuation request
- Market data and other pricing data may be required in the report.