FpML.org
Financial products Markup Language

FpML Version 1.0
Recommendation 14 May 2001

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Latest version:

http://www.fpml.org/spec/fpml-1-0

Previous version:

http://www.fpml.org/spec/2001/tr-fpml-1-0-2001-03-12

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Status of this Document:

This is the FpML Version 1.0 Recommendation, which has been reviewed by FpML.org members and other interested parties and has been endorsed by the FpML Standards Committee as an FpML Recommendation. It is a stable document and may be used as reference material or cited as a normative reference from another document. FpML.org's role in making the Recommendation is to draw attention to the specification and promote its widespread deployment.

Some minor changes and corrections have been made between the previous version of this document (FpML 1.0 Trial Recommendation 12 March 2001) and this version. These are listed in the Appendix to this document.

Comments on this document, including reporting of errors, should be sent to fpml-issues@yahoogroups.com. An archive of the comments is available at http://groups.yahoo.com/group/fpml-issues/messages. The errata list for this specification is available at http://groups.yahoo.com/group/fpml-issues/files/rec-fpml-1-0-2001-05-14-errata.html.

Public discussion of FpML takes place on the FpML Discussion List at http://groups.yahoo.com/group/fpml-discuss.

A list of current FpML Recommendations and other technical documents can be found at http://www.fpml.org/spec.

This document was produced by the Products Working Group, with contributions from the Architecture Working Group, and updates made by the IRD Products Working Group, as part of the FpML 1.0 Activity and is part of the FpML Standards Approval process. The FpML Board of Directors initiated this Activity in November 1999 to produce a limited scope standard covering trade content definitions for interest rate derivatives, and a more general architecture for FpML.

Working Group Members and Acknowledgements:

This specification was produced by the Products Working Group with contributions from the Architecture Working Group. The following members of the Products Working Group contributed to the creation of this document.

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1 INTRODUCTION

The Financial Products Markup Language (FpML) is a new protocol enabling e-commerce activities in the field of financial derivatives. The development of the standard, controlled by market participant firms, will ultimately allow the electronic integration of a range of services, from electronic trading and confirmations to portfolio specification for risk analysis. All types of over-the-counter (OTC) derivatives will, over time, be incorporated into the standard, although the initial focus is vanilla interest rate derivatives.

FpML is an *application* of XML, an internet standard language for describing data shared between computer applications.

2 SCOPE

2.1 Scope

The scope of the Products Working Group is to:

- Complete the definition of the trade content of an interest rate swap supporting the following features:
  - Compounding
  - Averaging
  - Principal Payments (to support cross-currency swaps)
  - Notional Amortization
  - Step-up and Step-down Coupon and Spread Schedules
  - Additional Fees and Payments

- Complete the definition of the trade content of a forward rate agreement (FRA).

Guidelines on precision for rate and currency amount representations within an FpML document are not currently defined in the Recommendation. These have been deferred, pending further implementation experience.

Outside the scope of the Products Working Group are the following:

- Definition of business processes that might result in the trade content defined here being transmitted between parties. The definition of these processes and resulting messages is expected to be covered by the work of other FpML Working Groups, for example, by the Business Message and Architecture Working Group formed in December 2000.

- Definition of reference data related to the counterparty such as settlement instructions, location and contact details. It was agreed that this static data did not belong in each instance of an FpML document and would most likely be stored in central or distributed repositories and referenced from within the document. Specification or design of such repositories is also beyond the scope of the Products Working Group. Since identification of parties is an essential requirement of a trade content definition, the FpML Consortium has decided, for this release, to identify parties using the ISO standard bank identifier code (BIC). S.W.I.F.T. is the designated registration authority for the assignment of BIC codes. Although this is the recommended identification scheme for parties wishing to use FpML for inter-firm communication, the FpML architecture supports the use and identification of alternative coding schemes through the Schemes mechanism.

2.2 Architecture Framework

The Products Working Group has developed FpML 1.0 within the FpML Architecture Version 1.0 framework defined by the Architecture Working Group. Their recommendations covered:

- XML tools for editing and parsing
- XML namespace usage within FpML 1.0
- FpML versioning methodology
- FpML content model - a new style for representing the FpML Document Type Definition (DTD)

- FpML referencing methodology, including guidelines for referencing coding schemes.

The Products Working Group has submitted the candidate DTD and sample FpML to the Architecture Working Group and has received confirmation that both the DTD and the sample FpML are compliant with the architectural recommendations.

The sample FpML in this specification has been validated in the following XML parsers and tools:

- Microsoft's Internet Explorer 5
- Sun Microsystems' XML Parser 1.0
- Vervet's XML Pro 2.0 (which uses the IBM XML4J Parser)
- Xerces Java Parser 1.0.3 (developed as part of the Apache XML Project).

TIBCO Extensibility's XML Authority 1.1 Schema design tool has been used in the preparation of the DTD and generation of the DTD graphical representations used in this specification.

3 PRODUCT ARCHITECTURE OVERVIEW

3.1 Introduction

FpML incorporates a significant level of structure, rather than being a 'flat' representation of data. This structuring is achieved through the grouping of related elements describing particular features of a trade into components. Components can both contain, and be contained by, other components.

An alternative approach would have been to collect all the required elements in a single large component representing a product or trade. A flat structure of this kind would capture all the relevant information concisely but would also constrain the model in two important respects, namely, ease of implementation and extensibility.

Grouping related elements into components makes it easier to validate that the model is correct, that it is complete and that it doesn't contain redundancy. This is true, both from the perspective of readability to the human eye, and also from the perspective of processing services. Processing services that do not need all the information in a trade definition can isolate components and be sure that the complete set of elements required, and only the elements required, is available for the particular process in hand.

Components additionally serve as the building blocks for a flexible and extensible model. Generally speaking, the complexity of financial products is a result of combining a few simple ideas in a variety of different ways. The component structure supports a trade content definition that is flexible enough to represent the wide variation of features found in traded financial instruments.

It should be noted that the application of the guiding principles of extensibility and ease of use has resulted in a different approach with regard to the forward rate agreement. Because this product is straightforward, commoditized and unlikely to develop further, the advantage to be gained from the extensive use of components is outweighed by the concision of a single component.

3.2 Component Framework

The optimum level of granularity is important to FpML. FpML separates the elements which collectively describe a feature of a product or trade into a separate component with each component serving a particular semantic purpose. Every grouping of elements in FpML is regarded as a component and each component is regarded as a container for the elements that describe that component. In the majority of cases each component will contain a mixture of other components and primitive elements, e.g. a date or string, that collectively describe the features of the component. Components are typically represented in the FpML Document Type Definition (DTD) as XML entities.

Generally speaking, the lower-level a component is, the more re-usable it will be. FpML makes use of a number of primitive entity components that describe the basic building blocks of financial products, for example, `FpML_Money`, `FpML_AdjustableDate`, `FpML_BusinessCenters`, `FpML_Interval`, `FpML_BusinessDayAdjustments` etc. These primitive components are re-used in different business contexts.

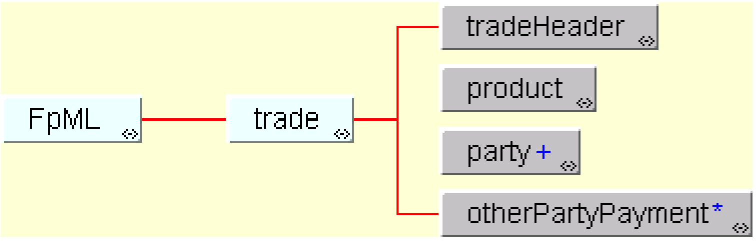
Primitive components are contained in higher level components that describe the features of particular products. For this reason these higher level components will tend not to be re-usable to the same extent. Examples within the definition of `swapStream` are the components required to construct schedules of dates such as calculationPeriodDates, resetDates and paymentDates. However, it should not be inferred from this that any fundamental distinction is drawn between components in usage or structure.

3.3 Overview of Core Trade Components

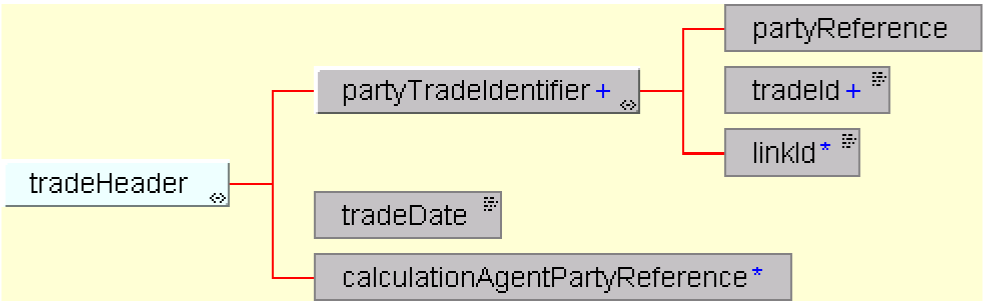
3.3.1 The Trade Component

The trade is the top-level component within the root element FpML. A trade is an agreement between two parties to enter into a financial contract and the trade component in FpML contains the economic information necessary to execute and confirm that trade. A trade contains four components: tradeHeader, product, party (two or more instances) and otherPartyPayment (zero or more instances).

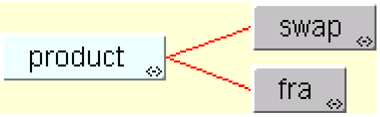
(See Section 4.1, Interpreting the Diagrams, for an explanation of the graphical DTD representation shown in the following schematics)



- **tradeHeader** - The information within tradeHeader will be common across all types of trade regardless of product. In FpML 1.0 this contains the trade date, party trade identifiers and any calculation agent references.

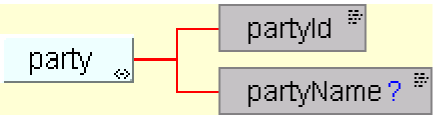


- **product** – The product definition appropriate for the type of trade. This is currently restricted in FpML 1.0 to being either a swap or an fra component. These contain the economics of the trade and are described in more detail below.

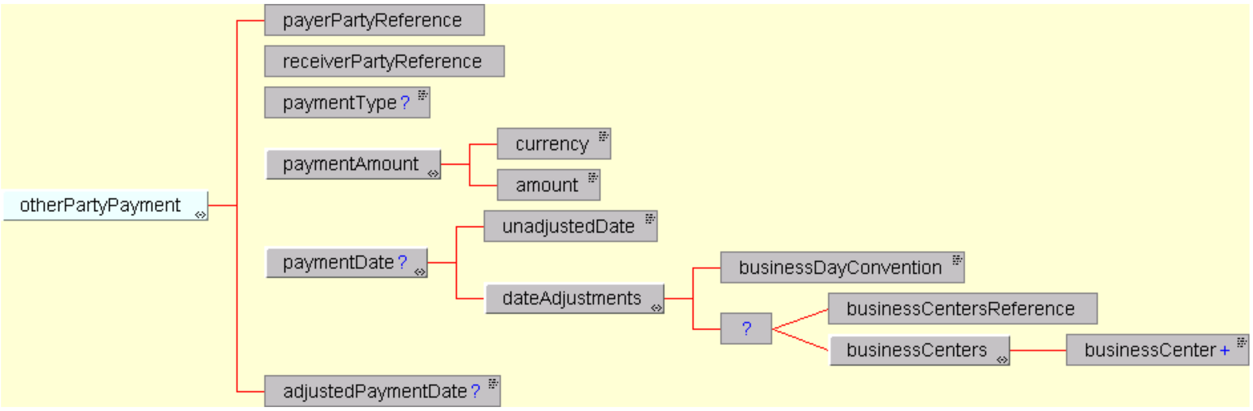


- **`party`** - The `party` component holds information about a party involved in the trade. The parties involved will be the principals to the trade and potentially additional third parties such as a broker. For this release, this component is restricted to party identification.

  It should be noted that an FpML document is not 'written' from the perspective of one particular party, i.e. it is symmetrical with respect to the principal parties. The particular role that a party plays in the trade, e.g. buyer, seller, stream payer/receiver, fee payer/receiver, is modeled via the use of references from the component where the role is identified to the `party` component.



- **`otherPartyPayment`** – This component contains additional payments such as brokerage paid to third parties which are not part of the economics of a trade itself.



3.3.2 The Product Component

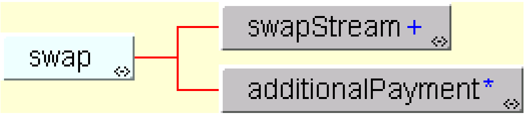
The product component specifies the financial instrument being traded. This component captures the economic details of the trade. Because of the complexity of the OTC Interest Rate Derivatives domain that FpML 1.0 covers, composing these products from various building blocks is a key aspect of the design approach.

FpML 1.0 focuses on the instrument definitions for interest rate swaps (including cross currency swaps) and forward rate agreements. For this initial release, a `trade` is restricted to containing only a single product definition. However, in future releases it may be possible to specify more than one financial instrument.

Interest Rate Swap

A `swap` component contains two or more instances of the `swapStream` component and zero or more instances of the `additionalPayment` component. A `swapStream` contains the elements required to define an individual swap leg.

Within FpML there is no concept of a swap header. With the exception of `additionalPayment`, which can contain fees, it is not possible to define information separately from the swap leg definitions. The `additionalPayment` component is identical to the `otherPartyPayment` component shown above.



FpML supports two representations of a swap stream; a parametric representation, and a cashflows representation. The parametric representation is designed to capture all the economic information required regarding dates, amounts and rates to allow trade execution and confirmation. The parametric representation is mandatory. The cashflows representation specifies an optional additional description of the same stream. The cashflows representation is not self contained as it relies on certain information contained within the stream's parametric definition. The elements required from the parametric definition to complete the cashflows representation are:

- The following elements and their sub-elements within the `calculationPeriodAmount` element:
  - `floatingRateIndex`
  - `indexTenor`
  - `rateTreatment`
  - `finalRateRounding`
  - `averagingMethod`
  - `negativeInterestRateTreatment`
  - `dayCountFraction`
  - `discounting`
  - `compoundingMethod.`

- The following elements and their sub-elements within the `stubCalculationPeriodAmount` element:
  - `floatingRateIndex`
  - `indexTenor.`

The inclusion of the cashflows representation is intended to support application integration. For example, a financial institution may have one application that captures trade parameters and constructs the trade schedules and then publishes the result for use by other applications. In this case it may be either undesirable, or impossible, for each of the subscribing applications to store and calculate schedules.

The flexibility of the cashflows representation also allows payment and calculation schedules which can not be fully represented by the parametric description. If this situation arises, the mandatory parametric data should still be included in the document and the flag `cashflowsMatchParameters` should contain the value `false` to indicate that it is not possible to generate the cashflows from this parametric data.

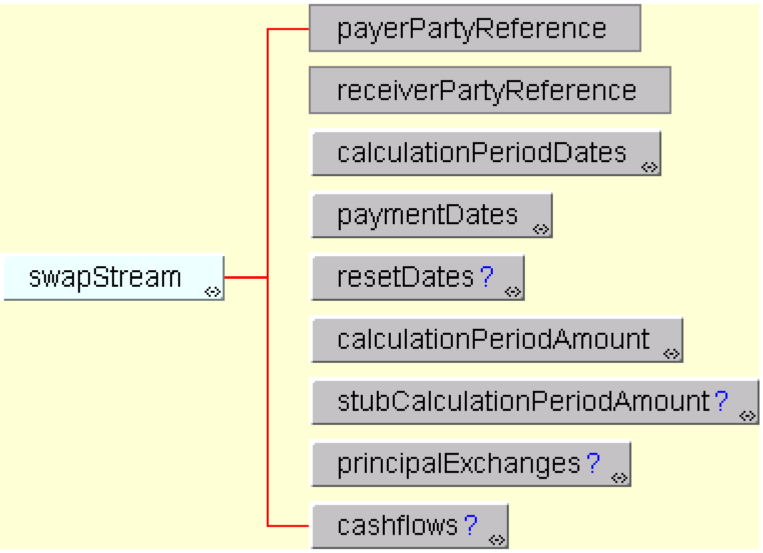
For FpML documents intended for interchange between parties, if the optional cashflows are included, the flag `cashflowsMatchParameters` should contain the value `true` and therefore the parametric and cashflows representation of the stream must be consistent.

Organizations wishing to take advantage, for internal communications, of the facility for specifying cashflows which are inconsistent with the parametric representation will need to specify additional rules for how the parametric representation should be processed. This applies to both the creation of the parametric data as well as its interpretation.

The cashflows representation specifies adjusted dates, that is, dates that have already been adjusted for the relevant business day convention using the relevant set of business day calendars (lists of valid business days for each business center). The FpML standard does not specify the source of these business day calendars. This may lead applications to generate differing cashflow representations from the same parameteric representation if they use different business day calendars. The use of adjusted dates also produces schedules that are only valid at a particular instance of time. Additional holidays for a business center may subsequently be introduced that would result in changes to the adjusted dates, which would not be reflected in the cashflows representation.

In general, an interest rate swap will be a swap with a fixed leg and a floating leg, two floating legs, or two fixed legs. However, certain types of trades may contain more than two legs. FpML 1.0 does not restrict the number of legs that may be defined. From a modeling perspective, FpML does not distinguish between a swap leg referencing a fixed rate and a swap leg referencing a floating rate, the difference being indicated by the existence, for example, of the `resetDates` component in a floating rate leg.

The structure of a `swapStream` is shown diagrammatically below:



The components within a `swapStream` cannot be randomly combined and cannot be thought of as existing in their own right; they only make sense in the given context and in relationship to other components within the `swapStream` container.

In FpML, the schedule of dates within a `swapStream` is based around the `calculationPeriodDates` component. The definition of a calculation period in FpML differs in some respects from the International Swaps and Derivatives Association (ISDA) definition of Calculation Period. In the case of a trade involving compounding, ISDA introduces the concept of a Compounding Period, with several Compounding Periods contributing to a single Calculation Period. The FpML calculation period is equivalent to the ISDA definition of Compounding Period when compounding is applicable, i.e. the calculation period frequency will correspond to the compounding frequency. An

FpML calculation period is directly comparable to the ISDA defined Calculation Period when only one calculation period contributes to a payment.

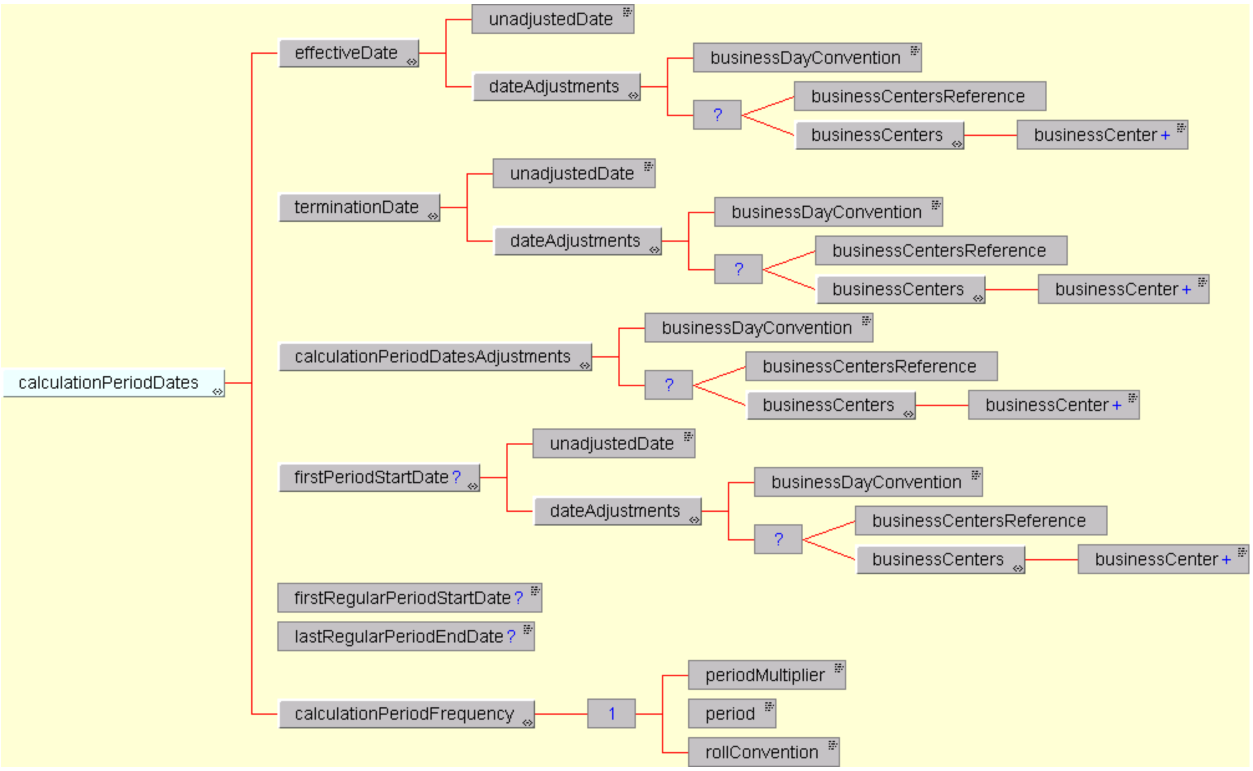
The other date components within `swapStream` are related to the `calculationPeriodDates` component. The `paymentDates` and `resetDates` components contain the information necessary to construct a schedule of payment and reset dates relative to the calculation period dates.

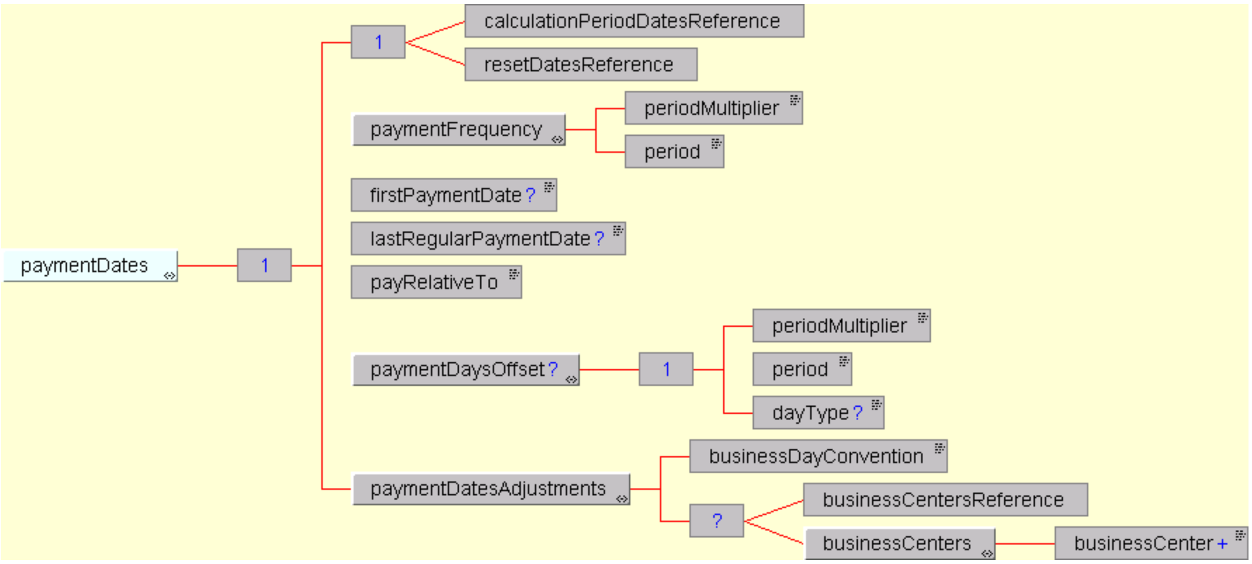
The information relating to amounts and rates is collected in the `calculationPeriodAmount` and `stubCalculationPeriodAmount` components.

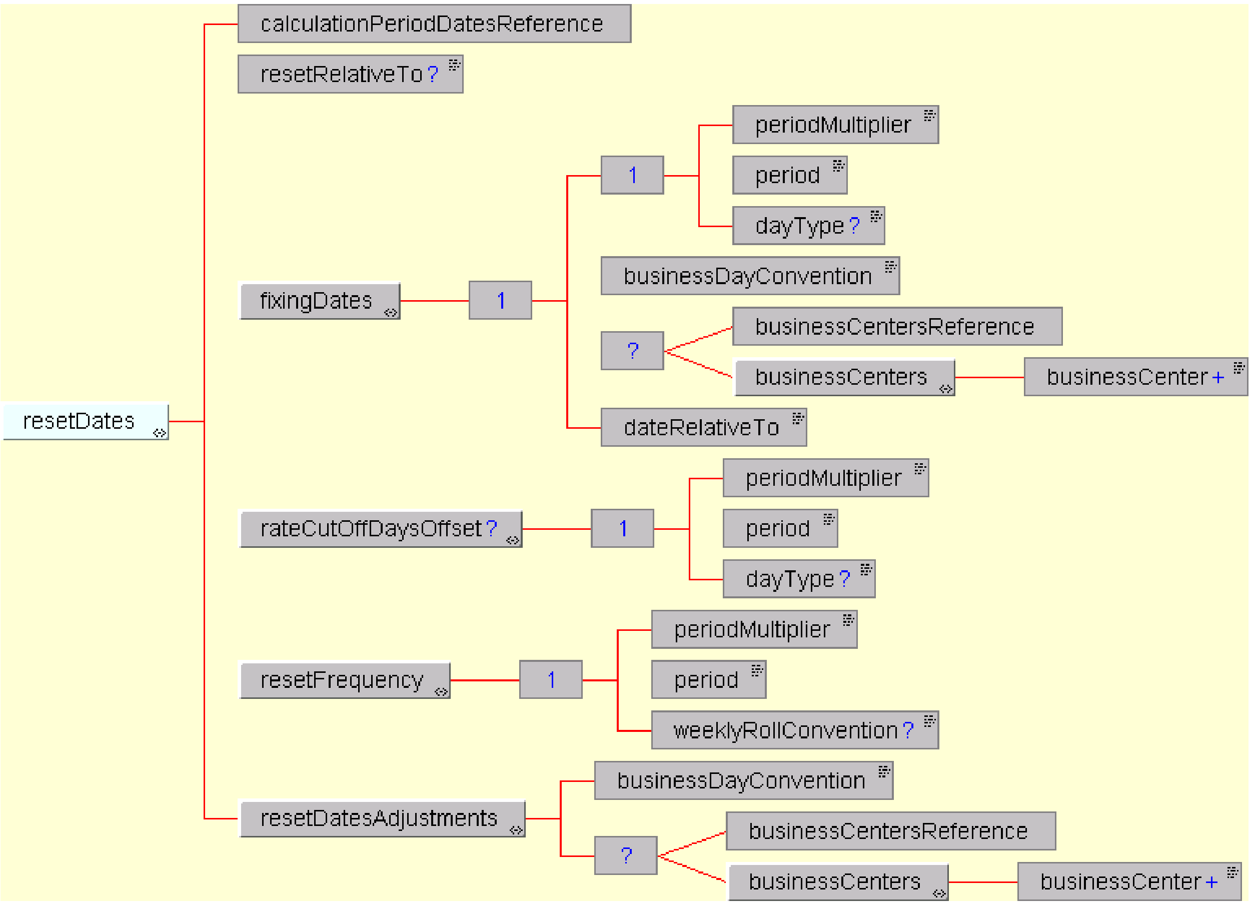
Certain `swapStream` components are designated as being optional (although it would be more accurate to say that they are conditional). Thus a fixed rate stream never includes a `resetDates` component, but this is required for a floating rate stream. Similarly, the `stubCalculationPeriodAmount` component will be required if the swap leg has either an initial or final stub, or indeed both, but should otherwise not be specified. The `principalExchanges` component is required in the case of cross currency swaps or other types of swap involving exchanges of principal amounts.

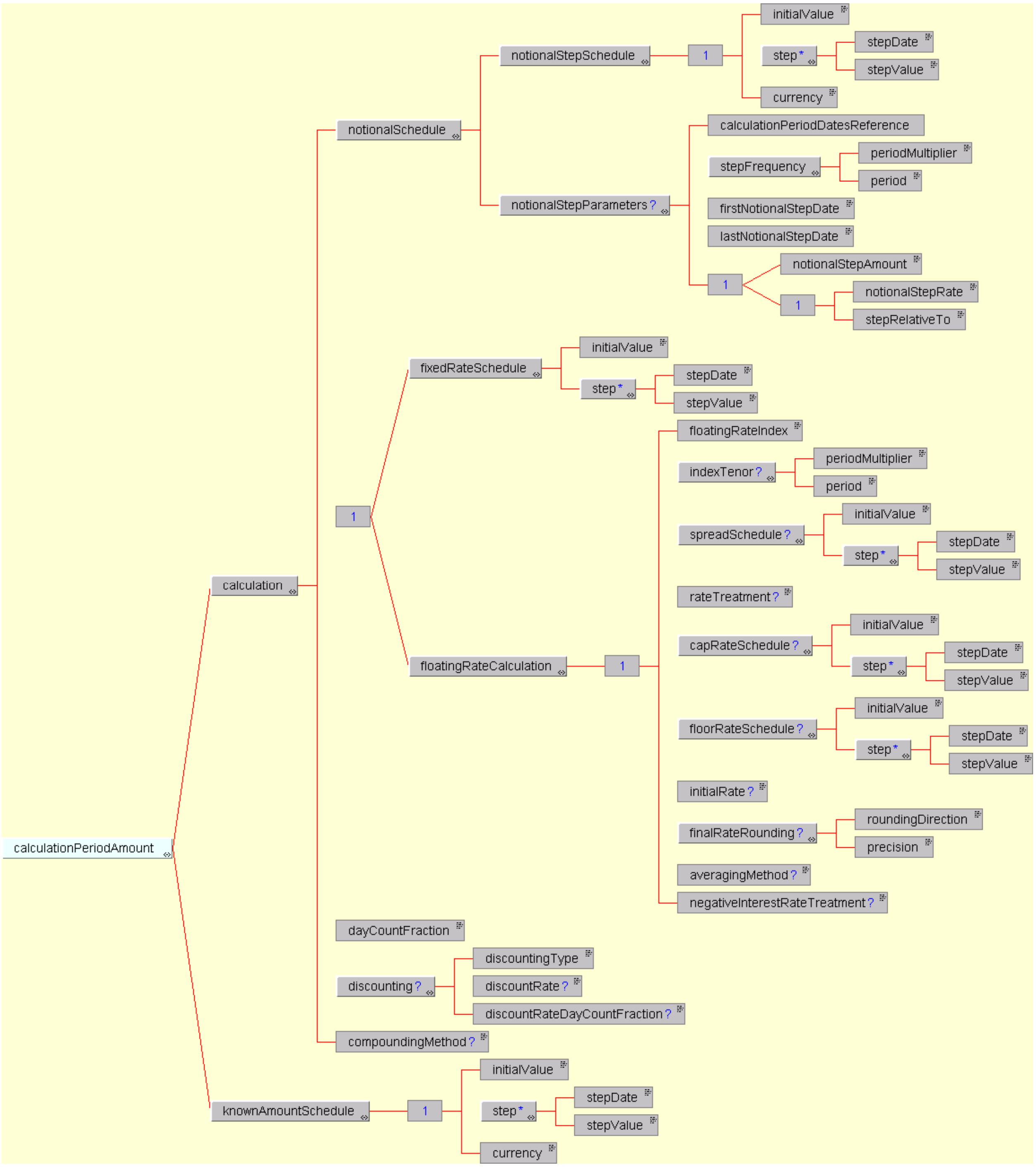
The `payerPartyReference` and `receiverPartyReference` elements indicate which party is paying and which receiving the stream payments. This is done by referencing the appropriate party within the `party` component.

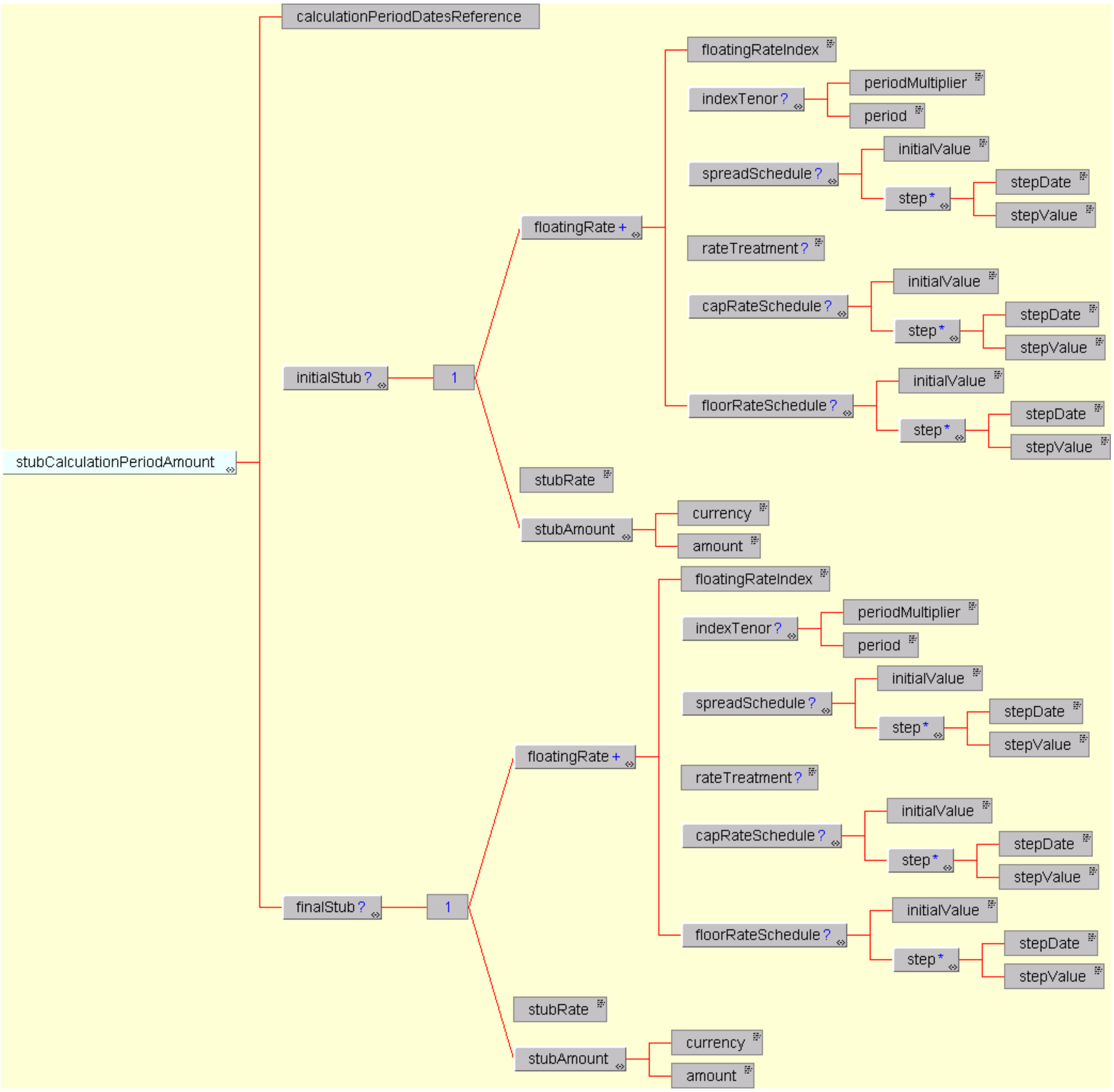
The detailed structures within the `swapStream` are shown diagrammatically below:

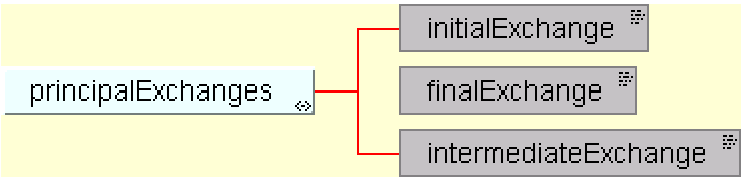


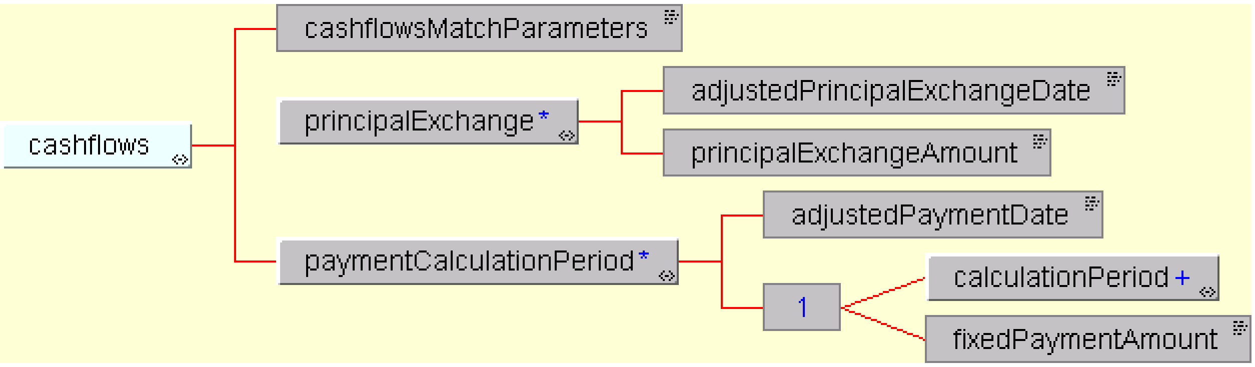

paymentDates
1
1
calculationPeriodDatesReference
resetDatesReference
paymentFrequency
periodMultiplier
period
firstPaymentDate ?
lastRegularPaymentDate ?
payRelativeTo
paymentDaysOffset ?
1
periodMultiplier
period
dayType ?
paymentDatesAdjustments
businessDayConvention
?
businessCentersReference
businessCenters
businessCenter +

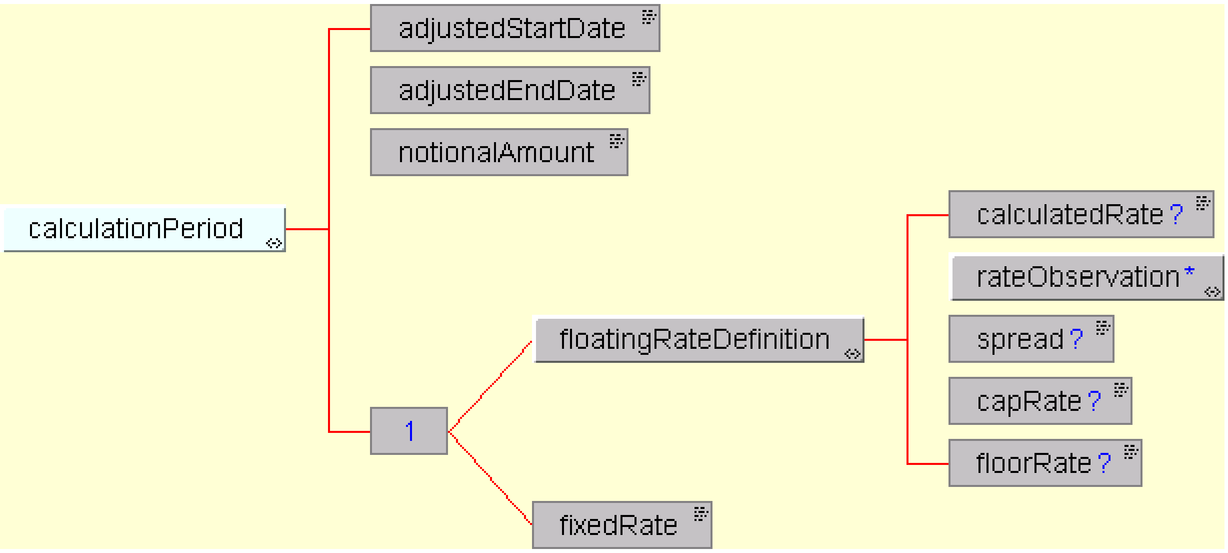

resetDates
calculationPeriodDatesReference
resetRelativeTo ?
fixingDates
1
1
periodMultiplier
period
dayType ?
businessDayConvention
?
businessCentersReference
businessCenters
businessCenter +
dateRelativeTo
rateCutOffDaysOffset ?
1
periodMultiplier
period
dayType ?
resetFrequency
1
periodMultiplier
period
weeklyRollConvention ?
resetDatesAdjustments
businessDayConvention
?
businessCentersReference
businessCenters
businessCenter +

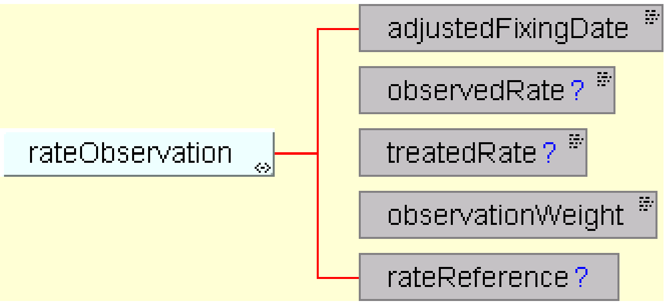

calculationPeriodAmount
calculation
notionalSchedule
notionalStepSchedule
1
initialValue
step*
stepDate
stepValue
currency
notionalStepParameters?
calculationPeriodDatesReference
stepFrequency
periodMultiplier
period
firstNotionalStepDate
lastNotionalStepDate
1
notionalStepAmount
1
notionalStepRate
stepRelativeTo
1
fixedRateSchedule
initialValue
step*
stepDate
stepValue
floatingRateCalculation
1
floatingRateIndex
indexTenor?
periodMultiplier
period
spreadSchedule?
initialValue
step*
stepDate
stepValue
rateTreatment?
capRateSchedule?
initialValue
step*
stepDate
stepValue
floorRateSchedule?
initialValue
step*
stepDate
stepValue
initialRate?
finalRateRounding?
roundingDirection
precision
averagingMethod?
negativeInterestRateTreatment?
dayCountFraction
discounting?
discountingType
discountRate?
discountRateDayCountFraction?
compoundingMethod?
knownAmountSchedule
1
initialValue
step*
stepDate
stepValue
currency


stubCalculationPeriodAmount
calculationPeriodDatesReference
initialStub ?
1
floatingRate +
floatingRateIndex
indexTenor ?
periodMultiplier
period
spreadSchedule ?
initialValue
step *
stepDate
stepValue
rateTreatment ?
capRateSchedule ?
initialValue
step *
stepDate
stepValue
floorRateSchedule ?
initialValue
step *
stepDate
stepValue
stubRate
stubAmount
currency
amount
finalStub ?
1
floatingRate +
floatingRateIndex
indexTenor ?
periodMultiplier
period
spreadSchedule ?
initialValue
step *
stepDate
stepValue
rateTreatment ?
capRateSchedule ?
initialValue
step *
stepDate
stepValue
floorRateSchedule ?
initialValue
step *
stepDate
stepValue
stubRate
stubAmount
currency
amount


principalExchanges
initialExchange
finalExchange
intermediateExchange


cashflowsMatchParameters
cashflows
principalExchange *
adjustedPrincipalExchangeDate
principalExchangeAmount
paymentCalculationPeriod *
adjustedPaymentDate
1
calculationPeriod +
fixedPaymentAmount

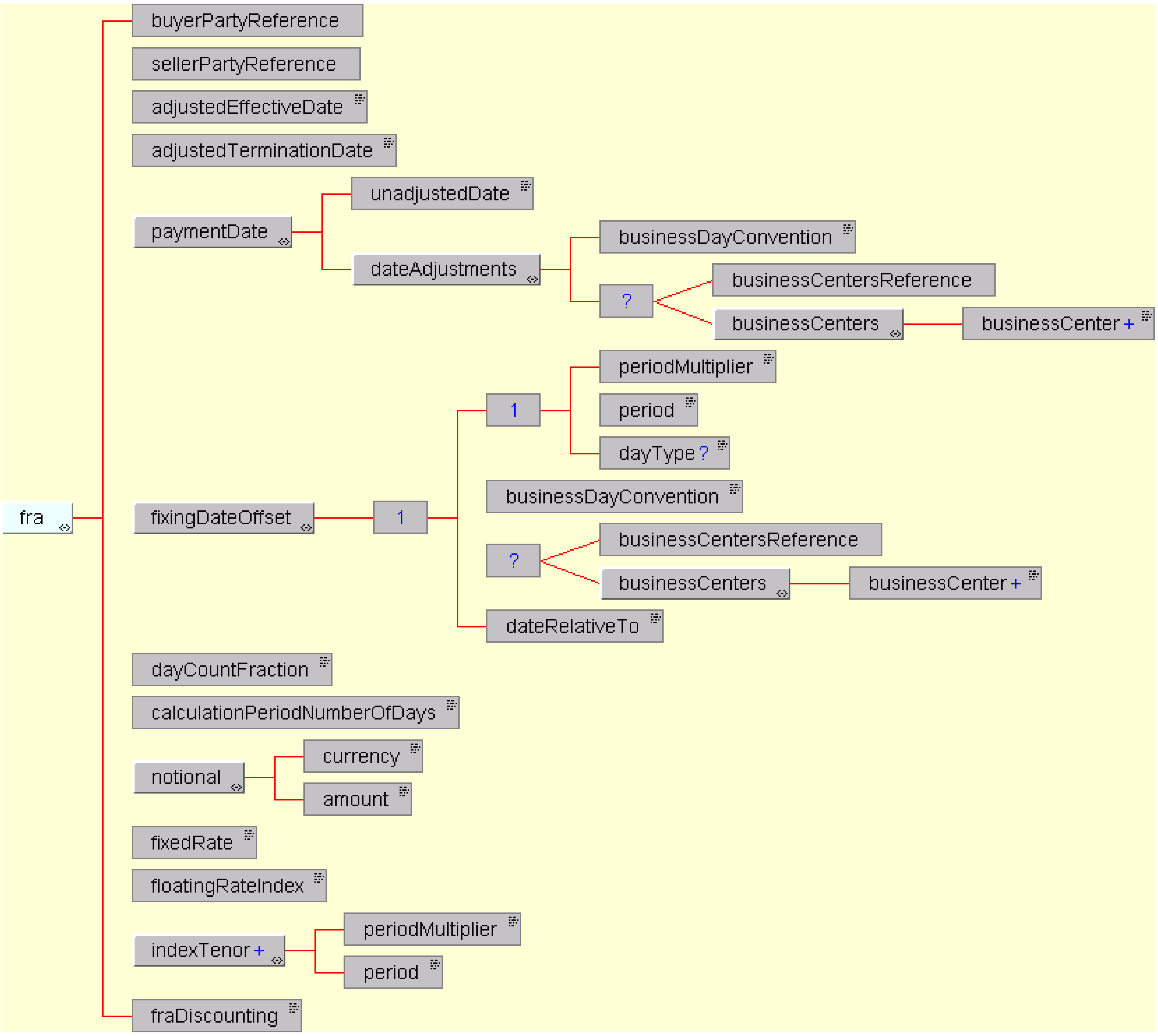

adjustedStartDate
adjustedEndDate
notionalAmount
calculationPeriod
calculatedRate ?
rateObservation *
floatingRateDefinition
spread ?
capRate ?
floorRate ?
1
fixedRate


adjustedFixingDate
observedRate ?
rateObservation
treatedRate ?
observationWeight
rateReference ?

Forward Rate Agreement

As noted above, the definition of a forward rate agreement trade is contained within a single component. A forward rate agreement is a simple and commoditized product. This means there is no variation in the product traded and it is not expected to become more complex in the future.

The structure of the `fra` component is shown diagrammatically below:



3.4 Coding Schemes

A necessary feature of a portable data standard is both an agreed set of elements and an agreed set of permissible values (the value domain) for those elements. An FpML document exchanged between two parties would not be mutually understandable if either or both of the parties used internal or proprietary coding schemes to populate elements.

Reference data can originate from various sources and the range of permitted values may be more or less extensive. The `dayCountFraction` is an example of an element with a limited set of permissible values with well-defined meanings. The range of permitted values and their meaning is specified in ISDA and AFB definitions. However, the `currency` element is an example of where the list of permitted values is more extensive and the coding scheme reference is to a well-known standard, in this case ISO 4217.

In FpML 1.0 the recommended domain for party identification is a valid bank identifier code (BIC). The BIC is an ISO standard, ISO 9362. S.W.I.F.T. is the designated registration authority for the assignment of BIC codes.

One possible means of identifying value domains would have been to include the domain of permitted values within the DTD. This solution has been rejected for two reasons. Firstly, in many cases the scope of permitted values is extensive, most obviously with party identifiers, and this would make the standard unnecessarily bulky. Secondly, although there are varying degrees of stability, all value domains are subject to change and including them in the DTD would have necessitated a new version of FpML each time a value domain changed.

For these reasons, FpML uses Schemes to identify the permitted values for an element. In each case, the reference Scheme will be identified by a URI. The URI will either identify a well-known external standard such as ISO 4217, or where no well-established standard exists, an FpML standard. FpML 1.0 includes provision for a default Scheme and the facility to override the default Scheme at an element level. In both cases, no values are included for the URI in the DTD in order to avoid coding either particular Schemes, or particular versions of Schemes, into FpML. For the same reason, the URI quoted in an FpML document for a Scheme that is FpML controlled will include a date and version in order to identify the particular version referenced.

It should be noted that the Scheme approach adopted by FpML does not allow validation of the values within the DTD. It will be the responsibility of the applications that implement FpML to validate that the contents of an element conform to the specified Scheme.

For further details on the architectural framework behind Schemes, refer to the FpML Architecture Version 1.0 document.

4 COMPONENT DEFINITIONS

4.1 Interpreting the Diagrams

The DTD source shown below is graphically represented in Figure 4.1. Important features of the diagram are highlighted, which include:

- Graphical representation of an XML entity definition
- Sequence indicators, i.e. comma (,) and vertical bar (|)
- Content specifications, i.e. text or sub-elements
- Occurrence indicators, i.e. can appear zero or once (?), can appear one or more times (+), can appear zero or more times (*).

```
<!ENTITY % FpML_Root "SubElementA?,SubElementB+">
<!ELEMENT SubElementA (LeafElementA*,(LeafElementB | LeafElementC))>
<!ELEMENT SubElementB (LeafElementA,LeafElementB,LeafElementC,LeafElementD)*>
<!ELEMENT LeafElementA (#PCDATA)>
<!ELEMENT LeafElementB (#PCDATA)>
<!ELEMENT LeafElementC (#PCDATA)>
<!ELEMENT LeafElementD (#PCDATA)>
```

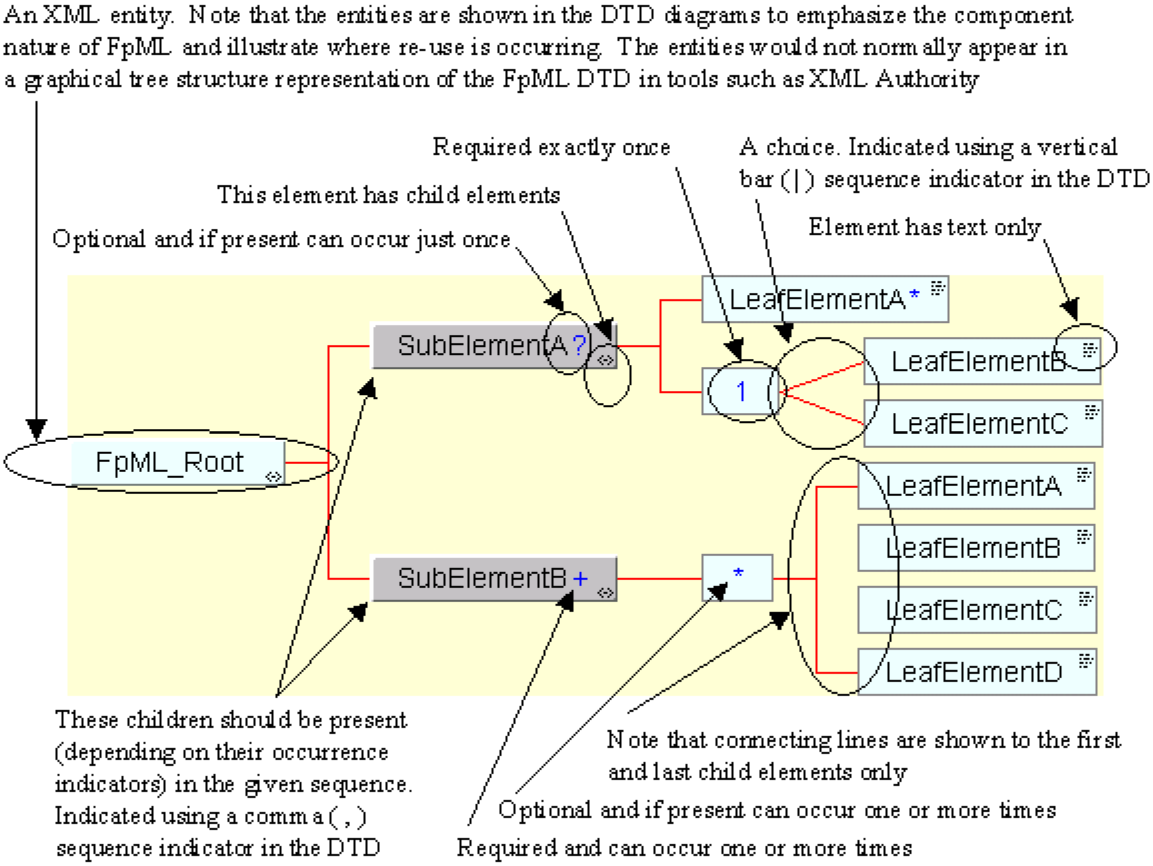

An XML entity. Note that the entities are shown in the DTD diagrams to emphasize the component nature of FpML and illustrate where re-use is occurring. The entities would not normally appear in a graphical tree structure representation of the FpML DTD in tools such as XML Authority
Required exactly once
A choice. Indicated using a vertical bar (|) sequence indicator in the DTD
This element has child elements
Element has text only
Optional and if present can occur just once
LeafElementA *
SubElementA ?
1
LeafElementB
LeafElementC
FpML_Root
LeafElementA
LeafElementB
SubElementB +
*
LeafElementC
LeafElementD
These children should be present (depending on their occurrence indicators) in the given sequence. Indicated using a comma (,) sequence indicator in the DTD
Note that connecting lines are shown to the first and last child elements only
Optional and if present can occur one or more times
Required and can occur one or more times

Figure 4.1: Graphical Representation of a DTD

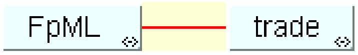
4.2 Root Element Definition

FpML

Description:

The root element in an FpML trade document.

Figure:



Contents:

trade (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Trade)

- The FpML trade definition.

DTD Fragment:

```
<!ELEMENT FpML (trade)>
```

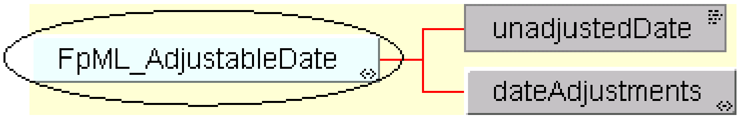
4.3 Entity Definitions

FpML_AdjustableDate

Description:

An entity for defining a date that shall be subject to adjustment if it would otherwise fall on a day that is not a business day in the specified business centers, together with the convention for adjusting the date.

Figure:



Contents:

unadjustedDate (exactly one occurrence; of type *date*)

- A date subject to adjustment.

dateAdjustments (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_BusinessDayAdjustments)

- The business day convention and financial business centers used for adjusting the date if it would otherwise fall on a day that is not a business day in the specified business centers.

Used by:

effectiveDate
firstPeriodStartDate
paymentDate
terminationDate

DTD Fragment:

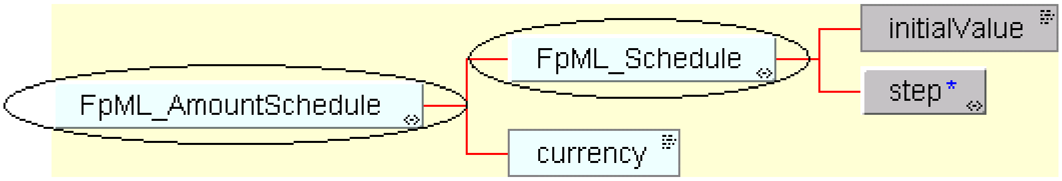
```
<!ENTITY % FpML_AdjustableDate "unadjustedDate , dateAdjustments">
```

FpML_AmountSchedule

Description:

An entity for defining a currency amount or a currency amount schedule. This entity inherits from a base entity, FpML_Schedule.

Figure:



Contents:

inherited element(s) (this entity inherits the element(s) defined by exactly one occurrence of the entity FpML_Schedule)

- An initial amount or an amount schedule.

currency (exactly one occurrence; of type *string*, an enumerated domain value defined by *currencyScheme*)

- The currency in which an amount is denominated.

Used by:

knownAmountSchedule
notionalStepSchedule

DTD Fragment:

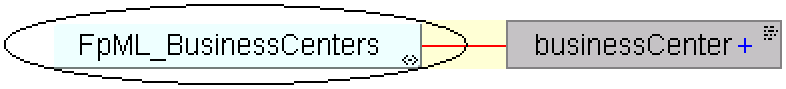
```
<!ENTITY % FpML_AmountSchedule "(%FpML_Schedule; , currency)">
```

FpML_BusinessCenters

Description:

An entity for defining financial business centers used in determining whether a day is a business day or not.

Figure:



Contents:

businessCenter (one or more occurrences; of type *string*, an enumerated domain value defined by *businessCenterScheme*)

- A code identifying a financial business center location. A list of business centers may be ordered in the document alphabetically based on business center code. An FpML document containing an unordered business center list is still regarded as a conformant document.

Used by:

businessCenters

DTD Fragment:

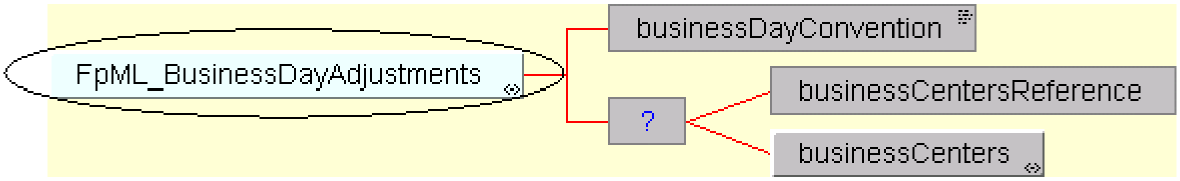
```
<!ENTITY % FpML_BusinessCenters "businessCenter+">
```

FpML_BusinessDayAdjustments

Description:

An entity for defining the business day convention and financial business centers used for adjusting any relevant date if it would otherwise fall on a day that is not a business day in the specified business centers.

Figure:



Contents:

businessDayConvention (exactly one occurrence; of type *string*, an enumerated domain value defined by *businessDayConventionScheme*)

- The convention for adjusting a date if it would otherwise fall on a day that is not a business day. If the business day convention value is NONE then neither the businessCentersReference or businessCenters element should be included.

Zero or one occurrence of either

> **businessCentersReference** (exactly one occurrence; an *empty* element containing an *href* attribute)
>
> - A pointer style reference to a set of financial business centers defined elsewhere in the document. This set of business centers is used to determine whether a particular day is a business day or not.

Or

> **businessCenters** (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_BusinessCenters)
>
> - A container for a set of financial business centers. This set of business centers is used to determine whether a day is a business day or not.

Used by:

calculationPeriodDatesAdjustments
dateAdjustments
paymentDatesAdjustments
resetDatesAdjustments

DTD Fragment:

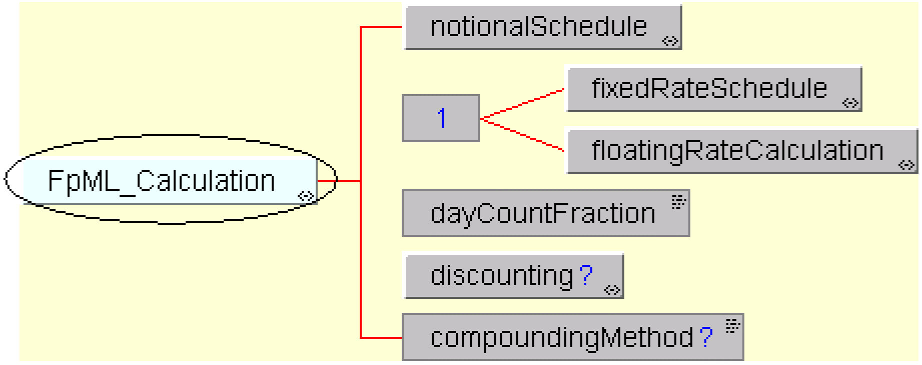
```
<!ENTITY % FpML_BusinessDayAdjustments "businessDayConvention ,
(businessCentersReference | businessCenters)?">
```

FpML_Calculation

Description:

An entity for defining the parameters used in the calculation of fixed or floating calculation period amounts.

Figure:



Contents:

notionalSchedule (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Notional)

- The notional amount or notional amount schedule.

Either

fixedRateSchedule (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Schedule)

- The fixed rate or fixed rate schedule expressed as explicit fixed rates and dates. In the case of a schedule, the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.

Or

floatingRateCalculation (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_FloatingRateCalculation)

- The floating rate calculation definitions.

dayCountFraction (exactly one occurrence; of type *string*, an enumerated domain value defined by *dayCountFractionScheme*)

- The day count fraction.

discounting (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Discounting)

- The parameters specifying any discounting conventions that may apply. This element must only be included if discounting applies.

compoundingMethod (zero or one occurrence; of type *string*, an enumerated domain value defined by *compoundingMethodScheme*)

- If more than one calculation period contributes to a single payment amount this element specifies whether compounding is applicable, and if so, what compounding method is to be used. This element must only be included when more than one calculation period contributes to a single payment amount.

Used by:

calculation

DTD Fragment:

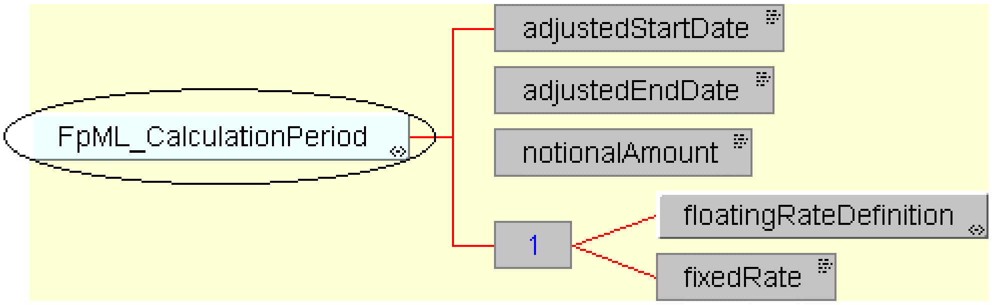
```
<!ENTITY % FpML_Calculation "notionalSchedule , (fixedRateSchedule |
floatingRateCalculation) , dayCountFraction , discounting? ,
compoundingMethod?">
```

FpML_CalculationPeriod

Description:

An entity for defining the parameters used in the calculation of a fixed or floating rate calculation period amount. This entity forms part of the cashflows representation of a swap stream.

Figure:



Contents:

adjustedStartDate (exactly one occurrence; of type *date*)

- The calculation period start date, adjusted according to any relevant business day convention.

adjustedEndDate (exactly one occurrence; of type *date*)

- The calculation period end date, adjusted according to any relevant business day convention.

notionalAmount (exactly one occurrence; of type *decimal*)

- The calculation period notional amount.

Either

floatingRateDefinition (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_FloatingRateDefinition)

- The floating rate reset information for the calculation period.

Or

fixedRate (exactly one occurrence; of type *decimal*)

- The calculation period fixed rate. A per annum rate, expressed as a decimal. A fixed rate of 5% would be represented as 0.05.

Used by:

calculationPeriod

DTD Fragment:

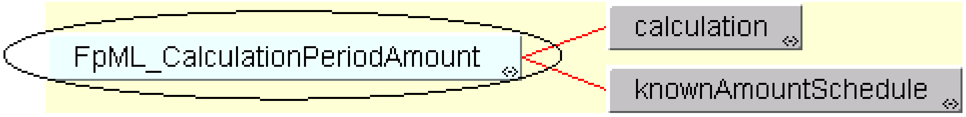
```
<!ENTITY % FpML_CalculationPeriod "adjustedStartDate , adjustedEndDate ,
notionalAmount , (floatingRateDefinition | fixedRate)">
```

FpML_CalculationPeriodAmount

Description:

An entity for defining the parameters used in the calculation of fixed or floating rate calculation period amounts or for specifying a known calculation period amount or known amount schedule.

Figure:



Contents:

Either

calculation (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Calculation)

- The parameters used in the calculation of fixed or floating rate calculation period amounts.

Or

knownAmountSchedule (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_AmountSchedule)

- The known calculation period amount or a known amount schedule expressed as explicit known amounts and dates. In the case of a schedule, the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.

Used by:

calculationPeriodAmount

DTD Fragment:

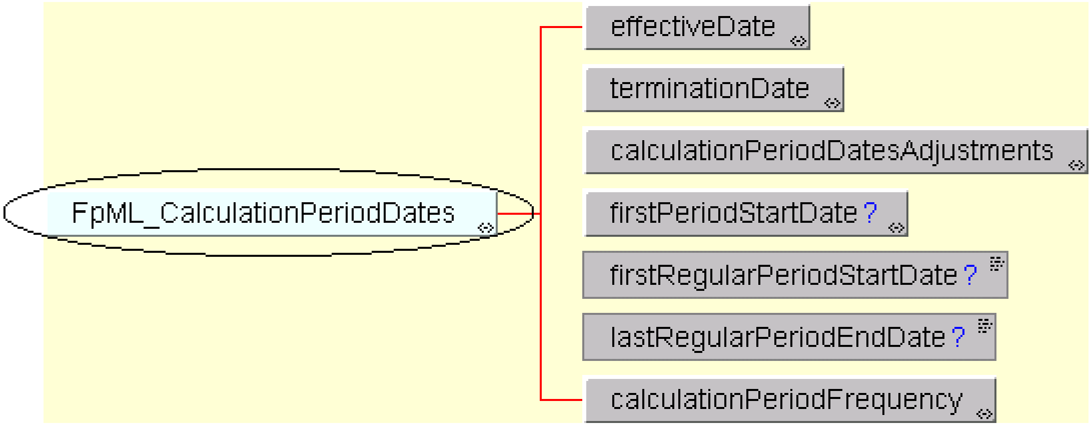
```
<!ENTITY % FpML_CalculationPeriodAmount "calculation | knownAmountSchedule">
```

FpML_CalculationPeriodDates

Description:

An entity for defining the parameters used to generate the calculation periods dates schedule, including the specification of any initial or final stub calculation periods. A calculation period schedule consists of an optional initial stub calculation period, one or more regular calculation periods and an optional final stub calculation period. In the absence of any initial or final stub calculation periods, the regular part of the calculation period schedule is assumed to be between the effective date and the termination date. No implicit stubs are allowed, i.e. stubs must be explicitly specified using an appropriate combination of firstPeriodStartDate, firstRegularPeriodStartDate and lastRegularPeriodEndDate.

Figure:


FpML_CalculationPeriodDates
effectiveDate
terminationDate
calculationPeriodDatesAdjustments
firstPeriodStartDate ?
firstRegularPeriodStartDate ?
lastRegularPeriodEndDate ?
calculationPeriodFrequency

Contents:

effectiveDate (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_AdjustableDate)

- The first day of the term of the trade. This day may be subject to adjustment in accordance with a business day convention.

terminationDate (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_AdjustableDate)

- The last day of the term of the trade. This day may be subject to adjustment in accordance with a business day convention.

calculationPeriodDatesAdjustments (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_BusinessDayAdjustments)

- The business day convention to apply to each calculation period end date if it would otherwise fall on a day that is not a business day in the specified financial business centers.

firstPeriodStartDate (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_AdjustableDate)

- The start date of the first calculation period if the date falls before the effective date. It must only be specified if it is not equal to the effective date. This day may be subject to adjustment in accordance with a business day convention.

firstRegularPeriodStartDate (zero or one occurrence; of type *date*)

- The start date of the regular part of the calculation period schedule. It must only be specified if there is an initial stub calculation period. This day may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.

lastRegularPeriodEndDate (zero or one occurrence; of type *date*)

- The end date of the regular part of the calculation period schedule. It must only be specified if there is a final stub calculation period. This day may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.

calculationPeriodfrequency (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_CalculationPeriodFrequency)

- The frequency at which calculation period end dates occur within the regular part of the calculation period schedule and their roll date convention.

Used by:

calculationPeriodDates

DTD Fragment:

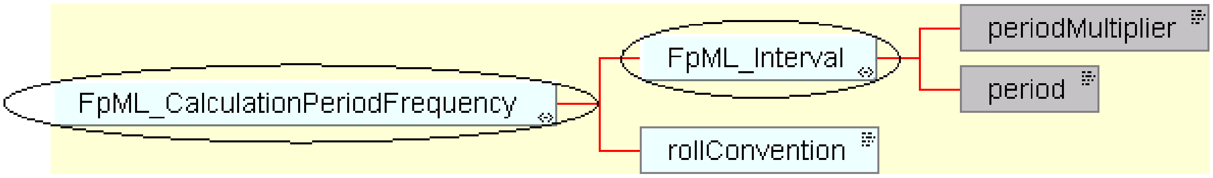
```
<!ENTITY % FpML_CalculationPeriodDates "effectiveDate , terminationDate ,
calculationPeriodDatesAdjustments , firstPeriodStartDate? ,
firstRegularPeriodStartDate? , lastRegularPeriodEndDate? ,
calculationPeriodFrequency">
```

FpML_CalculationPeriodFrequency

Description:

An entity for defining the frequency at which calculation period end dates occur within the regular part of the calculation period schedule and their roll date convention. This entity inherits from a base entity, FpML_Interval.

Figure:



Contents:

inherited element(s) (this entity inherits the element(s) defined by exactly one occurrence of the entity FpML_Interval)

- The frequency at which calculation period end dates occur within the regular part of the calculation period schedule.

rollConvention (exactly one occurrence; of type *string*, an enumerated domain value defined by *rollConventionScheme*)

- Used in conjunction with a frequency and the regular period start date of a calculation period, determines each calculation period end date within the regular part of a calculation period schedule.

Used by:

calculationPeriodFrequency

DTD Fragment:

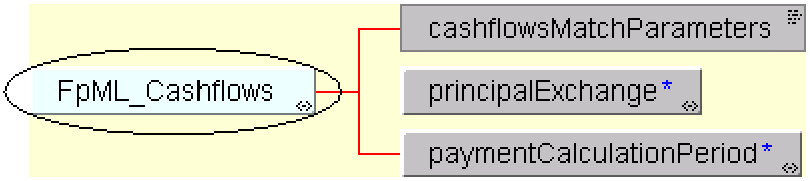
```
<!ENTITY % FpML_CalculationPeriodFrequency "%FpML_Interval; ,
rollConvention">
```

FpML_Cashflows

Description:

An entity for defining the cashflow representation of a swap trade.

Figure:



Contents:

cashflowsMatchParameters (exactly one occurrence; of type *boolean*)

- A true/false flag to indicate whether the cashflows match the parametric definition of the stream, i.e. whether the cashflows could be regenerated from the parameters without loss of information.

principalExchange (zero or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_PrincipalExchange)

- The initial, intermediate and final principal exchange amounts. Typically required on cross currency interest rate swaps where actual exchanges of principal occur. A list of principal exchange elements may be ordered in the document by ascending adjusted principal exchange date. An FpML document containing an unordered principal exchange list is still regarded as a conformant document.

paymentCalculationPeriod (zero or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_PaymentCalculationPeriod)

- The adjusted payment date and associated calculation period parameters required to calculate the actual or projected payment amount. A list of payment calculation period elements may be ordered in the document by ascending adjusted payment date. An FpML document containing an unordered list of payment calculation periods is still regarded as a conformant document.

Used by:

cashflows

DTD Fragment:

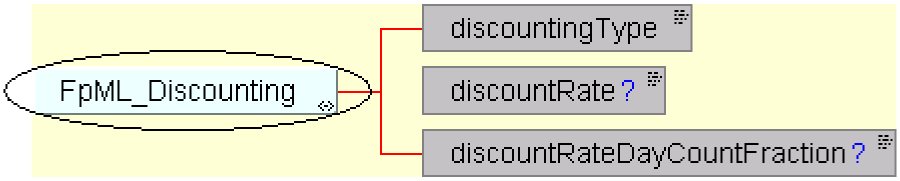
```
<!ENTITY % FpML_Cashflows "cashflowsMatchParameters , principalExchange* ,
paymentCalculationPeriod*">
```

FpML_Discounting

Description:

An entity for defining discounting information. The 2000 ISDA Definitions, Section 8.4. Discounting (related to the calculation of a discounted fixed amount or floating amount) apply. This entity must only be included if discounting applies.

Figure:



Contents:

discountingType (exactly one occurrence; of type *string*, an enumerated domain value defined by *discountingTypeScheme*)

- The discounting method that is applicable.

discountRate (zero or one occurrence; of type *decimal*)

- A discount rate, expressed as a decimal, to be used in the calculation of a discounted amount. A discount rate of 5% would be represented as 0.05.

discountRateDayCountFraction (zero or one occurrence; of type *string*, an enumerated domain value defined by *dayCountFractionScheme*)

- A discount rate day count fraction to be used in the calculation of a discounted amount.

Used by:

discounting

DTD Fragment:

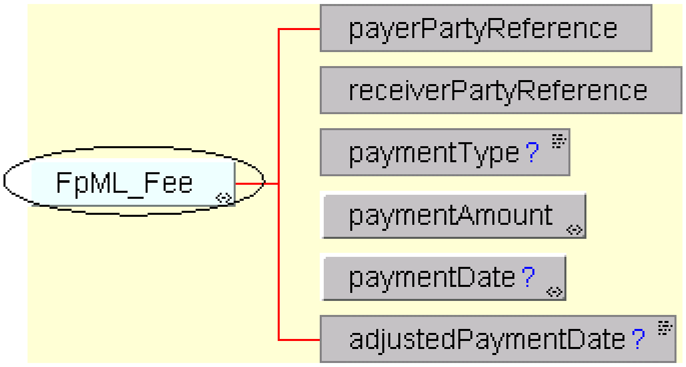
```
<!ENTITY % FpML_Discounting "discountingType , discountRate? ,
discountRateDayCountFraction?">
```

FpML_Fee

Description:

An entity for defining additional payments associated with a trade which are not defined as part of the stream payments. It may be used to define additional payments between the principal parties involved in the trade or other third parties such as a broker.

Figure:



Contents:

payerPartyReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the payer of the fee.

receiverPartyReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the receiver of the fee.

paymentType (zero or one occurrence; of type *string*, an enumerated domain value defined by *paymentTypeScheme*)

- A classification of the type of fee or additional payment, e.g. brokerage, upfront fee etc. FpML does not define domain values for this element.

paymentAmount (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Money)

- The currency amount of the payment.

paymentDate (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_AdjustableDate)

- The payment date of the fee or additional payment together with any applicable business day convention and financial business centers for adjusting the payment date if it would otherwise fall on a day that is not a valid business day. This element is optional to allow the fee component to be used to capture commission amounts that might not have a known payment date associated with them, e.g. commissions may be invoiced and billed periodically.

adjustedPaymentDate (zero or one occurrence; of type *date*)

- The adjusted payment date. This element is not intended for use in trade confirmation but may be specified to allow the fee structure to also serve as a cashflow type component (all dates in the FpML_Cashflows entity are adjusted payment dates).

Used by:

additionalPayment
otherPartyPayment

DTD Fragment:

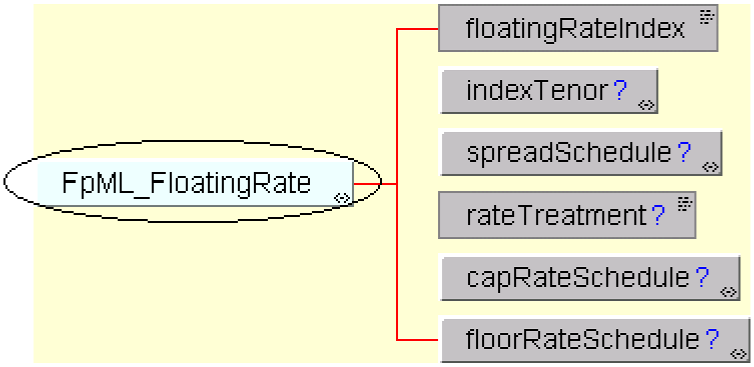
```
<!ENTITY % FpML_Fee "payerPartyReference , receiverPartyReference ,
paymentType? , paymentAmount , paymentDate? , adjustedPaymentDate?">
```

FpML_FloatingRate

Description:

An entity for defining the floating rate definitions.

Figure:



Contents:

floatingRateIndex (exactly one occurrence; of type *string*, an enumerated domain value defined by *floatingRateIndexScheme*)

- The ISDA Floating Rate Option, i.e. the floating rate index.

indexTenor (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Interval)

- The ISDA Designated Maturity, i.e. the tenor of the floating rate.

spreadSchedule (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Schedule)

- The ISDA Spread or a Spread schedule expressed as explicit spreads and dates. In the case of a schedule, the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments. The spread is a per annum rate, expressed as a decimal. For purposes of determining a calculation period amount, if positive the spread will be added to the floating rate and if negative the spread will be subtracted from the floating rate. A positive 10 basis point (0.1%) spread would be represented as 0.001.

rateTreatment (zero or one occurrence; of type *string*, an enumerated domain value defined by *rateTreatmentScheme*)

- The specification of any rate conversion which needs to be applied to the observed rate before being used in any calculations. The two common conversions are for securities quoted on a bank discount basis which will need to be converted to either a Money Market Yield or Bond

Equivalent Yield. See the Annex to the 2000 ISDA Definitions (June 2000 Version), Section 7.3. Certain General Definitions Relating to Floating Rate Options, paragraphs (g) and (h) for definitions of these terms.

capRateSchedule (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Schedule)

- The cap rate or cap rate schedule, if any, which applies to the floating rate. The cap rate (strike) is only required where the floating rate on a swap stream is capped at a certain strike level. A cap rate schedule is expressed as explicit cap rates and dates and the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments. The cap rate is assumed to be exclusive of any spread and is a per annum rate, expressed as a decimal. A cap rate of 5% would be represented as 0.05.

floorRateSchedule (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Schedule)

- The floor rate or floor rate schedule, if any, which applies to the floating rate. The floor rate (strike) is only required where the floating rate on a swap stream is floored at a certain strike level. A floor rate schedule is expressed as explicit floor rates and dates and the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments. The floor rate is assumed to be exclusive of any spread and is a per annum rate, expressed as a decimal. A floor rate of 5% would be represented as 0.05.

Used by:

floatingRate

DTD Fragment:

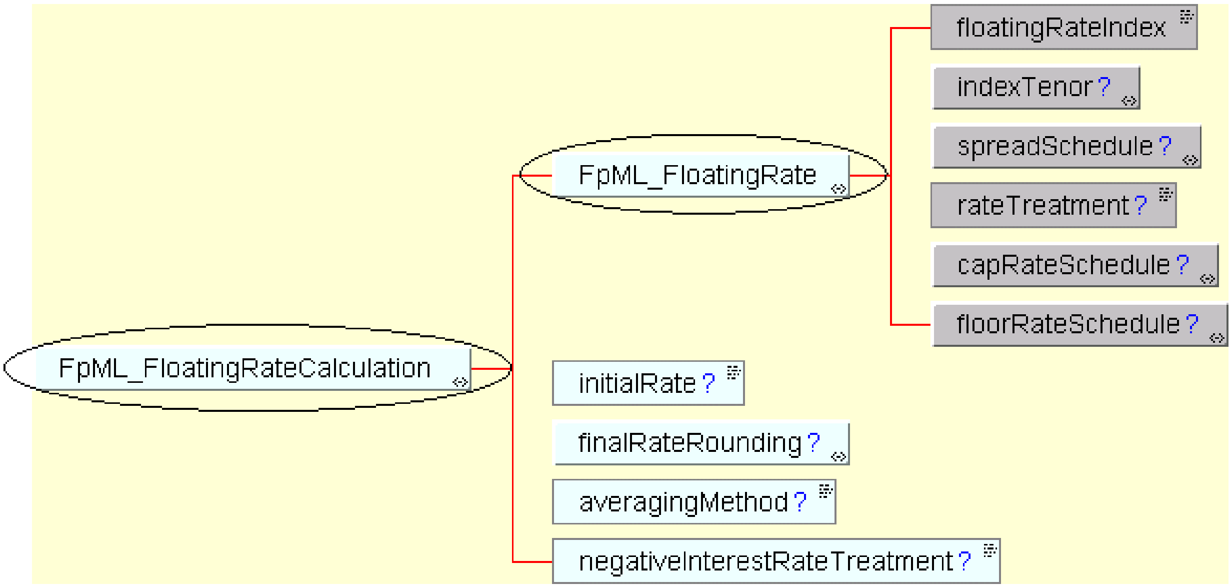
```
<!ENTITY % FpML_FloatingRate "floatingRateIndex , indexTenor? ,
spreadSchedule? , rateTreatment? , capRateSchedule? , floorRateSchedule?">
```

FpML_FloatingRateCalculation

Description:

An entity for defining the floating rate definitions and definitions relating to the calculation of floating rate amounts. This entity inherits from a base entity, FpML_FloatingRate.

Figure:



Contents:

inherited element(s) (this entity inherits the element(s) defined by exactly one occurrence of the entity FpML_FloatingRate)

- The floating rate definitions.

initialRate (zero or one occurrence; of type *decimal*)

- The initial floating rate reset agreed between the principal parties involved in the trade. This is assumed to be the first required reset rate for the first regular calculation period. It should only be included when the rate is not equal to the rate published on the source implied by the floating rate index. An initial rate of 5% would be represented as 0.05.

finalRateRounding (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Rounding)

- The rounding convention to apply to the final rate used in determination of a calculation period amount.

averagingMethod (zero or one occurrence; of type *string*, an enumerated domain value defined by *averagingMethodScheme*)

- If averaging is applicable, this element specifies whether a weighted or unweighted average method of calculation is to be used. The element must only be included when averaging applies.

negativeInterestRateTreatment (zero or one occurrence; of type *string*, an enumerated domain value defined by *negativeInterestRateTreatmentScheme*)

- The specification of any provisions for calculating payment obligations when a floating rate is negative (either due to a quoted negative floating rate or by operation of a spread that is subtracted from the floating rate).

Used by:

floatingRateCalculation

DTD Fragment:

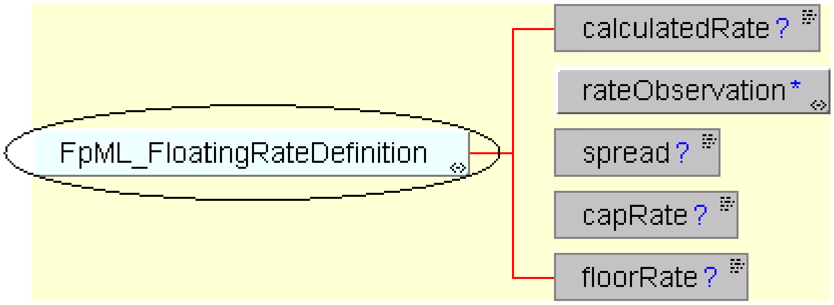
```
<!ENTITY % FpML_FloatingRateCalculation "(%FpML_FloatingRate; , initialRate?
, finalRateRounding? , averagingMethod?, negativeInterestRateTreatment?)">
```

FpML_FloatingRateDefinition

Description:

An entity defining parameters associated with a floating rate reset. This entity forms part of the cashflows representation of a stream.

Figure:



Contents:

calculatedRate (zero or one occurrence; of type *decimal*)

- The final calculated rate for a calculation period after any required averaging of rates. A calculated rate of 5% would be represented as 0.05.

rateObservation (zero or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_RateObservation)

- The details of a particular rate observation, including the fixing date and observed rate. A list of rate observation elements may be ordered in the document by ascending adjusted fixing date. An FpML document containing an unordered list of rate observations is still regarded as a conformant document.

spread (zero or one occurrence; of type *decimal*)

- The ISDA Spread, if any, which applies for the calculation period. The spread is a per annum rate, expressed as a decimal. For purposes of determining a calculation period amount, if positive the spread will be added to the calculated rate and if negative the spread will be subtracted from the calculated rate. A positive 10 basis point (0.1%) spread would be represented as 0.001.

capRate (zero or one occurrence; of type *decimal*)

- The cap rate, if any, which applies to the calculated rate for the calculation period. The cap rate (strike) is only required where the floating rate on a swap stream is capped at a certain strike level. The cap rate is assumed to be exclusive of any spread and is a per annum rate, expressed as a decimal. A cap rate of 5% would be represented as 0.05.

floorRate (zero or one occurrence; of type *decimal*)

- The floor rate, if any, which applies to the calculated rate for the calculation period. The floor rate (strike) is only required where the floating rate on a swap stream is floored at a certain strike level. The floor rate is assumed to be exclusive of any spread and is a per annum rate, expressed as a decimal. A floor rate of 5% would be represented as 0.05.

Used by:

floatingRateDefinition

DTD Fragment:

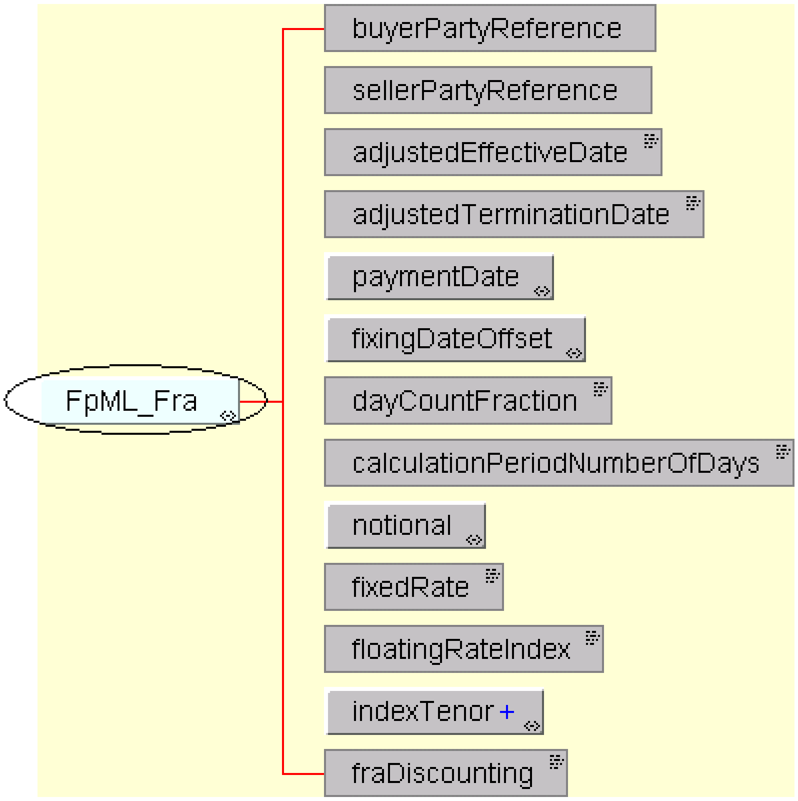
```
<!ENTITY % FpML_FloatingRateDefinition "calculatedRate? , rateObservation* ,
spread? , capRate? , floorRate?">
```

FpML_Fra

Description:

An entity for defining the forward rate agreement (FRA) product.

Figure:



Contents:

buyerPartyReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the buyer of the instrument, also known as the fixed rate payer.

sellerPartyReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the seller of the instrument, also known as the floating rate payer.

adjustedEffectiveDate (exactly one occurrence; of type *date*)

- The start date of the calculation period. This date should already be adjusted for any applicable business day convention. This is also the date when the observed rate is applied, the reset date.

adjustedTerminationDate (exactly one occurrence; of type *date*)

- The end date of the calculation period. This date should already be adjusted for any applicable business day convention.

paymentDate (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_AdjustableDate)

- The payment date. This date is subject to adjustment in accordance with any applicable business day convention.

fixingDateOffset (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_RelativeDateOffset)

- Specifies the fixing date relative to the reset date in terms of a business days offset and an associated set of financial business centers. Normally these offset calculation rules will be those specified in the ISDA definition for the relevant floating rate index (ISDA's Floating Rate Option). However, non-standard offset calculation rules may apply for a trade if mutually agreed by the principal parties to the transaction. The href attribute on the dateRelativeTo element should reference the id attribute on the adjustedEffectiveDate element.

dayCountFraction (exactly one occurrence; of type *string*, an enumerated domain value defined by *dayCountFractionScheme*)

- The day count fraction.

calculationPeriodNumberOfDays (exactly one occurrence; of type *positiveInteger*)

- The number of days from the adjusted effective date to the adjusted termination date calculated in accordance with the applicable day count fraction.

notional (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Money)

- The notional amount.

fixedRate (exactly one occurrence; of type *decimal*)

- The fixed rate. A per annum rate, expressed as a decimal. A fixed rate of 5% would be represented as 0.05.

floatingRateIndex (exactly one occurrence; of type *string*, an enumerated domain value defined by *floatingRateIndexScheme*)

- The ISDA Floating Rate Option, i.e. the floating rate index.

indexTenor (one or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Interval)

- The ISDA Designated Maturity, i.e. the tenor of the floating rate. If linear interpolation of two floating rate tenors is applicable then two index tenors must be specified.

fraDiscounting (exactly one occurrence; of type *boolean*)

- A true/false flag to indicate whether ISDA FRA Discounting applies. If false, then the calculation will be based on a par value and no discounting will apply.

Used by:

fra

DTD Fragment:

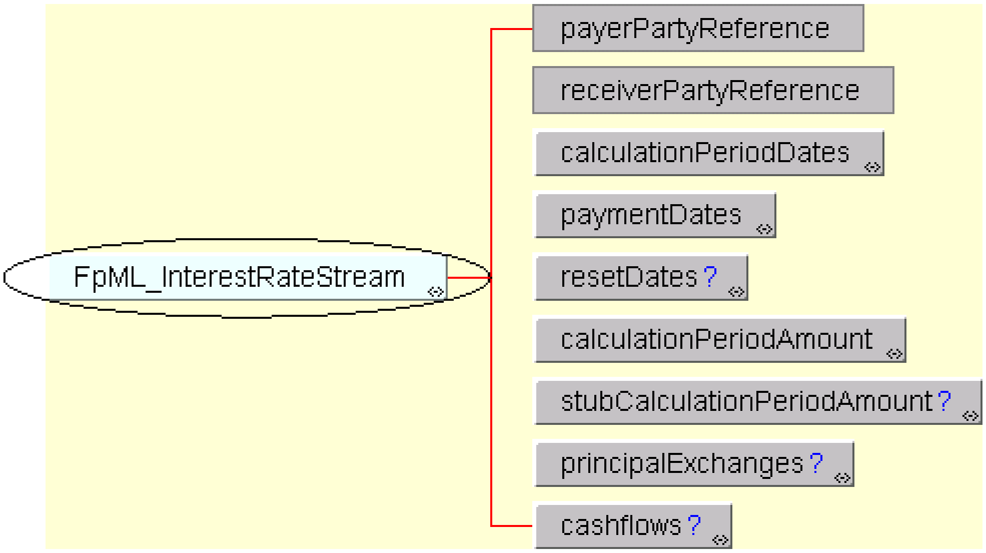
```
<!ENTITY % FpML_Fra "buyerPartyReference , sellerPartyReference ,
adjustedEffectiveDate , adjustedTerminationDate , paymentDate ,
fixingDateOffset , dayCountFraction , calculationPeriodNumberOfDays ,
notional , fixedRate , floatingRateIndex , indexTenor+ , fraDiscounting">
```

FpML_InterestRateStream

Description:

An entity for defining the components specifying an interest rate payments stream, including both a parametric and cashflows representation for the stream of payments.

Figure:



Contents:

payerPartyReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the payer of stream payments.

receiverPartyReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the receiver of stream payments.

calculationPeriodDates (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_CalculationPeriodDates)

- The calculation periods dates schedule.

paymentDates (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_PaymentDates)

- The payment dates schedule.

resetDates (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_ResetDates)

- The reset dates schedule. The reset dates schedule only applies for a floating rate stream.

calculationPeriodAmount (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_CalculationPeriodAmount)

- The calculation period amount parameters.

stubCalculationPeriodAmount (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_StubCalculationPeriodAmount)

- The stub calculation period amount parameters. This element must only be included if there is an initial or final stub calculation period. Even then, it must only be included if either the stub references a different floating rate tenor to the regular calculation periods, or if the stub is calculated as a linear interpolation of two different floating rate tenors, or if a specific stub rate or stub amount has been negotiated.

principalExchanges (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_PrincipalExchanges)

- The true/false flags indicating whether initial, intermediate or final exchanges of principal should occur.

cashflows (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Cashflows)

- The cashflows representation of the swap stream.

Used by:

swapStream

DTD Fragment:

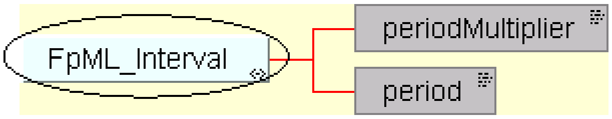
```
<!ENTITY % FpML_InterestRateStream "payerPartyReference ,
receiverPartyReference , calculationPeriodDates , paymentDates , resetDates?
, calculationPeriodAmount , stubCalculationPeriodAmount? ,
principalExchanges? , cashflows?">
```

FpML_Interval

Description:

An entity for defining a time interval or offset, e.g. one day, three months. Used for specifying frequencies at which events occur, the tenor of a floating rate or an offset relative to another date.

Figure:



Contents:

periodMultiplier (exactly one occurrence; of type *integer*)

- A time period multiplier, e.g. 1, 2 or 3 etc. A negative value can be used when specifying an offset relative to another date, e.g. -2 days. If the period value is T (Term) then periodMultiplier must contain the value 1.

period (exactly one occurrence; of type *string*, an enumerated domain value defined by *periodScheme*)

- A time period, e.g. a day, week, month, year or term of the stream. If the periodMultiplier value is 0 (zero) then period must contain the value D (Day).

Used by:

FpML_CalculationPeriodFrequency
FpML_Offset
FpML_ResetFrequency
frequency
indexTenor
paymentFrequency
stepFrequency

DTD Fragment:

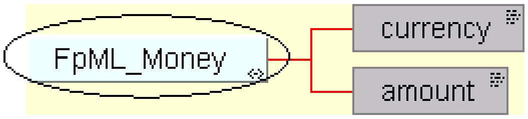
```
<!ENTITY % FpML_Interval "periodMultiplier , period">
```

FpML_Money

Description:

An entity for defining a currency amount.

Figure:



Contents:

currency (exactly one occurrence; of type *string*, an enumerated domain value defined by *currencyScheme*)

- The currency in which an amount is denominated.

amount (exactly one occurrence; of type *decimal*)

- The monetary quantity in currency units.

Used by:

notional
paymentAmount
stubAmount

DTD Fragment:

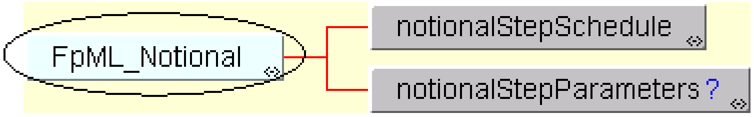
```
<!ENTITY % FpML_Money "currency , amount">
```

FpML_Notional

Description:

An entity for defining the notional amount or notional amount schedule associated with a swap stream. The notional schedule will be captured by explicitly specifying the dates that the notional changes and the outstanding notional amount that applies from that date. A parametric representation of the rules defining the notional step schedule can optionally be included.

Figure:



Contents:

notionalStepSchedule (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_AmountSchedule)

- The notional amount or notional amount schedule expressed as explicit outstanding notional amounts and dates. In the case of a schedule, the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.

notionalStepParameters (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_NotionalStepRule)

- A parametric representation of the notional step schedule, i.e. parameters used to generate the notional schedule.

Used by:

notionalSchedule

DTD Fragment:

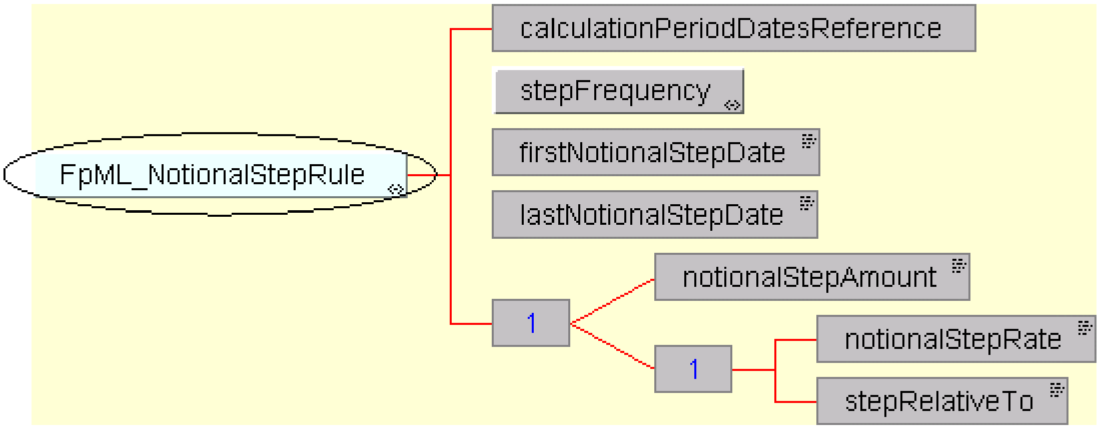
```
<!ENTITY % FpML_Notional "notionalStepSchedule , notionalStepParameters?">
```

FpML_NotionalStepRule

Description:

An entity for defining a parametric representation of the notional step schedule, i.e. parameters used to generate the notional balance on each step date. The step change in notional can be expressed in terms of either a fixed amount or as a percentage of either the initial notional or previous notional amount. This parametric representation is intended to cover the more common amortizing/accreting.

Figure:



Contents:

calculationPeriodDatesReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to the associated calculation period dates component defined elsewhere in the document.

stepFrequency (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Interval)

- The frequency at which the step changes occur. This frequency must be a multiple of the stream calculation period frequency.

firstNotionalStepDate (exactly one occurrence; of type *date*)

- The unadjusted calculation period start date of the first change in notional. This day may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.

lastNotionalStepDate (exactly one occurrence; of type *date*)

- The unadjusted calculation period end date of the last change in notional. This day may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.

Either

notionalStepAmount (exactly one occurrence; of type *decimal*)

- The explicit amount that the notional changes on each step date. This can be a positive or negative amount.

Or

notionalStepRate (exactly one occurrence; of type *decimal*)

- The percentage amount by which the notional changes on each step date. The percentage is either a percentage applied to the initial notional amount or the previous outstanding notional, depending on the value of the element stepRelativeTo. The percentage can be either positive or negative. A percentage of 5% would be represented as 0.05.

stepRelativeTo (exactly one occurrence; of type *string*, an enumerated domain value defined by *stepRelativeToScheme*)

- Specifies whether the notionalStepRate should be applied to the initial notional or the previous notional in order to calculate the notional step change amount.

Used by:

notionalStepParameters

DTD Fragment:

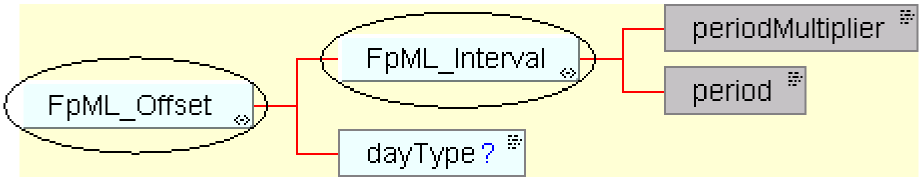
```
<!ENTITY % FpML_NotionalStepRule "calculationPeriodDatesReference ,
stepFrequency , firstNotionalStepDate , lastNotionalStepDate ,
(notionalStepAmount | (notionalStepRate , stepRelativeTo))">
```

FpML_Offset

Description:

An entity for defining an offset used in calculating a new date relative to a reference date. Currently, the only offsets defined are expected to be expressed as either calendar or business day offsets. This entity inherits from a base entity, FpML_Interval.

Figure:



Contents:

inherited element(s) (this entity inherits the element(s) defined by exactly one occurrence of the entity FpML_Interval)

- The offset specified as a number of days. A negative offset implies counting backwards from the reference date.

dayType (zero or one occurrence; of type *string*, an enumerated domain value defined by *dayTypeScheme*)

- In the case of an offset specified as a number of days, this element defines whether consideration is given as to whether a day is a good business day or not. If a day type of business days is specified then non-business days are ignored when calculating the offset. The financial business centers to use for determination of business days are implied by the context in which this element is used. This element must only be included when the offset is specified as a number of days. If the offset is zero days, i.e. the periodMultiplier element contains a value of 0 (zero), then the dayType element should not be included.

Used by:

FpML_RelativeDateOffset
paymentDaysOffset
rateCutOffDaysOffset

DTD Fragment:

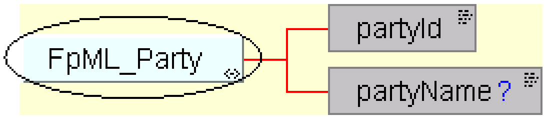
```
<!ENTITY % FpML_Offset "(%FpML_Interval; , dayType?)">
```

FpML_Party

Description:

An entity for defining party identifier information.

Figure:



Contents:

partyId (exactly one occurrence; of type *string*, an enumerated domain value defined by *partyIdScheme*)

- A party identifier, e.g. a S.W.I.F.T. bank identifier code (BIC).

partyName (zero or one occurrence; of type *string*)

- The name of the party. A free format string. FpML does not define usage rules for this element.

Used by:

party

DTD Fragment:

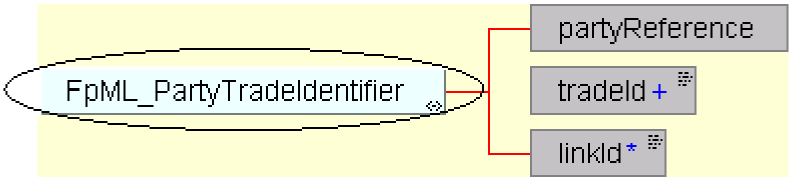
```
<!ENTITY % FpML_Party "partyId , partyName?">
```

FpML_PartyTradeIdentifier

Description:

An entity for defining one or more trade reference identifiers allocated to the trade by a party. A link identifier allows the trade to be associated with other related trades, e.g. trades forming part of a larger structured transaction. It is expected that for external communication of a trade there will be only one tradeId sent in the document per party.

Figure:



Contents:

partyReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a party identifier defined elsewhere in the document. The party referenced has allocated the trade identifier.

tradeId (one or more occurrences; of type *string*, an enumerated domain value defined by *tradeIdScheme*)

- A trade reference identifier allocated by a party. FpML does not define the domain values associated with this element. Note that the domain values for this element are not strictly an enumerated list.

linkId (zero or more occurrences; of type *string*, an enumerated domain value defined by *linkIdScheme*)

- A link identifier allowing the trade to be associated with other related trades, e.g. the linkId may contain a tradeId for an associated trade or several related trades may be given the same linkId. FpML does not define the domain values associated with this element. Note that the domain values for this element are not strictly an enumerated list.

Used by:

partyTradeIdentifier

DTD Fragment:

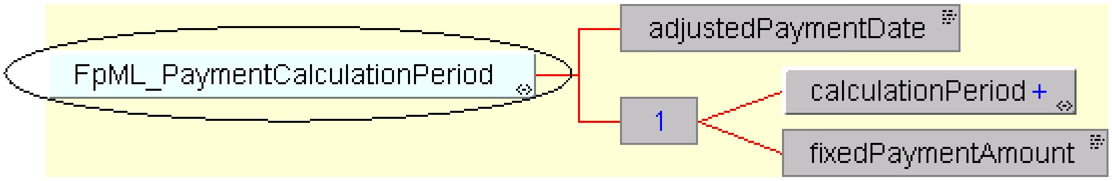
```
<!ENTITY % FpML_PartyTradeIdentifier "partyReference , tradeId+ , linkId*">
```

FpML_PaymentCalculationPeriod

Description:

An entity defining the adjusted payment date and associated calculation period parameters required to calculate the actual or projected payment amount. This entity forms part of the cashflows representation of a swap stream.

Figure:



Contents:

adjustedPaymentDate (exactly one occurrence; of type *date*)

- The adjusted payment date. This date should already be adjusted for any applicable business day convention.

Either

calculationPeriod (one or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_CalculationPeriod)

- The parameters used in the calculation of a fixed or floating rate calculation period amount. A list of calculation period elements may be ordered in the document by ascending adjusted start date. An FpML document which contains an unordered list of calculation periods is still regarded as a conformant document.

Or

fixedPaymentAmount (exactly one occurrence; of type *decimal*)

- A known fixed payment amount.

Used by:

paymentCalculationPeriod

DTD Fragment:

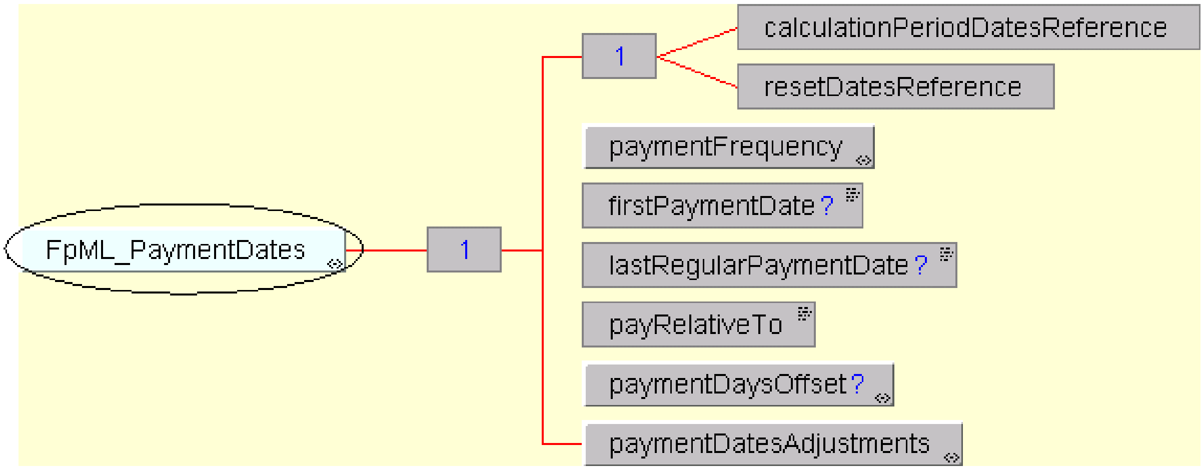
```
<!ENTITY % FpML_PaymentCalculationPeriod "adjustedPaymentDate ,
(calculationPeriod+ | fixedPaymentAmount)">
```

FpML_PaymentDates

Description:

An entity for defining the parameters used to generate the payment dates schedule, including the specification of early or delayed payments. Payment dates are determined relative to the calculation periods dates or the reset dates.

Figure:



Contents:

Either

calculationPeriodDatesReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to the associated calculation period dates component defined elsewhere in the document.

Or

resetDatesReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to the associated reset dates component defined elsewhere in the document.

paymentFrequency (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Interval)

- The frequency at which regular payment dates occur. If the payment frequency is equal to the frequency defined in the calculation period dates component then one calculation period contributes to each payment amount. If the payment frequency is less frequent than the frequency defined in the calculation period dates component then more than one calculation period will contribute to each payment amount. A payment frequency more frequent than the calculation period frequency or one that is not a multiple of the calculation period frequency is invalid.

firstPaymentDate (zero or one occurrence; of type *date*)

- The first unadjusted payment date. This day may be subject to adjustment in accordance with any business day convention specified in paymentDatesAdjustments. This element must only be included if there is an initial stub. This date will normally correspond to an unadjusted calculation period start or end date. This is true even if early or delayed payment is specified to be applicable since the actual first payment date will be the specified number of days before or after the applicable adjusted calculation period start or end date with the resulting payment date then being adjusted in accordance with any business day convention specified in paymentDatesAdjustments.

lastRegularPaymentDate (zero or one occurrence; of type *date*)

- The last regular unadjusted payment date. This day may be subject to adjustment in accordance with any business day convention specified in paymentDatesAdjustments. This element must only be included if there is a final stub. All calculation periods after this date contribute to the final payment. The final payment is made relative to the final set of calculation periods or the final reset date as the case may be. This date will normally correspond to an unadjusted calculation period start or end date. This is true even if early or delayed payment is specified to be applicable since the actual last regular payment date will be the specified number of days before or after the applicable adjusted calculation period start or end date with the resulting payment date then being adjusted in accordance with any business day convention specified in paymentDatesAdjustments.

payRelativeTo (exactly one occurrence; of type *string*, an enumerated domain value defined by *payRelativeToScheme*)

- Specifies whether the payments occur relative to each adjusted calculation period start date, adjusted calculation period end date or each reset date. The reset date is applicable in the case of certain euro (former French Franc) floating rate indices. Calculation period start date means relative to the start of the first calculation period contributing to a given payment. Similarly, calculation period end date means the end of the last calculation period contributing to a given payment.

paymentDaysOffset (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Offset)

- If early payment or delayed payment is required, specifies the number of days offset that the payment occurs relative to what would otherwise be the unadjusted payment date. The offset can be specified in terms of either calendar or business days. Even in the case of a calendar days offset, the resulting payment date, adjusted for the specified calendar days offset, will still be adjusted in accordance with the specified payment dates adjustments. This element should only be included if early or delayed payment is applicable, i.e. if the periodMultiplier element value is not equal to zero.

paymentDatesAdjustments (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_BusinessDayAdjustments)

- The business day convention to apply to each payment date if it would otherwise fall on a day that is not a business day in the specified financial business centers.

Used by:

paymentDates

DTD Fragment:

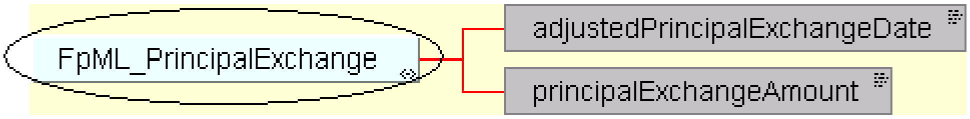
```
<!ENTITY % FpML_PaymentDates "((calculationPeriodDatesReference |
resetDatesReference) , paymentFrequency , firstPaymentDate? ,
lastRegularPaymentDate? , payRelativeTo , paymentDaysOffset? ,
paymentDatesAdjustments)">
```

FpML_PrincipalExchange

Description:

An entity for defining a principal exchange amount and adjusted exchange date. This entity forms part of the cashflows representation of a swap stream.

Figure:



Contents:

adjustedPrincipalExchangeDate (exactly one occurrence; of type *date*)

- The principal exchange date. This date should already be adjusted for any applicable business day convention.

principalExchangeAmount (exactly one occurrence; of type *decimal*)

- The principal exchange amount. This amount should be positive if the stream payer is paying the exchange amount and signed negative if they are receiving it.

Used by:

principalExchange

DTD Fragment:

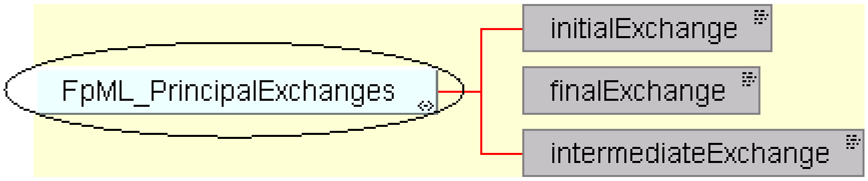
```
<!ENTITY % FpML_PrincipalExchange "adjustedPrincipalExchangeDate ,
principalExchangeAmount">
```

FpML_PrincipalExchanges

Description:

An entity for defining which principal exchanges occur for the stream.

Figure:



Contents:

initialExchange (exactly one occurrence; of type *boolean*)

- A true/false flag to indicate whether there is an initial exchange of principal on the effective date.

finalExchange (exactly one occurrence; of type *boolean*)

- A true/false flag to indicate whether there is a final exchange of principal on the termination date.

intermediateExchange (exactly one occurrence; of type *boolean*)

- A true/false flag to indicate whether there are intermediate (interim) exchanges of principal during the term of the swap.

Used by:

principalExchanges

DTD Fragment:

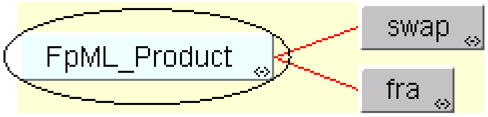
```
<!ENTITY % FpML_PrincipalExchanges "initialExchange , finalExchange ,
intermediateExchange">
```

FpML_Product

Description:

An entity defining the available product definitions.

Figure:



Contents:

Either

swap (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Swap)

- A swap product definition.

Or

fra (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Fra)

- A forward rate agreement product definition.

Used by:

product

DTD Fragment:

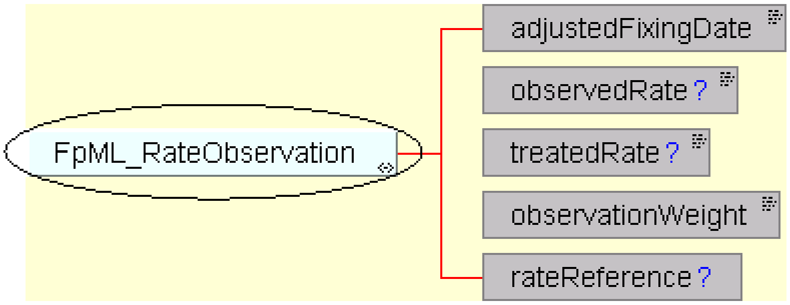
```
<!ENTITY % FpML_Product "swap | fra">
```

FpML_RateObservation

Description:

An entity for defining parameters associated with an individual rate observation or fixing. This entity forms part of the cashflows representation of a stream.

Figure:



Contents:

adjustedFixingDate (exactly one occurrence; of type *date*)

- The adjusted fixing date, i.e. the actual date the rate is observed. This date should already be adjusted for any applicable business day convention.

observedRate (zero or one occurrence; of type *decimal*)

- The actual observed rate before any required rate treatment is applied, e.g. before converting a rate quoted on a discount basis to an equivalent yield. An observed rate of 5% would be represented as 0.05.

treatedRate (zero or one occurrence; of type *decimal*)

- The observed rate after any required rate treatment is applied. A treated rate of 5% would be represented as 0.05.

observationWeight (exactly one occurrence; of type *positiveInteger*)

- The number of days weighting to be associated with the rate observation, i.e. the number of days such rate is in effect. This is applicable in the case of a weighted average method of calculation where more than one reset date is established for a single calculation period.

rateReference (zero or one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a floating rate component defined as part of a stub calculation period amount component. It is only required when

```
      it is necessary to distinguish two rate observations for the same
      fixing date which could occur when linear interpolation of two
      different rates occurs for a stub calculation period.
```

Used by:

`rateObservation`

DTD Fragment:

```
<!ENTITY % FpML_RateObservation "adjustedFixingDate , observedRate? ,
treatedRate? , observationWeight , rateReference?">
```

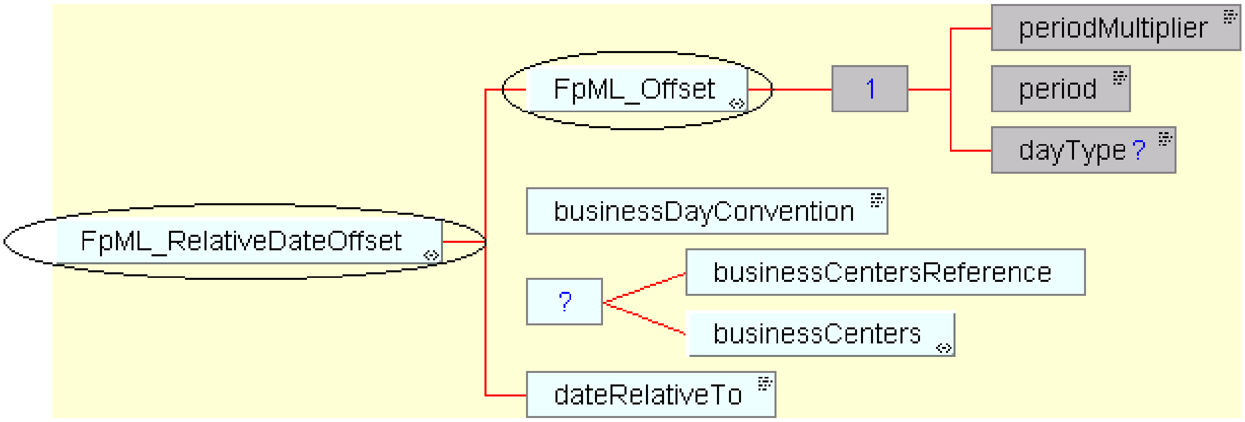
FpML_RelativeDateOffset

Description:

An entity for defining a date (referred to as the derived date) as a relative offset from another date (referred to as the anchor date). If the anchor date is itself an adjustable date then the offset is assumed to be calculated from the adjusted anchor date. A number of different scenarios can be supported, namely; 1) the derived date may simply be a number of calendar periods (days, weeks, months or years) preceding or following the anchor date; 2) the unadjusted derived date may be a number of calendar periods (days, weeks, months, years) preceding or following the anchor date with the resulting unadjusted derived date subject to adjustment in accordance with a specified business day convention, i.e. the derived date must fall on a good business day; 3) the derived date may be a number of business days preceding or following the anchor date.

Note that the businessDayConvention element specifies any required adjustment to the unadjusted derived date. A negative or positive value in the periodMultiplier element indicates whether the unadjusted derived date precedes or follows the anchor date. The businessDayConvention element should contain a value of NONE if the dayType element contains a value of Business (since specifying a negative or positive business days offset would already guarantee that the derived date would fall on a good business day in the specified business centers).

Figure:



Contents:

inherited element(s) (this entity inherits the element(s) defined by exactly one occurrence of the entity FpML_Offset)

- The time interval between the unadjusted derived date and the anchor date specified as a number of days, weeks, months or years. A negative value in the periodMultiplier element implies the unadjusted derived date precedes the anchor date. The financial business centers to use for determination of business days when the dayType element contains the value Business are defined explicitly by the businessCenters element or implicitly by the businessCentersReference element.

businessDayConvention (exactly one occurrence; of type *string*, an enumerated domain value defined by *businessDayConventionScheme*)

- The convention for adjusting a date if it would otherwise fall on a day that is not a business day. If the business day convention value is NONE then the businessCentersReference or businessCenters element should still be included if the dayType element contains a value of Business since the business centers defined are those used for determining good business days.

Zero or one occurrence of either

businessCentersReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to a set of financial business centers defined elsewhere in the document. This set of business centers is used to determine whether a particular day is a business day or not.

Or

businessCenters (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_BusinessCenters)

- A container for a set of financial business centers. This set of business centers is used to determine whether a day is a business day or not.

dateRelativeTo (exactly one occurrence; of type *string*, an enumerated domain value defined by *dateRelativeToScheme*)

- Specifies the anchor date. This element also carries an href attribute. The href attribute value will be a pointer style reference to the element or component elsewhere in the document where the anchor date is defined.

Used by:

fixingDateOffset
fixingDates

DTD Fragment:

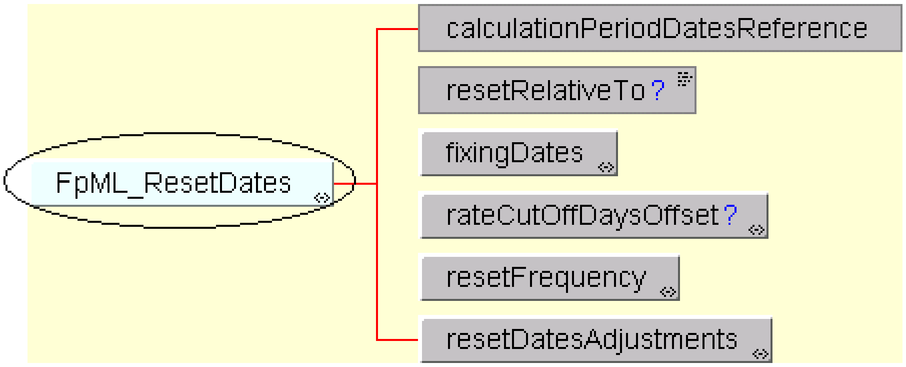
```
<!ENTITY % FpML_RelativeDateOffset "%FpML_Offset; , businessDayConvention ,
(businessCentersReference | businessCenters )? , dateRelativeTo">
```

FpML_ResetDates

Description:

An entity for defining the parameters used to generate the reset dates schedule and associated fixing dates. The reset dates are determined relative to the calculation periods schedule dates

Figure:



Contents:

calculationPeriodDatesReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to the associated calculation period dates component defined elsewhere in the document.

resetRelativeTo (zero or one occurrence; of type *string*, an enumerated domain value defined by *resetRelativeToScheme*)

- Specifies whether the reset dates are determined with respect to each adjusted calculation period start date or adjusted calculation period end date. If the reset frequency is specified as daily this element must not be included.

fixingDates (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_RelativeDateOffset)

- Specifies the fixing date relative to each reset date in terms of a business days offset and an associated set of financial business centers. Normally these offset calculation rules will be those specified in the ISDA definition for the relevant floating rate index (ISDA's Floating Rate Option). However, non-standard offset calculation rules may apply for a trade if mutually agreed by the principal parties to the transaction. The href attribute on the dateRelativeTo element should reference the id attribute on the resetDates element.

rateCutOffDaysOffset (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Offset)

- Specifies the number of business days before the period end date when the rate cut-off date is assumed to apply. The financial business centers associated with determining the rate cut-off date are those specified in the reset dates adjustments. The rate cut-off number of days specified by the periodMultiplier element must be a negative integer (a value of zero would imply no rate cut off applies in which case the rateCutOffDaysOffset element should not be included). The relative rate for each reset date in the period from, and including, a rate cut-off date to, but excluding, the next applicable period end date (or, in the case of the last calculation period, the termination date) will (solely for purposes of calculating the floating amount payable on the next applicable payment date) be deemed to be the relevant rate in effect on that rate cut-off date. For example, if rate cut-off days for a daily averaging deal is -2 business days, then the refix rate applied on (period end date - 2 days) will also be applied as the reset on (period end date - 1 day), i.e. the actual number of reset dates remains the same but from the rate cut-off date until the period end date, the same refix rate is applied. Note that in the case of several calculation periods contributing to a single payment, the rate cut-off is assumed only to apply to the final calculation period contributing to that payment. The day type associated with the offset must imply a business days offset.

resetFrequency (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_ResetFrequency)

- The frequency at which reset dates occur. In the case of a weekly reset frequency, also specifies the day of the week that the reset occurs. If the reset frequency is greater than the calculation period frequency then this implies that more than one reset date is established for each calculation period and some form of rate averaging is applicable.

resetDatesAdjustments (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_BusinessDayAdjustments)

- The business day convention to apply to each reset date if it would otherwise fall on a day that is not a business day in the specified financial business centers.

Used by:

resetDates

DTD Fragment:

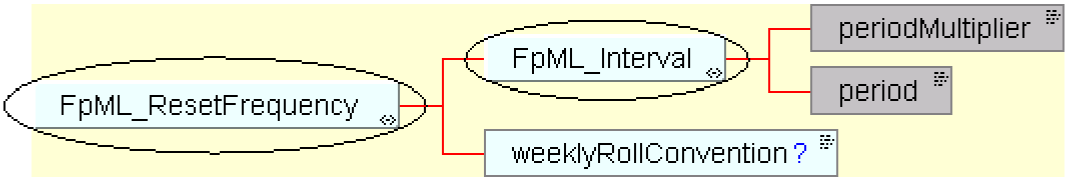
```
<!ENTITY % FpML_ResetDates "calculationPeriodDatesReference ,
resetRelativeTo? , fixingDates , rateCutOffDaysOffset? , resetFrequency ,
resetDatesAdjustments">
```

FpML_ResetFrequency

Description:

An entity for defining the reset frequency. In the case of a weekly reset, also specifies the day of the week that the reset occurs. This entity inherits from a base entity, FpML_Interval. If the reset frequency is greater than the calculation period frequency then this implies that more than one reset date is established for each calculation period and some form of rate averaging is applicable. The specific averaging method of calculation is specified in the entity FpML_FloatingRateCalculation.

Figure:



Contents:

inherited element(s) (this entity inherits the element(s) defined by exactly one occurrence of the entity FpML_Interval)

- The frequency at which resets occur.

weeklyRollConvention (zero or one occurrence; of type *string*, an enumerated domain value defined by *weeklyRollConventionScheme*)

- The day of the week on which a weekly reset date occurs. This element must be included if the reset frequency is defined as weekly and not otherwise.

Used by:

resetFrequency

DTD Fragment:

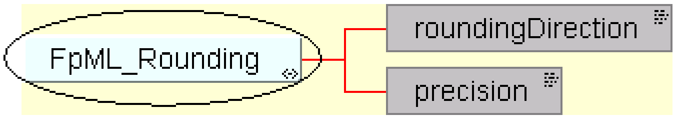
```
<!ENTITY % FpML_ResetFrequency "(%FpML_Interval; , weeklyRollConvention?)">
```

FpML_Rounding

Description:

An entity for defining a rounding direction and precision to be used in the rounding of a rate.

Figure:



Contents:

roundingDirection (exactly one occurrence; of type *string*, an enumerated domain value defined by *roundingDirectionScheme*)

- Specifies the rounding direction.

precision (exactly one occurrence; of type *nonNegativeInteger*)

- Specifies the rounding precision in terms of a number of 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).

Used by:

finalRateRounding

DTD Fragment:

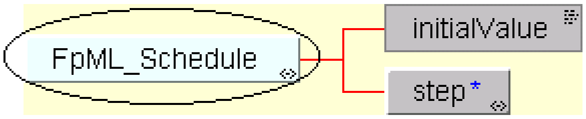
```
<!ENTITY % FpML_Rounding "roundingDirection , precision">
```

FpML_Schedule

Description:

An entity for defining a schedule of rate or amounts in terms of an initial value and then a series of step date and value pairs. On each step date the rate or amount changes to the new step value. The series of step date and value pairs are optional. If not specified, this implies that the initial value remains unchanged over time.

Figure:



Contents:

initialValue (exactly one occurrence; of type *decimal*)

- The initial rate or amount, as the case may be. An initial rate of 5% would be represented as 0.05.

step (zero or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Step)

- The schedule of step date and value pairs. On each step date the associated step value becomes effective. A list of steps may be ordered in the document by ascending step date. An FpML document containing an unordered list of steps is still regarded as a conformant document.

Used by:

FpML_AmountSchedule
capRateSchedule
fixedRateSchedule
floorRateSchedule
spreadSchedule

DTD Fragment:

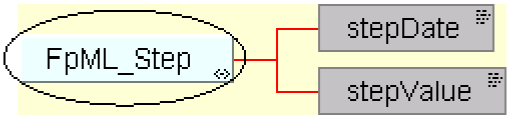
```
<!ENTITY % FpML_Schedule "initialValue , step*">
```

FpML_Step

Description:

An entity for defining a step date and step value pair. These step definitions are used to define varying rate or amount schedules, e.g. a notional amortization or a step-up coupon schedule.

Figure:



Contents:

stepDate (exactly one occurrence; of type *date*)

- The date on which the associated stepValue becomes effective. This day may be subject to adjustment in accordance with a business day convention.

stepValue (exactly one occurrence; of type *decimal*)

- The rate or amount which becomes effective on the associated stepDate. A rate of 5% would be represented as 0.05.

Used by:

step

DTD Fragment:

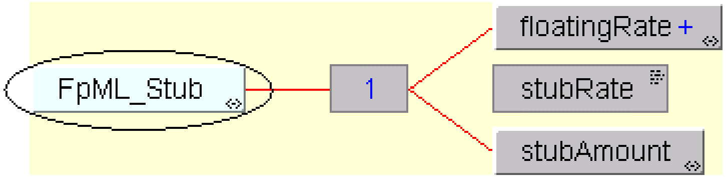
```
<!ENTITY % FpML_Step "stepDate , stepValue">
```

FpML_Stub

Description:

An entity for defining how a stub calculation period amount is calculated. A single floating rate tenor different to that used for the regular part of the calculation periods schedule may be specified, or two floating rate tenors may be specified. If two floating rate tenors are specified then Linear Interpolation (in accordance with the 2000 ISDA Definitions, Section 8.3. Interpolation) is assumed to apply. Alternatively, an actual known stub rate or stub amount may be specified.

Figure:



Contents:

Either

floatingRate (one or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_FloatingRate)

- The rates to be applied to the initial or final stub may be the linear interpolation of two different rates. While the majority of the time, the rate indices will be the same as that specified in the stream and only the tenor itself will be different, it is possible to specify two different rates. For example, a 2 month stub period may use the linear interpolation of a 1 month and 3 month rate. The different rates would be specified in this component. Note that a maximum of two rates can be specified. If a stub period uses the same floating rate index, including tenor, as the regular calculation periods then this should not be specified again within this component, i.e. the stub calculation period amount component may not need to be specified even if there is an initial or final stub period. If a stub period uses a different floating rate index compared to the regular calculation periods then this should be specified within this component. If specified here, they are likely to have id attributes, allowing them to be referenced from within the cashflows component.

Or

stubRate (exactly one occurrence; of type *decimal*)

- An actual rate to apply for the initial or final stub period may have been agreed between the principal parties (in a similar way to how an initial rate may have been agreed for the first regular period). If an actual stub rate has been agreed then it would be included in this component. It will be a per annum rate, expressed as a decimal. A stub rate of 5% would be represented as 0.05.

Or

stubAmount (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Money)

- An actual amount to apply for the initial or final stub period may have been agreed between the two parties. If an actual stub amount has been agreed then it would be included in this component.

Used by:

finalStub
initialStub

DTD Fragment:

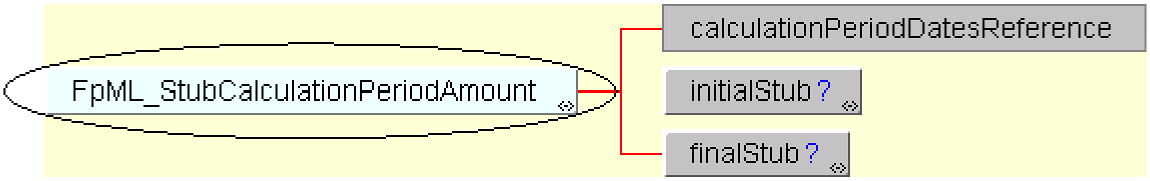
```
<!ENTITY % FpML_Stub "(floatingRate+ | stubRate | stubAmount)">
```

FpML_StubCalculationPeriodAmount

Description:

An entity for defining how the initial or final stub calculation period amounts is calculated. For example, the rate to be applied to the initial or final stub calculation period may be the linear interpolation of two different tenors for the floating rate index specified in the calculation period amount component, e.g. A two month stub period may use the linear interpolation of a one month and three month floating rate. The different rate tenors would be specified in this component. Note that a maximum of two rate tenors can be specified. If a stub period uses a single index tenor and this is the same as that specified in the calculation period amount component then the initial stub or final stub element, as the case may be, must not be included.

Figure:


FpML_StubCalculationPeriodAmount
calculationPeriodDatesReference
initialStub ?
finalStub ?

Contents:

calculationPeriodDatesReference (exactly one occurrence; an *empty* element containing an *href* attribute)

- A pointer style reference to the associated calculation period dates component defined elsewhere in the document.

initialStub (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Stub)

- Specifies how the initial stub amount is calculated. A single floating rate tenor different to that used for the regular part of the calculation periods schedule may be specified, or two floating tenors may be specified. If two floating rate tenors are specified then Linear Interpolation (in accordance with the 2000 ISDA Definitions, Section 8.3. Interpolation) is assumed to apply. Alternatively, an actual known stub rate or stub amount may be specified.

finalStub (zero or one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Stub)

- Specifies how the final stub amount is calculated. A single floating rate tenor different to that used for the regular part of the calculation periods schedule may be specified, or two floating tenors may be specified. If two floating rate tenors are specified then Linear Interpolation (in accordance with the 2000 ISDA Definitions, Section 8.3. Interpolation) is assumed to apply. Alternatively, an actual known stub rate or stub amount may be specified.

Used by:

stubCalculationPeriodAmount

DTD Fragment:

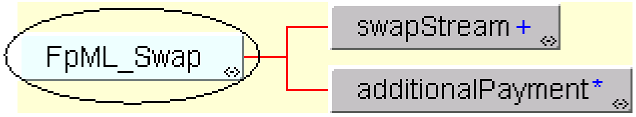
```
<!ENTITY % FpML_StubCalculationPeriodAmount "calculationPeriodDatesReference
, initialStub? , finalStub?">
```

FpML_Swap

Description:

An entity for defining swap streams and additional payments between the principal parties involved in the swap.

Figure:



Contents:

swapStream (one or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_InterestRateStream)

- The swap streams.

additionalPayment (zero or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Fee)

- Additional payments between the principal parties involved in the swap.

Used by:

swap

DTD Fragment:

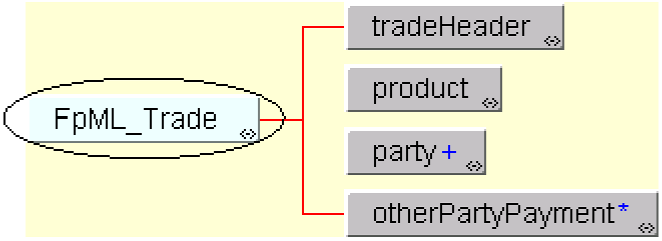
```
<!ENTITY % FpML_Swap "swapStream+ , additionalPayment*">
```

FpML_Trade

Description:

An entity for defining an FpML trade.

Figure:



Contents:

tradeHeader (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_TradeHeader)

- The information on the trade which is not product specific, e.g. trade date.

product (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Product)

- The product definition appropriate for the type of trade. Currently restricted to either a swap or forward rate agreement.

party (one or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Party)

- The parties obligated to make payments from time to time during the term of the trade. This will include, at a minimum, the principal parties involved in the swap or forward rate agreement. Other parties paying or receiving fees, commissions etc. must also be specified if referenced in other party payments.

otherPartyPayment (zero or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_Fee)

- Other fees or additional payments associated with the trade, e.g. broker commissions, where one or more of the parties involved are not principal parties involved in the trade.

Used by:

trade

DTD Fragment:

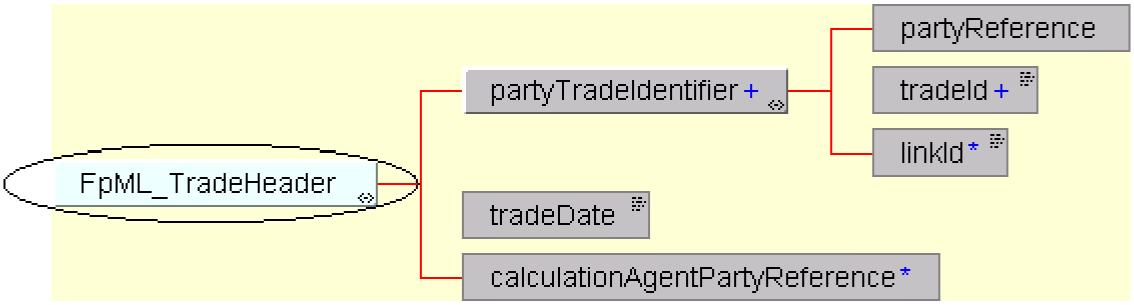
```
<!ENTITY % FpML_Trade "tradeHeader , product , party+ , otherPartyPayment*">
```

FpML_TradeHeader

Description:

An entity for defining trade related information which is not product specific.

Figure:



Contents:

partyTradeIdentifier (one or more occurrences; contains the sub-element(s) defined by exactly one occurrence of the entity FpML_PartyTradeIdentifier)

- The trade reference identifier(s) allocated to the trade by the parties involved.

tradeDate (exactly one occurrence; of type *date*)

- The trade date.

calculationAgentPartyReference (zero or more occurrences; an *empty* element containing an *href* attribute)

- A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the ISDA Calculation Agent for the trade. If more than one party is referenced then the parties are assumed to be co-calculation agents, i.e. they have joint responsibility.

Used by:

tradeHeader

DTD Fragment:

```
<!ENTITY % FpML_TradeHeader "partyTradeIdentifier+ , tradeDate ,
calculationAgentPartyReference*">
```

5 DOCUMENT TYPE DEFINITION (DTD)

5.1 fpml-dtd-1-0

```
<!-- uri://www.fpml.org/spec/2001/fpml-dtd-1-0-2001-05-14 -->

<!ENTITY % FpML_AdjustableDate "unadjustedDate
                                , dateAdjustments">

<!ENTITY % FpML_BusinessCenters "businessCenter+">

<!ENTITY % FpML_BusinessDayAdjustments "businessDayConvention
                                        ,  (businessCentersReference
                                        | businessCenters )?">

<!ENTITY % FpML_Calculation "notionalSchedule
                             ,  (fixedRateSchedule
                             | floatingRateCalculation )
                             , dayCountFraction
                             , discounting?
                             , compoundingMethod?">

<!ENTITY % FpML_CalculationPeriod "adjustedStartDate
                                   , adjustedEndDate
                                   , notionalAmount
                                   ,  (floatingRateDefinition
                                   | fixedRate )">

<!ENTITY % FpML_CalculationPeriodAmount "calculation
                                         | knownAmountSchedule">

<!ENTITY % FpML_CalculationPeriodDates "effectiveDate
                                        , terminationDate
                                        , calculationPeriodDatesAdjustments
                                        , firstPeriodStartDate?
                                        , firstRegularPeriodStartDate?
                                        , lastRegularPeriodEndDate?
                                        , calculationPeriodFrequency">

<!ENTITY % FpML_Cashflows "cashflowsMatchParameters
                           , principalExchange*
                           , paymentCalculationPeriod*">

<!ENTITY % FpML_Discounting "discountingType
                             , discountRate?
                             , discountRateDayCountFraction?">

<!ENTITY % FpML_Fee "payerPartyReference
                     , receiverPartyReference
                     , paymentType?
                     , paymentAmount
                     , paymentDate?
                     , adjustedPaymentDate?">

<!ENTITY % FpML_FloatingRate "floatingRateIndex
                              , indexTenor?
                              , spreadSchedule?
                              , rateTreatment?
                              , capRateSchedule?
                              , floorRateSchedule?">

<!ENTITY % FpML_FloatingRateCalculation " (%FpML_FloatingRate;
                                         , initialRate?
                                         , finalRateRounding?
                                         , averagingMethod?
                                         , negativeInterestRateTreatment? )">
```

```
<!ENTITY % FpML_FloatingRateDefinition "calculatedRate?
                                        , rateObservation*
                                        , spread?
                                        , capRate?
                                        , floorRate?">

<!ENTITY % FpML_Fra "buyerPartyReference
                     , sellerPartyReference
                     , adjustedEffectiveDate
                     , adjustedTerminationDate
                     , paymentDate
                     , fixingDateOffset
                     , dayCountFraction
                     , calculationPeriodNumberOfDays
                     , notional
                     , fixedRate
                     , floatingRateIndex
                     , indexTenor+
                     , fraDiscounting">

<!ENTITY % FpML_InterestRateStream "payerPartyReference
                                    , receiverPartyReference
                                    , calculationPeriodDates
                                    , paymentDates
                                    , resetDates?
                                    , calculationPeriodAmount
                                    , stubCalculationPeriodAmount?
                                    , principalExchanges?
                                    , cashflows?">

<!ENTITY % FpML_Interval "periodMultiplier
                          , period">

<!ENTITY % FpML_CalculationPeriodFrequency "(%FpML_Interval;
                                            , rollConvention)">

<!ENTITY % FpML_Money "currency
                       , amount">

<!ENTITY % FpML_Notional "notionalStepSchedule
                          , notionalStepParameters?">

<!ENTITY % FpML_NotionalStepRule "calculationPeriodDatesReference
                                  , stepFrequency
                                  , firstNotionalStepDate
                                  , lastNotionalStepDate
                                  ,  (notionalStepAmount
                                  |  (notionalStepRate
                                  , stepRelativeTo ) )">

<!ENTITY % FpML_Offset " (%FpML_Interval;
                        , dayType? )">

<!ENTITY % FpML_Party "partyId
                       , partyName?">

<!ENTITY % FpML_PartyTradeIdentifier "partyReference
                                      , tradeId+
                                      , linkId*">

<!ENTITY % FpML_PaymentCalculationPeriod "adjustedPaymentDate
                                          ,  (calculationPeriod+
                                          | fixedPaymentAmount )">

<!ENTITY % FpML_PaymentDates " ( (calculationPeriodDatesReference
                              | resetDatesReference )
                              , paymentFrequency
                              , firstPaymentDate?
                              , lastRegularPaymentDate?
                              , payRelativeTo
                              , paymentDaysOffset?
                              , paymentDatesAdjustments )">

<!ENTITY % FpML_PrincipalExchange "adjustedPrincipalExchangeDate
                                   , principalExchangeAmount">

<!ENTITY % FpML_PrincipalExchanges "initialExchange
                                    , finalExchange
                                    , intermediateExchange">

<!ENTITY % FpML_Product "swap
                         | fra">

<!ENTITY % FpML_RateObservation "adjustedFixingDate
                                 , observedRate?
                                 , treatedRate?
                                 , observationWeight
                                 , rateReference?">

<!ENTITY % FpML_RelativeDateOffset "(%FpML_Offset;
                                      , businessDayConvention
                                      , (businessCentersReference
                                      | businessCenters )?
                                      , dateRelativeTo)">

<!ENTITY % FpML_ResetDates "calculationPeriodDatesReference
                            , resetRelativeTo?
                            , fixingDates
                            , rateCutOffDaysOffset?
                            , resetFrequency
                            , resetDatesAdjustments">

<!ENTITY % FpML_ResetFrequency " (%FpML_Interval;
                                , weeklyRollConvention? )">

<!ENTITY % FpML_Rounding "roundingDirection
                          , precision">

<!ENTITY % FpML_Schedule "initialValue
                          , step*">

<!ENTITY % FpML_AmountSchedule " (%FpML_Schedule;
                                , currency )">

<!ENTITY % FpML_Step "stepDate
                      , stepValue">

<!ENTITY % FpML_Stub " (floatingRate+
                      | stubRate
                      | stubAmount )">

<!ENTITY % FpML_StubCalculationPeriodAmount "calculationPeriodDatesReference
                                             , initialStub?
                                             , finalStub?">

<!ENTITY % FpML_Swap "swapStream+
                      , additionalPayment*">

<!ENTITY % FpML_Trade "tradeHeader
                       , product
                       , party+
                       , otherPartyPayment*">

<!ENTITY % FpML_TradeHeader "partyTradeIdentifier+
                             , tradeDate
                             , calculationAgentPartyReference*">

<!ELEMENT FpML  (trade )>
<!ATTLIST FpML  version                                   (1-0)  #REQUIRED
                averagingMethodSchemeDefault               CDATA  #IMPLIED
                businessCenterSchemeDefault                CDATA  #IMPLIED
                businessDayConventionSchemeDefault         CDATA  #IMPLIED
                compoundingMethodSchemeDefault            CDATA  #IMPLIED
                currencySchemeDefault                     CDATA  #IMPLIED
                dateRelativeToSchemeDefault               CDATA  #IMPLIED
                dayCountFractionSchemeDefault             CDATA  #IMPLIED
                dayTypeSchemeDefault                      CDATA  #IMPLIED
                discountingTypeSchemeDefault              CDATA  #IMPLIED
                floatingRateIndexSchemeDefault            CDATA  #IMPLIED
                linkIdSchemeDefault                       CDATA  #IMPLIED
                negativeInterestRateTreatmentSchemeDefault CDATA  #IMPLIED
                partyIdSchemeDefault                      CDATA  #IMPLIED
                paymentTypeSchemeDefault                  CDATA  #IMPLIED
                payRelativeToSchemeDefault                CDATA  #IMPLIED
                periodSchemeDefault                       CDATA  #IMPLIED
                rateTreatmentSchemeDefault                CDATA  #IMPLIED
                resetRelativeToSchemeDefault              CDATA  #IMPLIED
                rollConventionSchemeDefault               CDATA  #IMPLIED
                roundingDirectionSchemeDefault            CDATA  #IMPLIED
                stepRelativeToSchemeDefault               CDATA  #IMPLIED
                tradeIdSchemeDefault                      CDATA  #IMPLIED
                weeklyRollConventionSchemeDefault         CDATA  #IMPLIED >

<!ELEMENT additionalPayment  (%FpML_Fee; )>
<!ATTLIST additionalPayment  type NMTOKEN  #FIXED 'Fee'
                             id   ID       #IMPLIED >

<!ELEMENT adjustedEffectiveDate  (#PCDATA )>
<!ATTLIST adjustedEffectiveDate  type NMTOKEN  #FIXED 'date'
                                 id   ID       #REQUIRED >

<!ELEMENT adjustedEndDate  (#PCDATA )>
<!ATTLIST adjustedEndDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT adjustedFixingDate  (#PCDATA )>
<!ATTLIST adjustedFixingDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT adjustedPaymentDate  (#PCDATA )>
<!ATTLIST adjustedPaymentDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT adjustedPrincipalExchangeDate  (#PCDATA )>
<!ATTLIST adjustedPrincipalExchangeDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT adjustedStartDate  (#PCDATA )>
<!ATTLIST adjustedStartDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT adjustedTerminationDate  (#PCDATA )>
<!ATTLIST adjustedTerminationDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT amount  (#PCDATA )>
<!ATTLIST amount  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT averagingMethod  (#PCDATA )>
<!ATTLIST averagingMethod  type                  NMTOKEN  #FIXED 'string'
                           averagingMethodScheme CDATA    #IMPLIED >

<!ELEMENT businessCenter  (#PCDATA )>
<!ATTLIST businessCenter  type                 NMTOKEN  #FIXED 'string'
                          id                   ID       #IMPLIED
                          businessCenterScheme CDATA    #IMPLIED >

<!ELEMENT businessCenters  (%FpML_BusinessCenters; )>
<!ATTLIST businessCenters  type NMTOKEN  #FIXED 'BusinessCenters'
                           id   ID       #IMPLIED >

<!ELEMENT businessCentersReference EMPTY>
<!ATTLIST businessCentersReference  href CDATA  #IMPLIED >

<!ELEMENT businessDayConvention  (#PCDATA )>
<!ATTLIST businessDayConvention  type                        NMTOKEN  #FIXED 'string'
                                 businessDayConventionScheme CDATA    #IMPLIED >

<!ELEMENT buyerPartyReference EMPTY>
```

```
<!ATTLIST buyerPartyReference  href CDATA  #REQUIRED >

<!ELEMENT calculatedRate  (#PCDATA )>
<!ATTLIST calculatedRate  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT calculation  (%FpML_Calculation; )>
<!ATTLIST calculation  type NMTOKEN  #FIXED 'Calculation' >

<!ELEMENT calculationAgentPartyReference EMPTY>
<!ATTLIST calculationAgentPartyReference  href CDATA  #REQUIRED >

<!ELEMENT calculationPeriod  (%FpML_CalculationPeriod; )>
<!ATTLIST calculationPeriod  type NMTOKEN  #FIXED 'CalculationPeriod'
                             id   ID       #IMPLIED >

<!ELEMENT calculationPeriodAmount  (%FpML_CalculationPeriodAmount; )>
<!ATTLIST calculationPeriodAmount  type NMTOKEN  #FIXED 'CalculationPeriodAmount' >

<!ELEMENT calculationPeriodDates  (%FpML_CalculationPeriodDates; )>
<!ATTLIST calculationPeriodDates  type NMTOKEN  #FIXED 'CalculationPeriodDates'
                                  id   ID       #REQUIRED >

<!ELEMENT calculationPeriodDatesAdjustments  (%FpML_BusinessDayAdjustments; )>
<!ATTLIST calculationPeriodDatesAdjustments  type NMTOKEN  #FIXED
'BusinessDayAdjustments' >

<!ELEMENT calculationPeriodDatesReference EMPTY>
<!ATTLIST calculationPeriodDatesReference  href CDATA  #REQUIRED >

<!ELEMENT calculationPeriodFrequency  (%FpML_CalculationPeriodFrequency; )>
<!ATTLIST calculationPeriodFrequency  type NMTOKEN  #FIXED 'CalculationPeriodFrequency'
                                      base NMTOKEN  #FIXED 'Interval' >

<!ELEMENT calculationPeriodNumberOfDays  (#PCDATA )>
<!ATTLIST calculationPeriodNumberOfDays  type NMTOKEN  #FIXED 'positiveInteger' >

<!ELEMENT capRate  (#PCDATA )>
<!ATTLIST capRate  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT capRateSchedule  (%FpML_Schedule; )>
<!ATTLIST capRateSchedule  type NMTOKEN  #FIXED 'Schedule' >

<!ELEMENT cashflows  (%FpML_Cashflows; )>
<!ATTLIST cashflows  type NMTOKEN  #FIXED 'Cashflows' >

<!ELEMENT cashflowsMatchParameters  (#PCDATA )>
<!ATTLIST cashflowsMatchParameters  type NMTOKEN  #FIXED 'boolean' >

<!ELEMENT compoundingMethod  (#PCDATA )>
<!ATTLIST compoundingMethod  type                    NMTOKEN  #FIXED 'string'
                             compoundingMethodScheme CDATA    #IMPLIED >

<!ELEMENT currency  (#PCDATA )>
<!ATTLIST currency  type           NMTOKEN  #FIXED 'string'
                    currencyScheme CDATA    #IMPLIED >

<!ELEMENT dateAdjustments  (%FpML_BusinessDayAdjustments; )>
<!ATTLIST dateAdjustments  type NMTOKEN  #FIXED 'BusinessDayAdjustments' >

<!ELEMENT dateRelativeTo  (#PCDATA )>
<!ATTLIST dateRelativeTo  type                 NMTOKEN  #FIXED 'string'
                          href                 CDATA  #REQUIRED
                          dateRelativeToScheme CDATA    #IMPLIED >

<!ELEMENT dayCountFraction  (#PCDATA )>
<!ATTLIST dayCountFraction  type                   NMTOKEN  #FIXED 'string'
                            dayCountFractionScheme CDATA    #IMPLIED >

<!ELEMENT dayType  (#PCDATA )>
<!ATTLIST dayType  type          NMTOKEN  #FIXED 'string'
                   dayTypeScheme CDATA    #IMPLIED >
```

```
<!ELEMENT discounting  (%FpML_Discounting; )>
<!ATTLIST discounting  type NMTOKEN  #FIXED 'Discounting' >

<!ELEMENT discountingType  (#PCDATA )>
<!ATTLIST discountingType  type                  NMTOKEN  #FIXED 'string'
                           discountingTypeScheme CDATA    #IMPLIED >

<!ELEMENT discountRate  (#PCDATA )>
<!ATTLIST discountRate  type NMTOKEN  #FIXED 'decimal' >


<!ELEMENT discountRateDayCountFraction  (#PCDATA )>
<!ATTLIST discountRateDayCountFraction  type                   NMTOKEN  #FIXED 'string'
                                        dayCountFractionScheme CDATA    #IMPLIED >

<!ELEMENT effectiveDate  (%FpML_AdjustableDate; )>
<!ATTLIST effectiveDate  type NMTOKEN  #FIXED 'AdjustableDate' >

<!ELEMENT finalExchange  (#PCDATA )>
<!ATTLIST finalExchange  type NMTOKEN  #FIXED 'boolean' >

<!ELEMENT finalRateRounding  (%FpML_Rounding; )>
<!ATTLIST finalRateRounding  type NMTOKEN  #FIXED 'Rounding' >

<!ELEMENT finalStub  (%FpML_Stub; )>
<!ATTLIST finalStub  type NMTOKEN  #FIXED 'Stub' >

<!ELEMENT firstNotionalStepDate  (#PCDATA )>
<!ATTLIST firstNotionalStepDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT firstPaymentDate  (#PCDATA )>
<!ATTLIST firstPaymentDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT firstPeriodStartDate  (%FpML_AdjustableDate; )>
<!ATTLIST firstPeriodStartDate  type NMTOKEN  #FIXED 'AdjustableDate' >

<!ELEMENT firstRegularPeriodStartDate  (#PCDATA )>
<!ATTLIST firstRegularPeriodStartDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT fixedPaymentAmount  (#PCDATA )>
<!ATTLIST fixedPaymentAmount  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT fixedRate  (#PCDATA )>
<!ATTLIST fixedRate  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT fixedRateSchedule  (%FpML_Schedule; )>
<!ATTLIST fixedRateSchedule  type NMTOKEN  #FIXED 'Schedule' >

<!ELEMENT fixingDateOffset  (%FpML_RelativeDateOffset; )>
<!ATTLIST fixingDateOffset  type NMTOKEN  #FIXED 'RelativeDateOffset'
                            base NMTOKEN  #FIXED 'Offset' >

<!ELEMENT fixingDates  (%FpML_RelativeDateOffset; )>
<!ATTLIST fixingDates  type NMTOKEN  #FIXED 'RelativeDateOffset'
                       base NMTOKEN  #FIXED 'Offset' >

<!ELEMENT floatingRate  (%FpML_FloatingRate; )>
<!ATTLIST floatingRate  type NMTOKEN  #FIXED 'FloatingRate'
                        id   ID       #IMPLIED >

<!ELEMENT floatingRateCalculation  (%FpML_FloatingRateCalculation; )>
<!ATTLIST floatingRateCalculation  type NMTOKEN  #FIXED 'FloatingRateCalculation'
                                   base NMTOKEN  #FIXED 'FloatingRate' >

<!ELEMENT floatingRateDefinition  (%FpML_FloatingRateDefinition; )>
<!ATTLIST floatingRateDefinition  type NMTOKEN  #FIXED 'FloatingRateDefinition' >

<!ELEMENT floatingRateIndex  (#PCDATA )>
<!ATTLIST floatingRateIndex  type                    NMTOKEN  #FIXED 'string'
                             floatingRateIndexScheme CDATA    #IMPLIED >
```

```
<!ELEMENT floorRate  (#PCDATA )>
<!ATTLIST floorRate  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT floorRateSchedule  (%FpML_Schedule; )>
<!ATTLIST floorRateSchedule  type NMTOKEN  #FIXED 'Schedule' >

<!ELEMENT fra  (%FpML_Fra; )>
<!ATTLIST fra  type NMTOKEN  #FIXED 'Fra' >

<!ELEMENT fraDiscounting  (#PCDATA )>
<!ATTLIST fraDiscounting  type NMTOKEN  #FIXED 'boolean' >

<!ELEMENT indexTenor  (%FpML_Interval; )>
<!ATTLIST indexTenor  type NMTOKEN  #FIXED 'Interval' >

<!ELEMENT initialExchange  (#PCDATA )>
<!ATTLIST initialExchange  type NMTOKEN  #FIXED 'boolean' >

<!ELEMENT initialRate  (#PCDATA )>
<!ATTLIST initialRate  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT initialStub  (%FpML_Stub; )>
<!ATTLIST initialStub  type NMTOKEN  #FIXED 'Stub' >

<!ELEMENT initialValue  (#PCDATA )>
<!ATTLIST initialValue  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT intermediateExchange  (#PCDATA )>
<!ATTLIST intermediateExchange  type NMTOKEN  #FIXED 'boolean' >

<!ELEMENT knownAmountSchedule  (%FpML_AmountSchedule; )>
<!ATTLIST knownAmountSchedule  type NMTOKEN  #FIXED 'AmountSchedule'
                               base NMTOKEN  #FIXED 'Schedule' >

<!ELEMENT lastNotionalStepDate  (#PCDATA )>
<!ATTLIST lastNotionalStepDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT lastRegularPaymentDate  (#PCDATA )>
<!ATTLIST lastRegularPaymentDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT lastRegularPeriodEndDate  (#PCDATA )>
<!ATTLIST lastRegularPeriodEndDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT linkId  (#PCDATA )>
<!ATTLIST linkId  type         NMTOKEN  #FIXED 'string'
                  id           ID       #IMPLIED
                  linkIdScheme CDATA    #IMPLIED >

<!ELEMENT negativeInterestRateTreatment  (#PCDATA )>
<!ATTLIST negativeInterestRateTreatment  type NMTOKEN  #FIXED 'string'
          negativeInterestRateTreatmentScheme CDATA    #IMPLIED >

<!ELEMENT notional  (%FpML_Money; )>
<!ATTLIST notional  type NMTOKEN  #FIXED 'Money' >

<!ELEMENT notionalAmount  (#PCDATA )>
<!ATTLIST notionalAmount  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT notionalSchedule  (%FpML_Notional; )>
<!ATTLIST notionalSchedule  type NMTOKEN  #FIXED 'Notional' >

<!ELEMENT notionalStepAmount  (#PCDATA )>
<!ATTLIST notionalStepAmount  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT notionalStepParameters  (%FpML_NotionalStepRule; )>
<!ATTLIST notionalStepParameters  type NMTOKEN  #FIXED 'NotionalStepRule' >

<!ELEMENT notionalStepRate  (#PCDATA )>
<!ATTLIST notionalStepRate  type NMTOKEN  #FIXED 'decimal' >
```

```
<!ELEMENT notionalStepSchedule  (%FpML_AmountSchedule; )>
<!ATTLIST notionalStepSchedule  type NMTOKEN  #FIXED 'AmountSchedule'
                                base NMTOKEN  #FIXED 'Schedule' >

<!ELEMENT observationWeight  (#PCDATA )>
<!ATTLIST observationWeight  type NMTOKEN  #FIXED 'positiveInteger' >

<!ELEMENT observedRate  (#PCDATA )>
<!ATTLIST observedRate  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT otherPartyPayment  (%FpML_Fee; )>
<!ATTLIST otherPartyPayment  type NMTOKEN  #FIXED 'Fee'
                             id   ID       #IMPLIED >

<!ELEMENT party  (%FpML_Party; )>
<!ATTLIST party  type NMTOKEN  #FIXED 'Party'
                 id   ID       #REQUIRED >

<!ELEMENT partyId  (#PCDATA )>
<!ATTLIST partyId  type          NMTOKEN  #FIXED 'string'
                   partyIdScheme CDATA    #IMPLIED >

<!ELEMENT partyName  (#PCDATA )>
<!ATTLIST partyName  type NMTOKEN  #FIXED 'string' >

<!ELEMENT partyReference EMPTY>
<!ATTLIST partyReference  href CDATA  #REQUIRED >

<!ELEMENT partyTradeIdentifier  (%FpML_PartyTradeIdentifier; )>
<!ATTLIST partyTradeIdentifier  type NMTOKEN  #FIXED 'PartyTradeIdentifier'
                                id   ID       #IMPLIED >

<!ELEMENT payerPartyReference EMPTY>
<!ATTLIST payerPartyReference  href CDATA  #REQUIRED >

<!ELEMENT paymentAmount  (%FpML_Money; )>
<!ATTLIST paymentAmount  type NMTOKEN  #FIXED 'Money' >

<!ELEMENT paymentCalculationPeriod  (%FpML_PaymentCalculationPeriod; )>
<!ATTLIST paymentCalculationPeriod  type NMTOKEN  #FIXED 'PaymentCalculationPeriod'
                                    id   ID       #IMPLIED >

<!ELEMENT paymentDate  (%FpML_AdjustableDate; )>
<!ATTLIST paymentDate  type NMTOKEN  #FIXED 'AdjustableDate' >

<!ELEMENT paymentDates  (%FpML_PaymentDates; )>
<!ATTLIST paymentDates  type NMTOKEN  #FIXED 'PaymentDates' >

<!ELEMENT paymentDatesAdjustments  (%FpML_BusinessDayAdjustments; )>
<!ATTLIST paymentDatesAdjustments  type NMTOKEN  #FIXED 'BusinessDayAdjustments' >

<!ELEMENT paymentDaysOffset  (%FpML_Offset; )>
<!ATTLIST paymentDaysOffset  type NMTOKEN  #FIXED 'Offset'
                             base NMTOKEN  #FIXED 'Interval' >

<!ELEMENT paymentFrequency  (%FpML_Interval; )>
<!ATTLIST paymentFrequency  type NMTOKEN  #FIXED 'Interval' >

<!ELEMENT paymentType  (#PCDATA )>
<!ATTLIST paymentType  type              NMTOKEN  #FIXED 'string'
                       paymentTypeScheme CDATA    #IMPLIED >

<!ELEMENT payRelativeTo  (#PCDATA )>
<!ATTLIST payRelativeTo  type                NMTOKEN  #FIXED 'string'
                         payRelativeToScheme CDATA    #IMPLIED >

<!ELEMENT period  (#PCDATA )>
<!ATTLIST period  type         NMTOKEN  #FIXED 'string'
                  periodScheme CDATA    #IMPLIED >

<!ELEMENT periodMultiplier  (#PCDATA )>
```

```
<!ATTLIST periodMultiplier  type NMTOKEN  #FIXED 'integer' >

<!ELEMENT precision  (#PCDATA )>
<!ATTLIST precision  type NMTOKEN  #FIXED 'nonNegativeInteger' >

<!ELEMENT principalExchange  (%FpML_PrincipalExchange; )>
<!ATTLIST principalExchange  type NMTOKEN  #FIXED 'PrincipalExchange'
                             id   ID       #IMPLIED >

<!ELEMENT principalExchangeAmount  (#PCDATA )>
<!ATTLIST principalExchangeAmount  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT principalExchanges  (%FpML_PrincipalExchanges; )>
<!ATTLIST principalExchanges  type NMTOKEN  #FIXED 'PrincipalExchanges' >

<!ELEMENT product  (%FpML_Product; )>
<!ATTLIST product  type NMTOKEN  #FIXED 'Product' >

<!ELEMENT rateCutOffDaysOffset  (%FpML_Offset; )>
<!ATTLIST rateCutOffDaysOffset  type NMTOKEN  #FIXED 'Offset'
                                base NMTOKEN  #FIXED 'Interval' >

<!ELEMENT rateObservation  (%FpML_RateObservation; )>
<!ATTLIST rateObservation  type NMTOKEN  #FIXED 'RateObservation'
                           id   ID       #IMPLIED >

<!ELEMENT rateReference EMPTY>
<!ATTLIST rateReference  href CDATA  #REQUIRED >

<!ELEMENT rateTreatment  (#PCDATA )>
<!ATTLIST rateTreatment  type                NMTOKEN  #FIXED 'string'
                         rateTreatmentScheme CDATA    #IMPLIED >

<!ELEMENT receiverPartyReference EMPTY>
<!ATTLIST receiverPartyReference  href CDATA  #REQUIRED >

<!ELEMENT resetDates  (%FpML_ResetDates; )>
<!ATTLIST resetDates  type NMTOKEN  #FIXED 'ResetDates'
                      id   ID       #REQUIRED >

<!ELEMENT resetDatesAdjustments  (%FpML_BusinessDayAdjustments; )>
<!ATTLIST resetDatesAdjustments  type NMTOKEN  #FIXED 'BusinessDayAdjustments' >

<!ELEMENT resetDatesReference EMPTY>
<!ATTLIST resetDatesReference  href CDATA  #REQUIRED >

<!ELEMENT resetFrequency  (%FpML_ResetFrequency; )>
<!ATTLIST resetFrequency  type NMTOKEN  #FIXED 'ResetFrequency'
                          base NMTOKEN  #FIXED 'Interval' >

<!ELEMENT resetRelativeTo  (#PCDATA )>
<!ATTLIST resetRelativeTo  type                  NMTOKEN  #FIXED 'string'
                           resetRelativeToScheme CDATA    #IMPLIED >

<!ELEMENT rollConvention  (#PCDATA )>
<!ATTLIST rollConvention  type                 NMTOKEN  #FIXED 'string'
                          rollConventionScheme CDATA    #IMPLIED >

<!ELEMENT roundingDirection  (#PCDATA )>
<!ATTLIST roundingDirection  type                    NMTOKEN  #FIXED 'string'
                             roundingDirectionScheme CDATA    #IMPLIED >

<!ELEMENT sellerPartyReference EMPTY>
<!ATTLIST sellerPartyReference  href CDATA  #REQUIRED >

<!ELEMENT spread  (#PCDATA )>
<!ATTLIST spread  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT spreadSchedule  (%FpML_Schedule; )>
<!ATTLIST spreadSchedule  type NMTOKEN  #FIXED 'Schedule' >
```

```
<!ELEMENT step  (%FpML_Step; )>
<!ATTLIST step  type NMTOKEN  #FIXED 'Step'
                id   ID       #IMPLIED >

<!ELEMENT stepDate  (#PCDATA )>
<!ATTLIST stepDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT stepFrequency  (%FpML_Interval; )>
<!ATTLIST stepFrequency  type NMTOKEN  #FIXED 'Interval' >

<!ELEMENT stepRelativeTo  (#PCDATA )>
<!ATTLIST stepRelativeTo  type                 NMTOKEN  #FIXED 'string'
                          stepRelativeToScheme CDATA    #IMPLIED >

<!ELEMENT stepValue  (#PCDATA )>
<!ATTLIST stepValue  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT stubAmount  (%FpML_Money; )>
<!ATTLIST stubAmount  type NMTOKEN  #FIXED 'Money' >

<!ELEMENT stubCalculationPeriodAmount  (%FpML_StubCalculationPeriodAmount; )>
<!ATTLIST stubCalculationPeriodAmount  type NMTOKEN  #FIXED 'StubCalculationPeriodAmount'
>

<!ELEMENT stubRate  (#PCDATA )>
<!ATTLIST stubRate  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT swap  (%FpML_Swap; )>
<!ATTLIST swap  type NMTOKEN  #FIXED 'Swap' >

<!ELEMENT swapStream  (%FpML_InterestRateStream; )>
<!ATTLIST swapStream  type NMTOKEN  #FIXED 'InterestRateStream'
                      id   ID       #IMPLIED >

<!ELEMENT terminationDate  (%FpML_AdjustableDate; )>
<!ATTLIST terminationDate  type NMTOKEN  #FIXED 'AdjustableDate' >

<!ELEMENT trade  (%FpML_Trade; )>
<!ATTLIST trade  type NMTOKEN  #FIXED 'Trade'
                 id   ID       #IMPLIED >

<!ELEMENT tradeDate  (#PCDATA )>
<!ATTLIST tradeDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT tradeHeader  (%FpML_TradeHeader; )>
<!ATTLIST tradeHeader  type NMTOKEN  #FIXED 'TradeHeader' >

<!ELEMENT tradeId  (#PCDATA )>
<!ATTLIST tradeId  type          NMTOKEN  #FIXED 'string'
                   id            ID       #IMPLIED
                   tradeIdScheme CDATA    #IMPLIED >

<!ELEMENT treatedRate  (#PCDATA )>
<!ATTLIST treatedRate  type NMTOKEN  #FIXED 'decimal' >

<!ELEMENT unadjustedDate  (#PCDATA )>
<!ATTLIST unadjustedDate  type NMTOKEN  #FIXED 'date' >

<!ELEMENT weeklyRollConvention  (#PCDATA )>
<!ATTLIST weeklyRollConvention  type                       NMTOKEN  #FIXED 'string'
                                weeklyRollConventionScheme CDATA    #IMPLIED >
```

6 DATA DICTIONARY

6.1 Element Definitions

Element & Type / Description	Used By Entity
additionalPayment ; entity type: FpML_Fee Additional payments between the principal parties involved in the swap.	FpML_Swap
adjustedEffectiveDate ; built-in datatype: date The start date of the calculation period. This date should already be adjusted for any applicable business day convention. This is also the date when the observed rate is applied, the reset date.	FpML_Fra
adjustedEndDate ; built-in datatype: date The calculation period end date, adjusted according to any relevant business day convention.	FpML_CalculationPeriod
adjustedFixingDate ; built-in datatype: date The adjusted fixing date, i.e. the actual date the rate is observed. This date should already be adjusted for any applicable business day convention.	FpML_RateObservation
adjustedPaymentDate ; built-in datatype: date The adjusted payment date. This date should already be adjusted for any applicable business day convention. (FpML_Fee Usage) This element is not intended for use in trade confirmation but may be specified to allow the fee structure to also serve as a cashflow type component (all dates in the FpML_Cashflows entity are adjusted payment dates).	FpML_Fee FpML_PaymentCalculationPeriod

adjustedPrincipalExchangeDate ; built-in datatype: date The principal exchange date. This date should already be adjusted for any applicable business day convention.	FpML_PrincipalExchange
adjustedStartDate ; built-in datatype: date The calculation period start date, adjusted according to any relevant business day convention.	FpML_CalculationPeriod
adjustedTerminationDate ; built-in datatype: date The end date of the calculation period. This date should already be adjusted for any applicable business day convention.	FpML_Fra
amount ; built-in datatype: decimal The monetary quantity in currency units.	FpML_Money
averagingMethod ; built-in datatype: string If averaging is applicable, this element specifies whether a weighted or unweighted average method of calculation is to be used. The element must only be included when averaging applies.	FpML_FloatingRateCalculation
businessCenter ; built-in datatype: string A code identifying a financial business center location. A list of business centers may be ordered in the document alphabetically based on business center code. An FpML document containing an unordered business center list is still regarded as a conformant document.	FpML_BusinessCenters
businessCenters ; entity type: FpML_BusinessCenters A container for a set of financial business centers. This set of business centers is used to determine whether a day is a business day or not.	FpML_BusinessDayAdjustments FpML_RelativeDateOffset

businessCentersReference ; empty element A pointer style reference to a set of financial business centers defined elsewhere in the document. This set of business centers is used to determine whether a particular day is a business day or not.	FpML_BusinessDayAdjustments FpML_RelativeDateOffset
businessDayConvention ; built-in datatype: string The convention for adjusting a date if it would otherwise fall on a day that is not a business day. (FpML_BusinessDayAdjustments Usage) If the business day convention value is NONE then neither the businessCentersReference or businessCenters element should be included. (FpML_RelativeDateOffset Usage) If the business day convention value is NONE then the businessCentersReference or businessCenters element should still be included if the dayType element contains a value of Business since the business centers defined are those used for determining good business days.	FpML_BusinessDayAdjustments FpML_RelativeDateOffset
buyerPartyReference ; empty element A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the buyer of the instrument, also known as the fixed rate payer.	FpML_Fra
calculatedRate ; built-in datatype: decimal The final calculated rate for a calculation period after any required averaging of rates. A calculated rate of 5% would be represented as 0.05.	FpML_FloatingRateDefinition
calculation ; entity type: FpML_Calculation The parameters used in the calculation of fixed or floating rate calculation period amounts.	FpML_CalculationPeriodAmount

calculationAgentPartyReference ; empty element A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the ISDA Calculation Agent for the trade. If more than one party is referenced then the parties are assumed to be co-calculation agents, i.e. they have joint responsibility.	FpML_TradeHeader
calculationPeriod ; entity type: FpML_CalculationPeriod The parameters used in the calculation of a fixed or floating rate calculation period amount. A list of calculation period elements may be ordered in the document by ascending adjusted start date. An FpML document which contains an unordered list of calculation periods is still regarded as a conformant document.	FpML_PaymentCalculationPeriod
calculationPeriodAmount ; entity type: FpML_CalculationPeriodAmount The calculation period amount parameters.	FpML_InterestRateStream
calculationPeriodDates ; entity type: FpML_CalculationPeriodDates The calculation periods dates schedule.	FpML_InterestRateStream
calculationPeriodDatesAdjustments ; entity type: FpML_BusinessDayAdjustments The business day convention to apply to each calculation period end date if it would otherwise fall on a day that is not a business day in the specified financial business centers.	FpML_CalculationPeriodDates
calculationPeriodDatesReference ; empty element A pointer style reference to the associated calculation period dates component defined elsewhere in the document.	FpML_NotionalStepRule FpML_PaymentDates FpML_ResetDates FpML_StubCalculationPeriodAmount

calculationPeriodfrequency ; entity type: FpML_CalculationPeriodFrequency The frequency at which calculation period end dates occur within the regular part of the calculation period schedule and their roll date convention.	FpML_CalculationPeriodDates
calculationPeriodNumberOfDays ; built-in datatype: positiveInteger The number of days from the adjusted effective date to the adjusted termination date calculated in accordance with the applicable day count fraction.	FpML_Fra
capRate ; built-in datatype: decimal The cap rate, if any, which applies to the floating rate for the calculation period. The cap rate (strike) is only required where the floating rate on a swap stream is capped at a certain strike level. The cap rate is assumed to be exclusive of any spread and is a per annum rate, expressed as a decimal. A cap rate of 5% would be represented as 0.05.	FpML_FloatingRateDefinition
capRateSchedule ; entity type: FpML_Schedule The cap rate or cap rate schedule, if any, which applies to the floating rate. The cap rate (strike) is only required where the floating rate on a swap stream is capped at a certain strike level. A cap rate schedule is expressed as explicit cap rates and dates and the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments. The cap rate is assumed to be exclusive of any spread and is a per annum rate, expressed as a decimal. A cap rate of 5% would be represented as 0.05.	FpML_FloatingRate
cashflows ; entity type: FpML_Cashflows The cashflows representation of the swap stream.	FpML_InterestRateStream
cashflowsMatchParameters ; built-in datatype: boolean	FpML_Cashflows

A true/false flag to indicate whether the cashflows match the parametric definition of the stream, i.e. whether the cashflows could be regenerated from the parameters without loss of information.	
compoundingMethod ; built-in datatype: string If more than one calculation period contributes to a single payment amount this element specifies whether compounding is applicable, and if so, what compounding method is to be used. This element must only be included when more than one calculation period contributes to a single payment amount.	FpML_Calculation
currency ; built-in datatype: string The currency in which an amount is denominated.	FpML_AmountSchedule FpML_Money
dateAdjustments ; entity type: FpML_BusinessDayAdjustments The business day convention and financial business centers used for adjusting the date if it would otherwise fall on a day that is not a business day in the specified business centers.	FpML_AdjustableDate
dateRelativeTo ; built-in datatype: string Specifies the anchor date. This element also carries an href attribute. The href attribute value will be a pointer style reference to the element or component elsewhere in the document where the anchor date is defined.	FpML_RelativeDateOffset
dayCountFraction ; built-in datatype: string The day count fraction.	FpML_Calculation FpML_Fra
dayType ; built-in datatype: string In the case of an offset specified as a number of days, this element defines whether consideration is given as to whether a day is a good business day or not. If a day type of business days is specified then non-business	FpML_Offset

days are ignored when calculating the offset. The financial business centers to use for determination of business days are implied by the context in which this element is used. This element must only be included when the offset is specified as a number of days. If the offset is zero days then the dayType element should not be included.	
discountRateDayCountFraction ; built-in datatype: string A discount day count fraction to be used in the calculation of a discounted amount.	FpML_Discounting
discounting ; entity type: FpML_Discounting The parameters specifying any discounting conventions that may apply. This element must only be included if discounting applies.	FpML_Calculation
discountingType ; built-in datatype: string The discounting method that is applicable.	FpML_Discounting
discountRate ; built-in datatype: decimal A discount rate, expressed as a decimal, to be used in the calculation of a discounted amount. A discount rate of 5% would be represented as 0.05.	FpML_Discounting
effectiveDate ; entity type: FpML_AdjustableDate The first day of the term of the trade. This day may be subject to adjustment in accordance with a business day convention.	FpML_CalculationPeriodDates
finalExchange ; built-in datatype: boolean A true/false flag to indicate whether there is a final exchange of principal on the termination date.	FpML_PrincipalExchanges

finalRateRounding ; entity type: FpML_Rounding The rounding convention to apply to the final rate used in determination of a calculation period amount.	FpML_FloatingRateCalculation
finalStub ; entity type: FpML_Stub Specifies how the final stub amount is calculated. A single floating rate tenor different to that used for the regular part of the calculation periods schedule may be specified, or two floating tenors may be specified. If two floating rate tenors are specified then Linear Interpolation (in accordance with the 2000 ISDA Definitions, Section 8.3. Interpolation) is assumed to apply. Alternatively, an actual known stub rate or stub amount may be specified.	FpML_StubCalculationPeriodAmount
firstNotionalStepDate ; built-in datatype: date The unadjusted calculation period start date of the first change in notional. This day may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.	FpML_NotionalStepRule
firstPaymentDate ; built-in datatype: date The first unadjusted payment date. This day may be subject to adjustment in accordance with any business day convention specified in paymentDatesAdjustments. This element must only be included if there is an initial stub. This date will normally correspond to an unadjusted calculation period start or end date. This is true even if early or delayed payment is specified to be applicable since the actual first payment date will be the specified number of days before or after the applicable adjusted calculation period start or end date with the resulting payment date then being adjusted in accordance with any business day convention specified in paymentDatesAdjustments.	FpML_PaymentDates
firstPeriodStartDate ; entity type: FpML_AdjustableDate The start date of the first calculation period if the date falls before the effective date. It must only be specified	FpML_CalculationPeriodDates

if it is not equal to the effective date. This day may be subject to adjustment in accordance with a business day convention.	
firstRegularPeriodStartDate ; built-in datatype: date The start date of the regular part of the calculation period schedule. It must only be specified if there is an initial stub calculation period. This day may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.	FpML_CalculationPeriodDates
fixedPaymentAmount ; built-in datatype: decimal A known fixed payment amount.	FpML_PaymentCalculationPeriod
fixedRate ; built-in datatype: decimal The calculation period fixed rate. A per annum rate, expressed as a decimal. A fixed rate of 5% would be represented as 0.05.	FpML_CalculationPeriod FpML_Fra
fixedRateSchedule ; entity type: FpML_Schedule The fixed rate or fixed rate schedule expressed as explicit fixed rates and dates. In the case of a schedule, the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.	FpML_Calculation
fixingDateOffset ; entity type: FpML_RelativeDateOffset Specifies the fixing date relative to the reset date in terms of a business days offset and an associated set of financial business centers. Normally these offset calculation rules will be those specified in the ISDA definition for the relevant floating rate index (ISDA's Floating Rate Option). However, non-standard offset calculation rules may apply for a trade if mutually agreed by the principal parties to the transaction. The href attribute on the dateRelativeTo element should reference the id attribute on the adjustedEffectiveDate element.	FpML_Fra

fixingDates ; entity type: FpML_RelativeDateOffset Specifies the fixing date relative to each reset date in terms of a business days offset and an associated set of financial business centers. Normally these offset calculation rules will be those specified in the ISDA definition for the relevant floating rate index (ISDA's Floating Rate Option). However, non-standard offset calculation rules may apply for a trade if mutually agreed by the principal parties to the transaction. The href attribute on the dateRelativeTo element should reference the id attribute on the resetDates element.	FpML_ResetDates
floatingRate ; entity type: FpML_FloatingRate The rates to be applied to the initial or final stub may be the linear interpolation of two different rates. While the majority of the time, the rate indices will be the same as that specified in the stream and only the tenor itself will be different, it is possible to specify two different rates. For example, a 2 month stub period may use the linear interpolation of a 1 month and 3 month rate. The different rates would be specified in this component. Note that a maximum of two rates can be specified. If a stub period uses the same floating rate index, including tenor, as the regular calculation periods then this should not be specified again within this component, i.e. the stub calculation period amount component may not need to be specified even if there is an initial or final stub period. If a stub period uses a different floating rate index compared to the regular calculation periods then this should be specified within this component. If specified here, they are likely to have id attributes, allowing them to be referenced from within the cashflows component.	FpML_Stub
floatingRateCalculation ; entity type: FpML_FloatingRateCalculation The floating rate calculation definitions.	FpML_Calculation
floatingRateDefinition ; entity type: FpML_FloatingRateDefinition The floating rate reset information for the calculation	FpML_CalculationPeriod

period.	
floatingRateIndex ; built-in datatype: string The ISDA Floating Rate Option, i.e. the floating rate index.	FpML_FloatingRate FpML_Fra
floorRate ; built-in datatype: decimal The floor rate, if any, which applies to the floating rate for the calculation period. The floor rate (strike) is only required where the floating rate on a swap stream is floored at a certain strike level. The floor rate is assumed to be exclusive of any spread and is a per annum rate, expressed as a decimal. A floor rate of 5% would be represented as 0.05.	FpML_FloatingRateDefinition
floorRateSchedule ; entity type: FpML_Schedule The floor rate or floor rate schedule, if any, which applies to the floating rate. The floor rate (strike) is only required where the floating rate on a swap stream is floored at a certain strike level. A floor rate schedule is expressed as explicit floor rates and dates and the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments. The floor rate is assumed to be exclusive of any spread and is a per annum rate, expressed as a decimal. A floor rate of 5% would be represented as 0.05.	FpML_FloatingRate
fra ; entity type: FpML_Fra A forward rate agreement product definition.	FpML_Product
fraDiscounting ; built-in datatype: boolean A true/false flag to indicate whether ISDA FRA Discounting applies. If false, then the calculation will be based on a par value and no discounting will apply.	FpML_Fra
indexTenor ; entity type: FpML_Interval	FpML_FloatingRate FpML_Fra

The ISDA Designated Maturity, i.e. the tenor of the floating rate. (FpML_Fra Usage) If linear interpolation of two floating rate tenors is applicable then two index tenors must be specified.	
initialExchange ; built-in datatype: boolean A true/false flag to indicate whether there is an initial exchange of principal on the effective date.	FpML_PrincipalExchanges
initialRate ; built-in datatype: decimal The initial floating rate reset agreed between the principal parties involved in the trade. This is assumed to be the first required reset rate for the first regular calculation period. It should only be included when the rate is not equal to the rate published on the source implied by the floating rate index. An initial rate of 5% would be represented as 0.05.	FpML_FloatingRateCalculation
initialStub ; entity type: FpML_Stub Specifies how the initial stub amount is calculated. A single floating rate tenor different to that used for the regular part of the calculation periods schedule may be specified, or two floating tenors may be specified. If two floating rate tenors are specified then Linear Interpolation (in accordance with the 2000 ISDA Definitions, Section 8.3. Interpolation) is assumed to apply. Alternatively, an actual known stub rate or stub amount may be specified.	FpML_StubCalculationPeriodAmount
initialValue ; built-in datatype: decimal The initial rate or amount, as the case may be. An initial rate of 5% would be represented as 0.05.	FpML_Schedule
intermediateExchange ; built-in datatype: boolean A true/false flag to indicate whether there are intermediate or interim exchanges of principal during the term of the swap.	FpML_PrincipalExchanges

knownAmountSchedule ; entity type: FpML_AmountSchedule The known calculation period amount or a known amount schedule expressed as explicit known amounts and dates. In the case of a schedule, the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.	FpML_CalculationPeriodAmount
lastNotionalStepDate ; built-in datatype: date The unadjusted calculation period end date of the last change in notional. This day may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.	FpML_NotionalStepRule
lastRegularPaymentDate ; built-in datatype: date The last regular unadjusted payment date. This day may be subject to adjustment in accordance with any business day convention specified in paymentDatesAdjustments. This element must only be included if there is a final stub. All calculation periods after this date contribute to the final payment. The final payment is made relative to the final set of calculation periods or the final reset date as the case may be. This date will normally correspond to an unadjusted calculation period start or end date. This is true even if early or delayed payment is specified to be applicable since the actual last regular payment date will be the specified number of days before or after the applicable adjusted calculation period start or end date with the resulting payment date then being adjusted in accordance with any business day convention specified in paymentDatesAdjustments.	FpML_PaymentDates
lastRegularPeriodEndDate ; built-in datatype: date The end date of the regular part of the calculation period schedule. It must only be specified if there is a final stub calculation period. This day may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.	FpML_CalculationPeriodDates

linkId ; built-in datatype: string A link identifier allowing the trade to be associated with other related trades, e.g. the linkId may contain a tradeId for an associated trade or several related trades may be given the same linkId. FpML does not define the domain values associated with this element. Note that the domain values for this element are not strictly an enumerated list.	FpML_PartyTradeIdentifier
negativeInterestRateTreatment ; built-in datatype: string The specification of any provisions for calculating payment obligations when a floating rate is negative (either due to a quoted negative floating rate or by operation of a spread that is subtracted from the floating rate).	FpML_FloatingRateCalculation
notional ; entity type: FpML_Money The notional amount.	FpML_Fra
notionalAmount ; built-in datatype: decimal The calculation period notional amount.	FpML_CalculationPeriod
notionalSchedule ; entity type: FpML_Notional The notional amount or notional amount schedule.	FpML_Calculation
notionalStepAmount ; built-in datatype: decimal The explicit amount that the notional changes on each step date. This can be a positive or negative amount.	FpML_NotionalStepRule
notionalStepParameters ; entity type: FpML_NotionalStepRule A parametric representation of the notional step schedule, i.e. parameters used to generate the notional schedule.	FpML_Notional

notionalStepRate ; built-in datatype: decimal The percentage amount by which the notional changes on each step date. The percentage is either a percentage applied to the initial notional amount or the previous outstanding notional, depending on the value of the element stepRelativeTo. The percentage can be either positive or negative. A percentage of 5% would be represented as 0.05.	FpML_NotionalStepRule
notionalStepSchedule ; entity type: FpML_AmountSchedule The notional amount or notional amount schedule expressed as explicit outstanding notional amounts and dates. In the case of a schedule, the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments.	FpML_Notional
observationWeight ; built-in datatype: positiveInteger The number of days weighting to be associated with the rate observation, i.e. the number of days such rate is in effect. This is applicable in the case of a weighted average method of calculation where more than one reset date is established for a single calculation period.	FpML_RateObservation
observedRate ; built-in datatype: decimal The actual observed rate before any required rate treatment is applied, e.g. before converting a rate quoted on a discount basis to an equivalent yield. An observed rate of 5% would be represented as 0.05.	FpML_RateObservation
otherPartyPayment ; entity type: FpML_Fee Other fees or additional payments associated with the trade, e.g. broker commissions, where one or more of the parties involved are not principal parties involved in the trade.	FpML_Trade
party ; entity type: FpML_Party	FpML_Trade

The parties obligated to make payments from time to time during the term of the trade. This will include, at a minimum, the principal parties involved in the swap or forward rate agreement. Other parties paying or receiving fees, commissions etc. must also be specified if referenced in other party payments.	
partyId ; built-in datatype: string A party identifier, e.g. a S.W.I.F.T. bank identifier code (BIC).	FpML_Party
partyName ; built-in datatype: string The name of the party. A free format string. FpML does not define usage rules for this element.	FpML_Party
partyReference ; empty element A pointer style reference to a party identifier defined elsewhere in the document. The party referenced has allocated the trade identifier.	FpML_PartyTradeIdentifier
partyTradeIdentifier ; entity type: FpML_PartyTradeIdentifier The trade reference identifier(s) allocated to the trade by the parties involved.	FpML_TradeHeader
payerPartyReference ; empty element A pointer style reference to a party identifier defined elsewhere in the document. (FpML_Fee Usage) The party referenced is the payer of the fee. (FpML_InterestRateStream Usage) The party referenced is the payer of stream payments.	FpML_Fee FpML_InterestRateStream
paymentAmount ; entity type: FpML_Money The currency amount of the payment.	FpML_Fee

paymentCalculationPeriod ; entity type: FpML_PaymentCalculationPeriod The adjusted payment date and associated calculation period parameters required to calculate the actual or projected payment amount. A list of payment calculation period elements may be ordered in the document by ascending adjusted payment date. An FpML document containing an unordered list of payment calculation periods is still regarded as a conformant document.	FpML_Cashflows
paymentDate ; entity type: FpML_AdjustableDate The payment date. This date is subject to adjustment in accordance with any applicable business day convention. (FpML_Fee Usage) This element is optional to allow the fee component to be used to capture commission amounts that might not have a known payment date associated with them, e.g. commissions may be invoiced and billed periodically	FpML_Fee FpML_Fra
paymentDates ; entity type: FpML_PaymentDates The payment dates schedule.	FpML_InterestRateStream
paymentDatesAdjustments ; entity type: FpML_BusinessDayAdjustments The business day convention to apply to each payment date if it would otherwise fall on a day that is not a business day in the specified financial business centers.	FpML_PaymentDates
paymentDaysOffset ; entity type: FpML_Offset If early payment or delayed payment is required, specifies the number of days offset that the payment occurs relative to what would otherwise be the unadjusted payment date. The offset can be specified in terms of either calendar or business days. Even in the case of a calendar days offset, the resulting payment date, adjusted for the specified calendar days offset, will still be adjusted in accordance with the specified payment dates adjustments. This element should only be	FpML_PaymentDates

included if early or delayed payment is applicable, i.e. if the periodMultiplier element value is not equal to zero.	
paymentFrequency ; entity type: FpML_Interval The frequency at which regular payment dates occur. If the payment frequency is equal to the frequency defined in the calculation period dates component then one calculation period contributes to each payment amount. If the payment frequency is less frequent than the frequency defined in the calculation period dates component then more than one calculation period will contribute to each payment amount. A payment frequency more frequent than the calculation period frequency or one that is not a multiple of the calculation period frequency is invalid.	FpML_PaymentDates
paymentType ; built-in datatype: string A classification of the type of fee or additional payment, e.g. brokerage, upfront fee etc. FpML does not define domain values for this element.	FpML_Fee
payRelativeTo ; built-in datatype: string Specifies whether the payments occur relative to each adjusted calculation period start date, adjusted calculation period end date or each reset date. The reset date is applicable in the case of certain euro (former French Franc) floating rate indices. Calculation period start date means relative to the start of the first calculation period contributing to a given payment. Similarly, calculation period end date means the end of the last calculation period contributing to a given payment.	FpML_PaymentDates
period ; built-in datatype: string A time period, e.g. a day, week, month, year or term of the stream. If the periodMultiplier value is 0 (zero) then period must contain the value D (Day).	FpML_Interval
periodMultiplier ; built-in datatype: integer A time period multiplier, e.g. 1, 2 or 3 etc. A negative	FpML_Interval

value can be used when specifying an offset relative to another date, e.g. -2 days. If the period value is T (Term) then periodMultiplier must contain the value 1.	
precision ; built-in datatype: nonNegativeInteger Specifies the rounding precision in terms of a number of 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).	FpML_Rounding
principalExchange ; entity type: FpML_PrincipalExchange The initial, intermediate and final principal exchange amounts. Typically required on cross currency interest rate swaps where actual exchanges of principal occur. A list of principal exchange elements may be ordered in the document by ascending adjusted principal exchange date. An FpML document containing an unordered principal exchange list is still regarded as a conformant document.	FpML_Cashflows
principalExchangeAmount ; built-in datatype: decimal The principal exchange amount. This amount should be positive if the stream payer is paying the exchange amount and signed negative if they are receiving it.	FpML_PrincipalExchange
principalExchanges ; entity type: FpML_PrincipalExchanges The true/false flags indicating whether initial, intermediate or final exchanges of principal should occur.	FpML_InterestRateStream
product ; entity type: FpML_Product The product definition appropriate for the type of trade. Currently restricted to either a swap or forward rate agreement.	FpML_Trade

rateCutOffDaysOffset ; entity type: FpML_Offset Specifies the number of business days before the period end date when the rate cut-off date is assumed to apply. The financial business centers associated with determining the rate cut-off date are those specified in the reset dates adjustments. The rate cut-off number of days must be a negative integer (a value of zero would imply no rate cut off applies in which case the rateCutOffDaysOffset element should not be included). The relative rate for each reset date in the period from, and including, a rate cut-off date to, but excluding, the next applicable period end date (or, in the case of the last calculation period, the termination date) will (solely for purposes of calculating the floating amount payable on the next applicable payment date) be deemed to be the relevant rate in effect on that rate cut-off date. For example, if rate cut-off days for a daily averaging deal is -2 business days, then the refix rate applied on (period end date - 2 days) will also be applied as the reset on (period end date - 1 day), i.e. the actual number of reset dates remains the same but from the rate cut-off date until the period end date, the same refix rate is applied. Note that in the case of several calculation periods contributing to a single payment, the rate cut-off is assumed only to apply to the final calculation period contributing to that payment. The day type associated with the offset must imply a business days offset.	FpML_ResetDates
rateObservation ; entity type: FpML_RateObservation The details of a particular rate observation, including the fixing date and observed rate. A list of rate observation elements may be ordered in the document by ascending adjusted fixing date. An FpML document containing an unordered list of rate observations is still regarded as a conformant document.	FpML_FloatingRateDefinition
rateReference ; empty element A pointer style reference to a floating rate component defined as part of a stub calculation period amount component. It is only required when it is necessary to distinguish two rate observations for the same fixing date which could occur when linear interpolation of two different rates occurs for a stub calculation period.	FpML_RateObservation

rateTreatment ; built-in datatype: string The specification of any rate conversion which needs to be applied to the observed rate before being used in any calculations. The two common conversions are for securities quoted on a bank discount basis which will need to be converted to either a Money Market Yield or Bond Equivalent Yield. See the Annex to the 2000 ISDA Definitions, Section 7.3. Certain General Definitions Relating to Floating Rate Options, paragraphs (g) and (h) for definitions of these terms.	FpML_FloatingRate
receiverPartyReference ; empty element A pointer style reference to a party identifier defined elsewhere in the document. (FpML_Fee Usage) The party referenced is the receiver of the fee. (FpML_InterestRateStream Usage) The party referenced is the receiver of stream payments.	FpML_Fee FpML_InterestRateStream
resetDates ; entity type: FpML_ResetDates The reset dates schedule. The reset dates schedule only applies for a floating rate stream.	FpML_InterestRateStream
resetDatesAdjustments ; entity type: FpML_BusinessDayAdjustments The business day convention to apply to each reset date if it would otherwise fall on a day that is not a business day in the specified financial business centers.	FpML_ResetDates
resetDatesReference ; empty element A pointer style reference to the associated reset dates component defined elsewhere in the document.	FpML_PaymentDates
resetFrequency ; entity type: FpML_ResetFrequency The frequency at which reset dates occur. In the case of a weekly reset frequency, also specifies the day of the	FpML_ResetDates

week that the reset occurs. If the reset frequency is greater than the calculation period frequency then this implies that more than one reset date is established for each calculation period and some form of rate averaging is applicable.	
resetRelativeTo ; built-in datatype: string Specifies whether the reset dates are determined with respect to each adjusted calculation period start date or adjusted calculation period end date. If the reset frequency is specified as daily this element must not be included.	FpML_ResetDates
rollConvention ; built-in datatype: string Used in conjunction with a frequency and the regular period start date of a calculation period, determines each calculation period end date within the regular part of a calculation period schedule.	FpML_CalculationPeriodFrequency
roundingDirection ; built-in datatype: string Specifies the rounding direction.	FpML_Rounding
sellerPartyReference ; empty element A pointer style reference to a party identifier defined elsewhere in the document. The party referenced is the seller of the instrument, also known as the floating rate payer.	FpML_Fra
spread ; built-in datatype: decimal The ISDA Spread, if any, which applies for the calculation period. The spread is a per annum rate, expressed as a decimal. For purposes of determining a calculation period amount, if positive the spread will be added to the floating rate and if negative the spread will be subtracted from the floating rate. A positive 10 basis point (0.1%) spread would be represented as 0.001.	FpML_FloatingRateDefinition
spreadSchedule ; entity type:	FpML_FloatingRate

FpML_Schedule The ISDA Spread or a Spread schedule expressed as explicit spreads and dates. In the case of a schedule, the step dates may be subject to adjustment in accordance with any adjustments specified in calculationPeriodDatesAdjustments. The spread is a per annum rate, expressed as a decimal. For purposes of determining a calculation period amount, if positive the spread will be added to the floating rate and if negative the spread will be subtracted from the floating rate. A positive 10 basis point (0.1%) spread would be represented as 0.001.	
step ; entity type: FpML_Step The schedule of step date and value pairs. On each step date the associated step value becomes effective A list of steps may be ordered in the document by ascending step date. An FpML document containing an unordered list of steps is still regarded as a conformant document.	FpML_Schedule
stepDate ; built-in datatype: date The date on which the associated stepValue becomes effective. This day may be subject to adjustment in accordance with a business day convention.	FpML_Step
stepFrequency ; entity type: FpML_Interval The frequency at which the step changes occur. This frequency must be a multiple of the stream calculation period frequency.	FpML_NotionalStepRule
stepRelativeTo ; built-in datatype: string Specifies whether the notionalStepRate should be applied to the initial notional or the previous notional in order to calculate the notional step change amount.	FpML_NotionalStepRule
stepValue ; built-in datatype: decimal The rate or amount which becomes effective on the associated stepDate. A rate of 5% would be represented as 0.05.	FpML_Step

stubAmount ; entity type: FpML_Money An actual amount to apply for the initial or final stub period may have been agreed between the two parties. If an actual stub amount has been agreed then it would be included in this component.	FpML_Stub
stubCalculationPeriodAmount ; entity type: FpML_StubCalculationPeriodAmount The stub calculation period amount parameters. This element must only be included if there is an initial or final stub calculation period. Even then, it must only be included if either the stub references a different floating rate tenor to the regular calculation periods, or if the stub is calculated as a linear interpolation of two different floating rate tenors, or if a specific stub rate or stub amount has been negotiated.	FpML_InterestRateStream
stubRate ; built-in datatype: decimal An actual rate to apply for the initial or final stub period may have been agreed between the principal parties (in a similar way to how an initial rate may have been agreed for the first regular period). If an actual stub rate has been agreed then it would be included in this component. It will be a per annum rate, expressed as a decimal. A stub rate of 5% would be represented as 0.05.	FpML_Stub
swap ; entity type: FpML_Swap A swap product definition.	FpML_Product
swapStream ; entity type: FpML_InterestRateStream The swap streams.	FpML_Swap
terminationDate ; entity type: FpML_AdjustableDate The last day of the term of the trade. This day may be subject to adjustment in accordance with a business day convention.	FpML_CalculationPeriodDates

trade ; entity type: FpML_Trade The FpML trade definition.	FpML
tradeDate ; built-in datatype: date The trade date.	FpML_TradeHeader
tradeHeader ; entity type: FpML_TradeHeader The information on the trade which is not product specific, e.g. trade date.	FpML_Trade
tradeId ; built-in datatype: string A trade reference identifier allocated by a party. FpML does not define the domain values associated with this element. Note that the domain values for this element are not strictly an enumerated list.	FpML_PartyTradeIdentifier
treatedRate ; built-in datatype: decimal The observed rate after any required rate treatment is applied. A treated rate of 5% would be represented as 0.05.	FpML_RateObservation
unadjustedDate ; built-in datatype: date A date subject to adjustment.	FpML_AdjustableDate
weeklyRollConvention ; built-in datatype: string The day of the week on which a weekly reset date occurs. This element must be included if the reset frequency is defined as weekly and not otherwise.	FpML_ResetFrequency

7 CHARACTER ENCODING AND CHARACTER REPERTOIRE

7.1 Character Encoding

Producers of FpML documents intended for interchange with other parties must encode such documents using either UTF-8 or UTF-16. Consumers of FpML documents must be able to process documents encoded using UTF-8, as well as documents encoded using UTF-16. For more information, see http://www.w3.org/TR/REC-xml#charencoding.

7.2 Character Repertoire

FpML element content, as well as values of the FpML `id` and `href` attributes, may use any valid XML characters. For more information, see http://www.w3.org/TR/REC-xml#charsets.

8 DATATYPES AND CODING SCHEMES

8.1 Datatypes

FpML 1.0 uses a subset of the built-in datatypes (both primitive and derived datatypes) as defined in XML Schema Part 2: Datatypes, W3C Recommendation 02 May 2001. The built-in datatypes are described at:

http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/#built-in-datatypes

The built-in datatypes used in FpML 1.0 are the following:

- `boolean`
- `date`
- `decimal`
- `integer`
- `nonNegativeInteger`
- `positiveInteger`
- `string.`

The set of valid literals for each datatype are those defined in the XML Schema specification as being its lexical space. Additional constraints are imposed by FpML on the `date` built-in datatype as described below.

8.1.1 date

All elements of type `date` in FpML must contain date values with the format CCYY-MM-DD. A following time zone qualifier is not allowed and year values must be in the range 0001 to 9999. For example, 25 May 2000 would be represented in FpML as 2000-05-25.

8.2 Coding Schemes

8.2.1 Introduction

A number of data elements defined in the FpML 1.0 DTD are restricted to holding one of a limited set of possible values, e.g. `dayCountConvention`, `dayCountFraction`, `currency` etc. Such restricted sets of values are frequently referred to as domains. XML 1.0 has some limited support for the concept of domains through the use of enumerated attributes.

FpML has adopted the principle of not using attributes to hold business data. As a consequence, XML enumerations are not used and an alternative strategy has been defined by the Architecture Working Group referred to as 'Schemes'. Each Scheme is associated with a URI. Coding Schemes can be categorized as one of the following:

- An external coding Scheme, which has a well-known URI. In this case the URI is assigned by an external body, and may or may not have its own versioning, date syntax and semantics. The external body may be an open standards organization, or it may be a market participant

- An external coding Scheme, which does not have a well-known URI. In this case FpML assigns a URI as a proxy to refer to the concept of the external Scheme, but this URI will not be versioned or dated

- An FpML-defined coding Scheme. In this case the Scheme is fully under FpML control and the URI will change reflecting newer versions and revisions as the scheme evolves and changes.

In this section, the FpML-controlled Schemes and their associated URIs are defined, as well as URIs assigned by FpML to external coding schemes. The URI construction follows the FpML Architecture Version 1.0 recommendation.

Note that FpML does not define a coding Scheme or URI for the following Schemes:

- Link Identifier (linkIdScheme)
- Payment Type (paymentTypeScheme)
- Trade Identifier (tradeIdScheme).

These are currently assumed to be specific to individual organizations or FpML based implementations.

Although the initial set of Schemes are defined in this document we expect that new versions of Schemes will be released from time to time and published separately. Key benefits of using Schemes are that they allow:

- enumerations to be revised without requiring a re-issue of the FpML DTDs
- alternate Schemes to be used without requiring changes to the FpML DTDs.

8.2.2 Averaging Method Scheme (averagingMethodScheme)

Definition

The method of calculation to be used when averaging rates. Per ISDA 2000 Definitions, Section 6.2. Certain Definitions Relating to Floating Amounts.

URI

http://www.fpml.org/spec/2000/averaging-method-1-0

Coding Scheme

Code	Meaning
Unweighted	The arithmetic mean of the relevant rates for each reset date.
Weighted	The arithmetic mean of the relevant rates in effect for each day in a calculation period calculated by multiplying each relevant rate by the number of days such relevant rate is in effect, determining the sum of such products and dividing such sum by the number of days in the calculation period.

8.2.3 Business Center Scheme (businessCenterScheme)

Definition

A financial business center location.

URI

http://www.fpml.org/spec/2000/business-center-1-0

Code Construction

In general, the codes are based on the ISO country code and the English name of the location.

Additional location codes can be built according to the following rules. The first two characters represent the ISO country code, the next two characters represent a) if the location name is one word, the first two letters of the location b) if the location name consists of at least two words, the first letter of the first word followed by the first letter of the second word .

There are exceptions to this rule. For example, the TARGET (Trans-European Automated Real-time Gross settlement Express Transfer system) business center for Euro settlement has a code of EUTA.

This coding scheme is currently consistent with the S.W.I.F.T. Financial Centre scheme used in the MT340/MT360/MT361 message definitions, although FpML controls the Business Center Scheme and it should not be assumed that both schemes will remain synchronized.

Coding Scheme

Code	Meaning
ARBA	Buenos Aires
ATVI	Vienna
AUME	Melbourne
AUSY	Sydney
BEBR	Brussels
BRSP	São Paulo
CAMO	Montreal
CATO	Toronto
CHGE	Geneva
CHZU	Zürich
CLSA	Santiago
CNBE	Beijing
CZPR	Prague
DEFR	Frankfurt
DKCO	Copenhagen
EETA	Tallinn
ESMA	Madrid
EUTA	TARGET (euro 'Business Center')

FIHE	Helsinki
FRPA	Paris
GBLO	London
GRAT	Athens
HKHK	Hong Kong
HUBU	Budapest
IDJA	Jakarta
ILTA	Tel Aviv
ITMI	Milan
ITRO	Rome
JPTO	Tokyo
KRSE	Seoul
LBBE	Beirut
LULU	Luxembourg
MXMC	Mexico City
MYKL	Kuala Lumpur
NLAM	Amsterdam
NOOS	Oslo
NZAU	Auckland
NZWE	Wellington
PAPC	Panama City
PHMA	Manila
PLWA	Warsaw
RUMO	Moscow
SARI	Riyadh
SEST	Stockholm
SGSI	Singapore
SKBR	Bratislava
THBA	Bangkok
TRAN	Ankara
TWTA	Taipei
USCH	Chicago
USLA	Los Angeles
USNY	New York
ZAJO	Johannesburg

8.2.4 Business Day Convention Scheme (businessDayConventionScheme)

Definition

The convention for adjusting any relevant date if it would otherwise fall on a day that is not a valid business day. Note that FRN is included here as a type of business day convention although it does not strictly fall within ISDA's definition of a Business Day Convention and does not conform to the simple definition given above.

URI

http://www.fpml.org/spec/2000/business-day-convention-1-0

Coding Scheme

Code	Meaning
FOLLOWING	The non-business date will be adjusted to the first following day that is a business day.
FRN	Per 2000 ISDA Definitions, Section 4.11. FRN Convention; Eurodollar Convention, i.e. "FRN Convention" or "Eurodollar Convention" means, in respect of either Payment Dates or Period End Dates for a Swap Transaction and a party, that the Payment Dates or Period End Dates of that party will be each day during the term of the Swap Transaction that numerically corresponds to the preceding applicable Payment Date or Period End Date, as the case may be, of that party in the calendar month that is the specified number of months after the month in which the preceding applicable Payment Date or Period End Date occurred (or, in the case of the first applicable Payment Date or Period End Date, the day that numerically corresponds to the Effective Date in the calendar month that is the specified number of months after the month in which the Effective Date occurred), except that (a) if there is not any such numerically corresponding day in a calendar month in which a Payment Date or Period End Date, as the case may be, of that party should occur, then the Payment Date or Period End Date will be the last day that is a Business Day in that month, (b) if a Payment Date or Period End Date, as the case may be, of the party would otherwise fall on a day that is not a Business Day, then the Payment Date or Period End Date will be the first following day that is a Business Day unless that day falls in the next calendar month, in which case the Payment Date or Period End Date will be the first preceding day that is a Business Day, and (c) if the preceding applicable Payment Date or Period End Date, as the case may be, of that party occurred on the last day in a calendar month that was a Business Day, then all subsequent applicable Payment Dates or Period End Dates, as the case may be, of that party prior to the Termination Date will be the last day that is a Business Day in the month that is the specified number of months after the month in which the preceding applicable Payment Date or Period End Date occurred.
MODFOLLOWING	The non-business date will be adjusted to the first following day that is a business day unless that day falls in the next calendar month, in which case that date will be the first preceding day that is a business day.
PRECEDING	The non-business date will be adjusted to the first preceding day that is a business day

MODPRECEDING	The non-business date will be adjusted to the first preceding day that is a business day unless that day falls in the previous calendar month, in which case that date will be the first following day that is a business day.
NONE	The date will not be adjusted if it falls on a day that is not a business day.

8.2.5 Compounding Method Scheme (compoundingMethodScheme)

Definition

The compounding calculation method. Per 2000 ISDA Definitions, Section 6.3. Certain Definitions Relating to Compounding.

URI

http://www.fpml.org/spec/2000/compounding-method-1-0

Coding Scheme

Code	Meaning
Flat	Flat compounding.
None	No compounding is to be applied.
Straight	Straight compounding.

8.2.6 Currency Scheme (currencyScheme)

Definition

The code for representation of a currency.

URI

http://www.fpml.org/ext/iso4217

Coding Scheme

A valid currency code as defined by the ISO standard 4217 - Codes for representation of currencies and funds.

8.2.7 Date Relative To Scheme (dateRelativeToScheme)

Definition

The specification of the anchor date when calculating a derived date as a relative offset from this anchor date.

URI

http://www.fpml.org/spec/2001/date-relative-to-1-0

Coding Scheme

Code	Meaning
ResetDate	The derived date will be calculated as a relative offset from the reset date

8.2.8 Day Count Fraction Scheme (dayCountFractionScheme)

Definition

The specification for how the number of days between two dates is calculated for purposes of calculation of a fixed or floating payment amount and the basis for how many days are assumed to be in a year. Day Count Fraction is an ISDA term. The equivalent AFB (Association Française des Banques) term is Calculation Basis.

URI

http://www.fpml.org/spec/2000/day-count-fraction-1-0

Coding Scheme

Code	Meaning
1/1	Per Annex to the 2000 ISDA Definitions (June 2000 Version), Section 4.16. Day Count Fraction, paragraph (a), i.e. if "1/1" is specified, 1.
ACT/365.ISDA	Per Annex to the 2000 ISDA Definitions (June 2000 Version), Section 4.16. Day Count Fraction, paragraph (b), i.e. If "Actual/365", "Act/365", "A/365", "Actual/Actual" or "Act/Act" is specified, the actual number of days in the Calculation Period or Compounding Period in respect of which the payment is being made divided by 365 (or, if any portion of that Calculation Period or Compounding Period falls in a leap year, the sum of (i) the actual number of days in that portion of the Calculation Period or Compounding Period falling in a leap year divided by 366 and (ii) the actual number of days in that portion of the Calculation Period or Compounding Period falling in a non-leap year divided by 365).
ACT/ACT.ISMA	The Fixed/Floating Amount will be calculated in accordance with Rule 251 of the statutes, by-laws, rules and recommendations of the International Securities Market Association, as published in April 1999, as applied to straight and convertible bonds issued after December 31, 1998, as though the Fixed/Floating Amount were the interest coupon on such a bond.
ACT/ACT.AFB	The Fixed/Floating Amount will be calculated in accordance with the "BASE EXACT/EXACT" day count fraction, as defined in the "Definitions Communes à plusieurs Additifs Techniques" published by the Association Française des Banques in September 1994.
ACT/365.FIXED	Per Annex to the 2000 ISDA Definitions (June 2000 Version), Section 4.16. Day Count Fraction, paragraph (c), i.e. if "Actual/365 (Fixed)", "Act/365 (Fixed)", "A/365 (Fixed)" or "A/365F" is specified, the actual number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by 365.
ACT/360	Per Annex to the 2000 ISDA Definitions (June 2000 Version), Section 4.16. Day Count Fraction, paragraph (d), i.e. if "Actual/360", "Act/360" or "A/360" is specified, the actual number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by 360.

Code	Meaning
30/360	Per Annex to the 2000 ISDA Definitions (June 2000 Version), Section 4.16. Day Count Fraction, paragraph (e), i.e. if "30/360", "360/360" or "Bond Basis" is specified, the number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by 360 (the number of days to be calculated on the basis of a year of 360 days with 12 30-day months (unless (i) the last day of the Calculation Period or Compounding Period is the 31st day of a month but the first day of the Calculation Period or Compounding Period is a day other than the 30th or 31st day of a month, in which case the month that includes that last day shall not be considered to be shortened to a 30-day month, or (ii) the last day of the Calculation Period or Compounding Period is the last day of the month of February, in which case the month of February shall not be considered to be lengthened to a 30-day month)).
30E/360	Per Annex to the 2000 ISDA Definitions (June 2000 Version), Section 4.16. Day Count Fraction, paragraph (f), i.e. if "30E/360" or "Eurobond Basis" is specified, the number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by 360 (the number of days to be calculated on the basis of a year of 360 days with 12 30-day months, without regard to the date of the first day or last day of the Calculation Period or Compounding Period unless, in the case of the final Calculation Period or Compounding Period, the Termination Date is the last day of the month of February, in which case the month of February shall not be considered to be lengthened to a 30-day month).

8.2.9 Day Type Scheme (dayTypeScheme)

Definition

A day type classification used in counting the number of days between two dates.

URI

http://www.fpml.org/spec/2000/day-type-1-0

Coding Scheme

Code	Meaning
Business	When calculating the number of days between two dates the count includes only business days.
Calendar	When calculating the number of days between two dates the count includes all calendar days.

8.2.10 Discounting Type Scheme (discountingTypeScheme)

Definition

The method of calculating discounted payment amounts.

URI

http://www.fpml.org/spec/2000/discounting-type-1-0

Coding Scheme

Code	Meaning
Standard	Standard Discounting. Per 2000 ISDA Definitions, Section 8.4. Discounting, paragraph (a).
FRA	FRA Discounting. Per 2000 ISDA Definitions, Section 8.4. Discounting, paragraph (b).

8.2.11 Floating Rate Index Scheme (floatingRateIndexScheme)

Definition

The specification of an ISDA Rate Option for purposes of determining a relevant rate on a given reset date. Several URIs are defined to allow floating rate index code definitions to be associated with specific definitions and provisions published by ISDA.

URI

http://www.fpml.org/ext/isda-2000-definitions

Coding Scheme

Valid ISDA Rate Options as published by ISDA in the Annex to the 2000 ISDA Definitions, Section 7.1. Rate Options, and amended and supplemented through to the `tradeDate` of the trade. Amendments and supplements to the Annex will be deemed to have been made when published by ISDA.

URI

http://www.fpml.org/ext/isda-2000-definitions-june-2000-version-annex

Coding Scheme

Valid ISDA Rate Options as published by ISDA in the Annex to the 2000 ISDA Definitions (June 2000 Version), Section 7.1. Rate Options.

URI

http://www.fpml.org/ext/isda-euro-definitions

Coding Scheme

Valid ISDA Euro Rate Options as published by ISDA in the 1998 ISDA Euro Definitions, Section 3.1. Euro Rate Options.

URI

http://www.fpml.org/ext/isda-1998-supplement

Coding Scheme

Valid ISDA Rate Options as published by ISDA in the 1998 Supplement to the 1991 ISDA Definitions, Section 7.1. Rate Options.

URI

http://www.fpml.org/ext/isda-1991-definitions

Coding Scheme

Valid ISDA Rate Options as published by ISDA in the 1991 ISDA Definitions, Section 7.1. Rate Options.

8.2.12 Negative Interest Rate Treatment Scheme (negativeInterestRateTreatmentScheme)

Definition

The method of calculating payment obligations when a floating rate is negative (either due to a quoted negative floating rate or by operation of a spread that is subtracted from the floating rate).

URI

http://www.fpml.org/spec/2001/negative-interest-rate-treatment-scheme-1-0

Coding Scheme

Code	Meaning
NegativeInterestRateMethod	Negative Interest Rate Method. Per 2000 ISDA Definitions, Section 6.4. Negative Interest Rates, paragraphs (b) and (c).
ZeroInterestRateMethod	Zero Interest Rate Method. Per 2000 ISDA Definitions, Section 6.4. Negative Interest Rates, paragraphs (d) and (e).

8.2.13 Party Identifier Scheme (partyIdScheme)

Definition

The code for identification of parties involved in a trade. Valid bank identifier codes (BICs).

URI

http://www.fpml.org/ext/iso9362

Coding Scheme

Valid BIC codes as defined by the ISO standard 9362 - Bank identifier codes (BIC).

S.W.I.F.T. is the designated registration authority for the assignment of BIC codes. They maintain an online BIC directory at http://www.swift.com/.

8.2.14 Pay Relative To Scheme (payRelativeToScheme)

Definition

The specification of whether payments occur relative to the calculation period start or end date, or the reset date.

URI

http://www.fpml.org/spec/2000/pay-relative-to-1-0

Coding Scheme

Code	Meaning
CalculationPeriodStartDate	Payments will occur relative to the first day of each calculation period.
CalculationPeriodEndDate	Payments will occur relative to the last day of each calculation period.

ResetDate	Payments will occur relative to the reset date.

8.2.15 Period Scheme (periodScheme)

Definition

The specification of a time period.

URI

http://www.fpml.org/spec/2000/period-1-0

Coding Scheme

Code	Meaning
D	Day
W	Week
M	Month
Y	Year
T	Term. The period commencing on the effective date of the stream and ending on the termination date of the stream.

8.2.16 Rate Treatment Scheme (rateTreatmentScheme)

Definition

The specification of methods for converting rates from one basis to another.

URI

http://www.fpml.org/spec/2000/rate-treatment-1-0

Coding Scheme

Code	Meaning
BondEquivalentYield	Bond Equivalent Yield. Per Annex to the 2000 ISDA Definitions (June 2000 Version), Section 7.3. Certain General Definitions Relating to Floating Rate Options, paragraph (g).
MoneyMarketYield	Money Market Yield. Per Annex to the 2000 ISDA Definitions (June 2000 Version), Section 7.3. Certain General Definitions Relating to Floating Rate Options, paragraph (h).

8.2.17 Reset Relative To Scheme (resetRelativeToScheme)

Definition

The specification of whether resets occur relative to the first or last day of a calculation period.

URI

http://www.fpml.org/spec/2000/reset-relative-to-1-0

Coding Scheme

Code	Meaning
CalculationPeriodStartDate	Resets will occur relative to the first day of each calculation period.

CalculationPeriodEndDate	Resets will occur relative to the last day of each calculation period.

8.2.18 Roll Convention Scheme (rollConventionScheme)

Definition

The convention for determining the sequence of calculation period end dates. It is used in conjunction with a specified frequency and the regular period start date of a calculation period, e.g. semi-annual IMM roll dates.

URI

http://www.fpml.org/spec/2000/roll-convention-1-0

Coding Scheme

Code	Meaning
EOM	Rolls on month end dates irrespective of the length of the month and the previous roll day.
FRN	Rolls days are determined according to the FRN Convention or Eurodollar Convention. Per 2000 ISDA Definitions, Section 4.11. FRN Convention; Eurodollar Convention.
IMM	IMM Settlement Dates. The third Wednesday of the (delivery) month. Per 2000 ISDA Definitions, Section 4.17. IMM Settlement Dates.
IMMCAD	The Monday before the third Wednesday of the (delivery) month.
SFE	Sydney Futures Exchange 90-Day Bank Accepted Bill Futures Settlement Dates. The second Friday of the (delivery) month. Per Sydney Futures Exchange Contract Specification.
NONE	The roll convention is not required. For example, in the case of a daily calculation frequency.
TBILL	13-week and 26-week U.S. Treasury Bill Auction Dates. Each Monday except for U.S. (New York) holidays when it will occur on a Tuesday.
1	Rolls on the 1st day of the month.
2	Rolls on the 2nd day of the month.
3	Rolls on the 3rd day of the month.
4	Rolls on the 4th day of the month.
5	Rolls on the 5th day of the month.
6	Rolls on the 6thday of the month.
7	Rolls on the 7th day of the month.
8	Rolls on the 8th day of the month.
9	Rolls on the 9th day of the month.
10	Rolls on the 10th day of the month.
11	Rolls on the 11th day of the month.
12	Rolls on the 12th day of the month.
13	Rolls on the 13th day of the month.
14	Rolls on the 14th day of the month.
15	Rolls on the 15th day of the month.
16	Rolls on the 16th day of the month.
17	Rolls on the 17thday of the month.
18	Rolls on the 18th day of the month.
19	Rolls on the 19th day of the month.
20	Rolls on the 20th day of the month.
21	Rolls on the 21st day of the month.

Code	Meaning
22	Rolls on the 22nd day of the month.
23	Rolls on the 23rd day of the month.
24	Rolls on the 24th day of the month.
25	Rolls on the 25th day of the month.
26	Rolls on the 26th day of the month.
27	Rolls on the 27th day of the month.
28	Rolls on the 28th day of the month.
29	Rolls on the 29th day of the month.
30	Rolls on the 30th day of the month.
MON	Rolls weekly on a Monday.
TUE	Rolls weekly on a Tuesday.
WED	Rolls weekly on a Wednesday.
THU	Rolls weekly on a Thursday.
FRI	Rolls weekly on a Friday.
SAT	Rolls weekly on a Saturday.
SUN	Rolls weekly on a Sunday.

8.2.19 Rounding Direction Scheme (roundingDirectionScheme)

Definition

The method of rounding a fractional number.

URI

http://www.fpml.org/spec/2000/rounding-direction-1-0

Coding Scheme

Code	Meaning
Up	A fractional number will be rounded up to the specified number of decimal places (the precision). For example, 5.21 and 5.25 rounded up to 1 decimal place are 5.3 and 5.3 respectively.
Down	A fractional number will be rounded down to the specified number of decimal places (the precision). For example, 5.29 and 5.25 rounded down to 1 decimal place are 5.2 and 5.2 respectively.
Nearest	A fractional number will be rounded either up or down to the specified number of decimal places (the precision) depending on its value. For example, 5.24 would be rounded down to 5.2 and 5.25 would be rounded up to 5.3 if a precision of 1 decimal place were specified.

8.2.20 Step Relative To Scheme (stepRelativeToScheme)

Definition

The specification of whether a percentage rate change, used to calculate a change in notional outstanding, is expressed as a percentage of the initial notional amount or the previously outstanding notional amount.

URI

http://www.fpml.org/spec/2000/step-relative-to-1-0

Coding Scheme

Code	Meaning
Initial	Change in notional to be applied is calculated by multiplying the percentage rate by the initial notional amount.
Previous	Change in notional to be applied is calculated by multiplying the percentage rate by the previously outstanding notional amount.

8.2.21 Weekly Roll Convention Scheme (weeklyRollConventionScheme)

Definition

The specification of a weekly roll day.

URI

http://www.fpml.org/spec/2000/weekly-roll-convention-1-0

Coding Scheme

Code	Meaning
MON	Monday
TUE	Tuesday
WED	Wednesday
THU	Thursday
FRI	Friday
SAT	Saturday
SUN	Sunday

9 SAMPLE FPML

9.1 Introduction

This section contains seven example FpML swap trades and one FpML forward rate agreement trade. Each swap example illustrates how different product features are modeled in FpML.

The eight examples are the following:

1. Fixed/floating single currency interest rate swap
2. Fixed/floating single currency interest rate swap with initial stub period and notional amortization
3. Fixed/floating single currency interest rate swap with compounding, payment delay and final rate rounding
4. Fixed/floating single currency interest rate swap with arrears reset, step-up coupon and upfront fee
5. Fixed/floating single currency interest rate swap with long initial stub and short final stub
6. Fixed/floating cross currency interest rate swap
7. Fixed/floating overnight interest rate swap (OIS)
8. Forward rate agreement.

Examples 2, 3 and 6 include the optional cashflows representation as part of the FpML sample document. Note that cashflows are not applicable for the forward rate agreement product.

Additionally, 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.

9.2 Example 1 - Fixed/Floating Single Currency Interest Rate Swap

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: DEM 50,000,000
- Chase pays the floating rate every 6 months, based on 6-month DEM-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:

- This example is identical to the MT360 Example 1 message in the S.W.I.F.T. User Handbook (Page 361, Category 3 - Treasury Markets - Foreign Exchange, Money Markets & Derivatives - October 1998 Standards Release - August 1998 Edition)
- Optional cashflows are not included in this example
- The `floatingRateIndexScheme` refers to the 1991 ISDA Definitions.

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<!DOCTYPE FpML PUBLIC "-//FpML//DTD Financial product Markup Language 1-0//EN"  "" >

<FpML version = "1-0"
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      businessDayConventionSchemeDefault = "http://www.fpml.org/spec/2000/business-day-
      convention-1-0"
      currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
      dateRelativeToSchemeDefault = "http://www.fpml.org/spec/2001/date-relative-to-1-0"
      dayCountFractionSchemeDefault = "http://www.fpml.org/spec/2000/day-count-fraction-1-0"
      dayTypeSchemeDefault = "http://www.fpml.org/spec/2000/day-type-1-0"
      floatingRateIndexSchemeDefault = "http://www.fpml.org/ext/isda-1991-definitions"
      partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
      payRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/pay-relative-to-1-0"
      periodSchemeDefault = "http://www.fpml.org/spec/2000/period-1-0"
      resetRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/reset-relative-to-1-0"
      rollConventionSchemeDefault = "http://www.fpml.org/spec/2000/roll-convention-1-0">

  <trade>

    <tradeHeader>

      <partyTradeIdentifier>
        <partyReference href = "#CHASE" />
        <tradeId tradeIdScheme = "http://www.chase.com/swaps/trade-id">TW9235</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier>
        <partyReference href = "#BARCLAYS" />
        <tradeId tradeIdScheme = "http://www.barclays.com/swaps/trade-id">SW2000</tradeId>
      </partyTradeIdentifier>

      <tradeDate>1994-12-12</tradeDate>

    </tradeHeader>

    <product>

      <swap>

        <!-- Chase pays the floating rate every 6 months, based on 6M DEM-LIBOR-BBA, on an
        ACT/360 basis -->

        <swapStream>

          <payerPartyReference href = "#CHASE" />
          <receiverPartyReference href = "#BARCLAYS" />

          <calculationPeriodDates id = "floatingCalcPeriodDates">
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              <unadjustedDate>1994-12-14</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>1999-12-14</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCenters id = "primaryBusinessCenters">
                  <businessCenter>DEFR</businessCenter>
                </businessCenters>
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <calculationPeriodFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
              <rollConvention>14</rollConvention>
            </calculationPeriodFrequency>
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          <paymentDates>
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <resetDates id = "resetDates">
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
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            <fixingDates>
              <periodMultiplier>-2</periodMultiplier>
              <period>D</period>
              <dayType>Business</dayType>
              <businessDayConvention>NONE</businessDayConvention>
              <businessCenters>
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              </businessCenters>
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            </resetFrequency>
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              <businessCentersReference href = "#primaryBusinessCenters" />
            </resetDatesAdjustments>
          </resetDates>

          <calculationPeriodAmount>
            <calculation>
              <notionalSchedule>
                <notionalStepSchedule>
                  <initialValue>50000000.00</initialValue>
                  <currency>DEM</currency>
                </notionalStepSchedule>
              </notionalSchedule>
              <floatingRateCalculation>
                <floatingRateIndex>DEM-LIBOR-BBA</floatingRateIndex>
                <indexTenor>
                  <periodMultiplier>6</periodMultiplier>
                  <period>M</period>
                </indexTenor>
              </floatingRateCalculation>
```

```
          <dayCountFraction>ACT/360</dayCountFraction>
        </calculation>
      </calculationPeriodAmount>

    </swapStream>

    <!-- Barclays pays the 6% fixed rate every year on a 30E/360 basis -->

    <swapStream>

      <payerPartyReference href = "#BARCLAYS" />
      <receiverPartyReference href = "#CHASE" />

      <calculationPeriodDates id = "fixedCalcPeriodDates">
        <effectiveDate>
          <unadjustedDate>1994-12-14</unadjustedDate>
          <dateAdjustments>
            <businessDayConvention>NONE</businessDayConvention>
          </dateAdjustments>
        </effectiveDate>
        <terminationDate>
          <unadjustedDate>1999-12-14</unadjustedDate>
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            <businessCentersReference href = "#primaryBusinessCenters" />
          </dateAdjustments>
        </terminationDate>
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          <businessCentersReference href = "#primaryBusinessCenters" />
        </calculationPeriodDatesAdjustments>
        <calculationPeriodFrequency>
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          <period>Y</period>
          <rollConvention>14</rollConvention>
        </calculationPeriodFrequency>
      </calculationPeriodDates>

      <paymentDates>
        <calculationPeriodDatesReference href = "#fixedCalcPeriodDates" />
        <paymentFrequency>
          <periodMultiplier>1</periodMultiplier>
          <period>Y</period>
        </paymentFrequency>
        <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
        <paymentDatesAdjustments>
          <businessDayConvention>MODFOLLOWING</businessDayConvention>
          <businessCentersReference href="#primaryBusinessCenters" />
        </paymentDatesAdjustments>
      </paymentDates>

      <calculationPeriodAmount>
        <calculation>
          <notionalSchedule>
            <notionalStepSchedule>
              <initialValue>50000000.00</initialValue>
              <currency>DEM</currency>
            </notionalStepSchedule>
          </notionalSchedule>
          <fixedRateSchedule>
            <initialValue>0.06</initialValue>
          </fixedRateSchedule>
          <dayCountFraction>30E/360</dayCountFraction>
```

```
            </calculation>
          </calculationPeriodAmount>

        </swapStream>

      </swap>

    </product>

    <party id = "CHASE">
      <partyId>CHASUS33</partyId>
    </party>

    <party id = "BARCLAYS">
      <partyId>BARCGB2L</partyId>
    </party>

  </trade>

</FpML>
```

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

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 DEM-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 DEM 10,000,000 each year.

Note the following:

- This example is identical to the MT360 Example 2 message in the S.W.I.F.T. User Handbook (Page 364, Category 3 - Treasury Markets - Foreign Exchange, Money Markets & 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.

```
<?xml version ="1.0"?>
<!DOCTYPE FpML PUBLIC "-//FpML//DTD Financial product Markup Language 1-0//EN"  "" >

<FpML version = "1-0"
      businessCenterSchemeDefault = "http://www.fpml.org/spec/2000/business-center-1-0"
      businessDayConventionSchemeDefault = "http://www.fpml.org/spec/2000/business-day-
      convention-1-0"
      currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
      dateRelativeToSchemeDefault = "http://www.fpml.org/spec/2001/date-relative-to-1-0"
      dayCountFractionSchemeDefault = "http://www.fpml.org/spec/2000/day-count-fraction-1-0"
      dayTypeSchemeDefault = "http://www.fpml.org/spec/2000/day-type-1-0"
      floatingRateIndexSchemeDefault = "http://www.fpml.org/ext/isda-1991-definitions"
      partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
      payRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/pay-relative-to-1-0"
      periodSchemeDefault = "http://www.fpml.org/spec/2000/period-1-0"
      resetRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/reset-relative-to-1-0"
      rollConventionSchemeDefault = "http://www.fpml.org/spec/2000/roll-convention-1-0">

  <trade>

    <tradeHeader>

      <partyTradeIdentifier>
        <partyReference href = "#CHASE" />
        <tradeId tradeIdScheme = "http://www.chase.com/swaps/trade-id">TW9235</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier>
        <partyReference href = "#BARCLAYS" />
        <tradeId tradeIdScheme = "http://www.barclays.com/swaps/trade-id">SW2000</tradeId>
      </partyTradeIdentifier>

      <tradeDate>1994-12-12</tradeDate>

    </tradeHeader>

    <product>

      <swap>

        <!-- Chase pays the floating rate every 6 months, based on 6M DEM-LIBOR-BBA, on ACT/360
        basis -->

        <swapStream>

          <payerPartyReference href = "#CHASE" />
          <receiverPartyReference href = "#BARCLAYS" />

          <calculationPeriodDates id = "floatingCalcPeriodDates">
            <effectiveDate>
              <unadjustedDate>1995-01-16</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>1999-12-14</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCenters id = "primaryBusinessCenters">
                  <businessCenter>DEFR</businessCenter>
                </businessCenters>
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <firstRegularPeriodStartDate>1995-06-14</firstRegularPeriodStartDate>
            <calculationPeriodFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
              <rollConvention>14</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates>
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <resetDates id = "resetDates">
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <resetRelativeTo>CalculationPeriodStartDate</resetRelativeTo>
            <fixingDates>
              <periodMultiplier>-2</periodMultiplier>
              <period>D</period>
              <dayType>Business</dayType>
              <businessDayConvention>NONE</businessDayConvention>
              <businessCenters>
                <businessCenter>GBLO</businessCenter>
              </businessCenters>
              <dateRelativeTo href = "#resetDates">ResetDate</dateRelativeTo>
            </fixingDates>
            <resetFrequency>
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              <period>M</period>
            </resetFrequency>
            <resetDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </resetDatesAdjustments>
          </resetDates>

          <calculationPeriodAmount>
            <calculation>
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                  <step>
                    <stepDate>1995-12-14</stepDate>
                    <stepValue>40000000.00</stepValue>
                  </step>
                  <step>
                    <stepDate>1996-12-14</stepDate>
                    <stepValue>30000000.00</stepValue>
                  </step>
                  <step>
```

```
          <stepDate>1997-12-14</stepDate>
          <stepValue>20000000.00</stepValue>
        </step>
        <step>
          <stepDate>1998-12-14</stepDate>
          <stepValue>10000000.00</stepValue>
        </step>
        <currency>DEM</currency>
      </notionalStepSchedule>
    </notionalSchedule>
    <floatingRateCalculation>
      <floatingRateIndex>DEM-LIBOR-BBA</floatingRateIndex>
      <indexTenor>
        <periodMultiplier>6</periodMultiplier>
        <period>M</period>
      </indexTenor>
    </floatingRateCalculation>
    <dayCountFraction>ACT/360</dayCountFraction>
  </calculation>
</calculationPeriodAmount>

<stubCalculationPeriodAmount>
  <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
  <initialStub>
    <floatingRate>
      <floatingRateIndex>DEM-LIBOR-BBA</floatingRateIndex>
      <indexTenor>
        <periodMultiplier>4</periodMultiplier>
        <period>M</period>
      </indexTenor>
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    <floatingRate>
      <floatingRateIndex>DEM-LIBOR-BBA</floatingRateIndex>
      <indexTenor>
        <periodMultiplier>5</periodMultiplier>
        <period>M</period>
      </indexTenor>
    </floatingRate>
  </initialStub>
</stubCalculationPeriodAmount>

<cashflows>
  <cashflowsMatchParameters>true</cashflowsMatchParameters>
  <paymentCalculationPeriod>
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    <calculationPeriod>
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      <adjustedEndDate>1995-06-14</adjustedEndDate>
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          <observationWeight>1</observationWeight>
        </rateObservation>
      </floatingRateDefinition>
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  <paymentCalculationPeriod>
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    <calculationPeriod>
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        <rateObservation>
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        </rateObservation>
      </floatingRateDefinition>
    </calculationPeriod>
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      <floatingRateDefinition>
        <rateObservation>
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          <observationWeight>1</observationWeight>
        </rateObservation>
      </floatingRateDefinition>
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  <paymentCalculationPeriod>
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      <floatingRateDefinition>
        <rateObservation>
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        </rateObservation>
      </floatingRateDefinition>
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      <floatingRateDefinition>
        <rateObservation>
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          <observationWeight>1</observationWeight>
        </rateObservation>
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  <paymentCalculationPeriod>
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        </rateObservation>
      </floatingRateDefinition>
    </calculationPeriod>
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```
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        <adjustedEndDate>1998-06-15</adjustedEndDate>
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          <rateObservation>
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            <observationWeight>1</observationWeight>
          </rateObservation>
        </floatingRateDefinition>
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    <paymentCalculationPeriod>
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        <adjustedEndDate>1998-12-14</adjustedEndDate>
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            <observationWeight>1</observationWeight>
          </rateObservation>
        </floatingRateDefinition>
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        <adjustedEndDate>1999-06-14</adjustedEndDate>
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          <rateObservation>
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            <observationWeight>1</observationWeight>
          </rateObservation>
        </floatingRateDefinition>
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    <paymentCalculationPeriod>
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      <calculationPeriod>
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            <observationWeight>1</observationWeight>
          </rateObservation>
        </floatingRateDefinition>
      </calculationPeriod>
    </paymentCalculationPeriod>
  </cashflows>

</swapStream>

<!-- Barclays pays the 6% fixed rate every year on a 30E/360 basis -->
```

```
        <swapStream>

          <payerPartyReference href = "#BARCLAYS" />
          <receiverPartyReference href = "#CHASE" />

          <calculationPeriodDates id = "fixedCalcPeriodDates">
            <effectiveDate>
              <unadjustedDate>1995-01-16</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>1999-12-14</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCentersReference href = "#primaryBusinessCenters" />
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <firstRegularPeriodStartDate>1995-12-14</firstRegularPeriodStartDate>
            <calculationPeriodFrequency>
              <periodMultiplier>1</periodMultiplier>
              <period>Y</period>
              <rollConvention>14</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates>
            <calculationPeriodDatesReference href = "#fixedCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>1</periodMultiplier>
              <period>Y</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href="#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <calculationPeriodAmount>
            <calculation>
              <notionalSchedule>
                <notionalStepSchedule>
                  <initialValue>50000000.00</initialValue>
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                    <stepValue>40000000.00</stepValue>
                  </step>
                  <step>
                    <stepDate>1996-12-14</stepDate>
                    <stepValue>30000000.00</stepValue>
                  </step>
                  <step>
                    <stepDate>1997-12-14</stepDate>
                    <stepValue>20000000.00</stepValue>
                  </step>
                  <step>
                    <stepDate>1998-12-14</stepDate>
            <stepValue>10000000.00</stepValue>
          </step>
          <currency>DEM</currency>
        </notionalStepSchedule>
      </notionalSchedule>
      <fixedRateSchedule>
        <initialValue>0.06</initialValue>
      </fixedRateSchedule>
      <dayCountFraction>30E/360</dayCountFraction>
    </calculation>
  </calculationPeriodAmount>

  <cashflows>
    <cashflowsMatchParameters>true</cashflowsMatchParameters>
    <paymentCalculationPeriod>
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      <calculationPeriod>
        <adjustedStartDate>1995-01-16</adjustedStartDate>
        <adjustedEndDate>1995-12-14</adjustedEndDate>
        <notionalAmount>50000000.00</notionalAmount>
        <fixedRate>0.06</fixedRate>
      </calculationPeriod>
    </paymentCalculationPeriod>
    <paymentCalculationPeriod>
      <adjustedPaymentDate>1996-12-16</adjustedPaymentDate>
      <calculationPeriod>
        <adjustedStartDate>1995-12-14</adjustedStartDate>
        <adjustedEndDate>1996-12-16</adjustedEndDate>
        <notionalAmount>40000000.00</notionalAmount>
        <fixedRate>0.06</fixedRate>
      </calculationPeriod>
    </paymentCalculationPeriod>
    <paymentCalculationPeriod>
      <adjustedPaymentDate>1997-12-15</adjustedPaymentDate>
      <calculationPeriod>
        <adjustedStartDate>1996-12-16</adjustedStartDate>
        <adjustedEndDate>1997-12-15</adjustedEndDate>
        <notionalAmount>30000000.00</notionalAmount>
        <fixedRate>0.06</fixedRate>
      </calculationPeriod>
    </paymentCalculationPeriod>
    <paymentCalculationPeriod>
      <adjustedPaymentDate>1998-12-14</adjustedPaymentDate>
      <calculationPeriod>
        <adjustedStartDate>1997-12-15</adjustedStartDate>
        <adjustedEndDate>1998-12-14</adjustedEndDate>
        <notionalAmount>20000000.00</notionalAmount>
        <fixedRate>0.06</fixedRate>
      </calculationPeriod>
    </paymentCalculationPeriod>
    <paymentCalculationPeriod>
      <adjustedPaymentDate>1999-12-14</adjustedPaymentDate>
      <calculationPeriod>
        <adjustedStartDate>1998-12-14</adjustedStartDate>
        <adjustedEndDate>1999-12-14</adjustedEndDate>
        <notionalAmount>10000000.00</notionalAmount>
        <fixedRate>0.06</fixedRate>
      </calculationPeriod>
    </paymentCalculationPeriod>
  </cashflows>

</swapStream>
```

```
      </swap>

    </product>

    <party id = "CHASE">
      <partyId>CHASUS33</partyId>
    </party>

    <party id = "BARCLAYS">
      <partyId>BARCGB2L</partyId>
    </party>

  </trade>

</FpML>
```

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

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.

```
<?xml version ="1.0"?>
<!DOCTYPE FpML PUBLIC "-//FpML//DTD Financial product Markup Language 1-0//EN"  "" >

<FpML version = "1-0"
      businessCenterSchemeDefault = "http://www.fpml.org/spec/2000/business-center-1-0"
      businessDayConventionSchemeDefault = "http://www.fpml.org/spec/2000/business-day-
      convention-1-0"
      compoundingMethodSchemeDefault = "http://www.fpml.org/spec/2000/compounding-method-1-0"
      currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
      dateRelativeToSchemeDefault = "http://www.fpml.org/spec/2001/date-relative-to-1-0"
      dayCountFractionSchemeDefault = "http://www.fpml.org/spec/2000/day-count-fraction-1-0"
      dayTypeSchemeDefault = "http://www.fpml.org/spec/2000/day-type-1-0"
      floatingRateIndexSchemeDefault = "http://www.fpml.org/ext/isda-1998-supplement"
      partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
      payRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/pay-relative-to-1-0"
      periodSchemeDefault = "http://www.fpml.org/spec/2000/period-1-0"
      resetRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/reset-relative-to-1-0"
      rollConventionSchemeDefault = "http://www.fpml.org/spec/2000/roll-convention-1-0"
      roundingDirectionSchemeDefault = "http://www.fpml.org/spec/2000/rounding-direction-1-0">

  <trade>

    <tradeHeader>

      <partyTradeIdentifier>
        <partyReference href = "#MGTLONDON" />
        <tradeId tradeIdScheme = "http://www.jpmorgan.com/swaps/trade-id">56323</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier>
        <partyReference href = "#MSDW" />
        <tradeId tradeIdScheme = "http://www.msdw/swaps/trade-id">56990</tradeId>
      </partyTradeIdentifier>

      <tradeDate>2000-04-25</tradeDate>

    </tradeHeader>

    <product>

      <swap>

      <!-- Morgan Stanley Dean Witter pays the floating rate every 6 months, based on
      3M 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 nearest 4 decimal places. -->

        <swapStream>

          <payerPartyReference href = "#MSDW" />
          <receiverPartyReference href = "#MGTLONDON" />

          <calculationPeriodDates id = "floatingCalcPeriodDates">
            <effectiveDate>
              <unadjustedDate>2000-04-27</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>2002-04-27</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCenters id="primaryBusinessCenters">
                  <businessCenter>GBLO</businessCenter>
                  <businessCenter>USNY</businessCenter>
                </businessCenters>
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <calculationPeriodFrequency>
              <periodMultiplier>3</periodMultiplier>
              <period>M</period>
              <rollConvention>27</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates>
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDaysOffset>
              <periodMultiplier>5</periodMultiplier>
              <period>D</period>
              <dayType>Business</dayType>
            </paymentDaysOffset>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <resetDates id = "resetDates">
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <resetRelativeTo>CalculationPeriodStartDate</resetRelativeTo>
            <fixingDates>
              <periodMultiplier>-2</periodMultiplier>
              <period>D</period>
              <dayType>Business</dayType>
              <businessDayConvention>NONE</businessDayConvention>
              <businessCenters>
                <businessCenter>GBLO</businessCenter>
              </businessCenters>
              <dateRelativeTo href = "#resetDates">ResetDate</dateRelativeTo>
            </fixingDates>
            <resetFrequency>
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              <period>M</period>
            </resetFrequency>
            <resetDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </resetDatesAdjustments>
          </resetDates>

          <calculationPeriodAmount>
            <calculation>
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                <notionalStepSchedule>
                  <initialValue>100000000.00</initialValue>
                  <currency>USD</currency>
                </notionalStepSchedule>
              </notionalSchedule>
              <floatingRateCalculation>
                <floatingRateIndex>USD-LIBOR-BBA</floatingRateIndex>
                <indexTenor>
                  <periodMultiplier>3</periodMultiplier>
                  <period>M</period>
                </indexTenor>
                <finalRateRounding>
                  <roundingDirection>Nearest</roundingDirection>
                  <precision>7</precision>
                </finalRateRounding>
              </floatingRateCalculation>
              <dayCountFraction>ACT/360</dayCountFraction>
              <compoundingMethod>Flat</compoundingMethod>
            </calculation>
          </calculationPeriodAmount>

          <cashflows>
            <cashflowsMatchParameters>true</cashflowsMatchParameters>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>2000-11-03</adjustedPaymentDate>
                <calculationPeriod>
                  <adjustedStartDate>2000-04-27</adjustedStartDate>
                  <adjustedEndDate>2000-07-27</adjustedEndDate>
                  <notionalAmount>100000000.00</notionalAmount>
                    <floatingRateDefinition>
                      <rateObservation>
                        <adjustedFixingDate>2000-04-25</adjustedFixingDate>
                        <observationWeight>1</observationWeight>
                      </rateObservation>
                    </floatingRateDefinition>
                </calculationPeriod>
                <calculationPeriod>
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                  <adjustedEndDate>2000-10-27</adjustedEndDate>
                  <notionalAmount>100000000.00</notionalAmount>
                    <floatingRateDefinition>
                      <rateObservation>
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                        <observationWeight>1</observationWeight>
                      </rateObservation>
                    </floatingRateDefinition>
                </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>2001-05-04</adjustedPaymentDate>
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                  <adjustedEndDate>2001-01-29</adjustedEndDate>
                  <notionalAmount>100000000.00</notionalAmount>
                  <floatingRateDefinition>
                      <rateObservation>
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                        <observationWeight>1</observationWeight>
                      </rateObservation>
                    </floatingRateDefinition>
                </calculationPeriod>
                <calculationPeriod>
                  <adjustedStartDate>2001-01-29</adjustedStartDate>
                  <adjustedEndDate>2001-04-27</adjustedEndDate>
                  <notionalAmount>100000000.00</notionalAmount>
```

```
            <floatingRateDefinition>
              <rateObservation>
                <adjustedFixingDate>2001-01-25</adjustedFixingDate>
                <observationWeight>1</observationWeight>
              </rateObservation>
            </floatingRateDefinition>
        </calculationPeriod>
    </paymentCalculationPeriod>
    <paymentCalculationPeriod>
    <adjustedPaymentDate>2001-11-05</adjustedPaymentDate>
      <calculationPeriod>
          <adjustedStartDate>2001-04-27</adjustedStartDate>
          <adjustedEndDate>2001-07-27</adjustedEndDate>
          <notionalAmount>100000000.00</notionalAmount>
            <floatingRateDefinition>
              <rateObservation>
                <adjustedFixingDate>2001-04-25</adjustedFixingDate>
                <observationWeight>1</observationWeight>
              </rateObservation>
            </floatingRateDefinition>
        </calculationPeriod>
        <calculationPeriod>
          <adjustedStartDate>2001-07-27</adjustedStartDate>
          <adjustedEndDate>2001-10-29</adjustedEndDate>
          <notionalAmount>100000000.00</notionalAmount>
            <floatingRateDefinition>
              <rateObservation>
                <adjustedFixingDate>2001-07-25</adjustedFixingDate>
                <observationWeight>1</observationWeight>
              </rateObservation>
            </floatingRateDefinition>
        </calculationPeriod>
    </paymentCalculationPeriod>
    <paymentCalculationPeriod>
      <adjustedPaymentDate>2002-05-06</adjustedPaymentDate>
        <calculationPeriod>
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          <adjustedEndDate>2002-01-29</adjustedEndDate>
          <notionalAmount>100000000.00</notionalAmount>
            <floatingRateDefinition>
              <rateObservation>
                <adjustedFixingDate>2001-10-25</adjustedFixingDate>
                <observationWeight>1</observationWeight>
              </rateObservation>
            </floatingRateDefinition>
        </calculationPeriod>
        <calculationPeriod>
          <adjustedStartDate>2002-01-29</adjustedStartDate>
          <adjustedEndDate>2002-04-29</adjustedEndDate>
          <notionalAmount>100000000.00</notionalAmount>
            <floatingRateDefinition>
              <rateObservation>
                <adjustedFixingDate>2002-01-25</adjustedFixingDate>
                <observationWeight>1</observationWeight>
              </rateObservation>
            </floatingRateDefinition>
        </calculationPeriod>
    </paymentCalculationPeriod>
  </cashflows>

</swapStream>

<!-- JPMorgan pays the 5.85% fixed rate semi-annually on a 30/360 basis -->
```

```
        <swapStream>
          <payerPartyReference href = "#MGTLONDON" />
          <receiverPartyReference href = "#MSDW" />

          <calculationPeriodDates id = "fixedCalcPeriodDates">
            <effectiveDate>
              <unadjustedDate>2000-04-27</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>2002-04-27</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCentersReference href = "#primaryBusinessCenters" />
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <calculationPeriodFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
              <rollConvention>27</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates>
            <calculationPeriodDatesReference href = "#fixedCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDaysOffset>
              <periodMultiplier>5</periodMultiplier>
              <period>D</period>
              <dayType>Business</dayType>
            </paymentDaysOffset>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href="#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <calculationPeriodAmount>
            <calculation>
              <notionalSchedule>
                <notionalStepSchedule>
                  <initialValue>100000000.00</initialValue>
                  <currency>USD</currency>
                </notionalStepSchedule>
              </notionalSchedule>
              <fixedRateSchedule>
                <initialValue>0.0585</initialValue>
              </fixedRateSchedule>
              <dayCountFraction>30/360</dayCountFraction>
            </calculation>
          </calculationPeriodAmount>
          <cashflows>
            <cashflowsMatchParameters>true</cashflowsMatchParameters>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>2000-11-03</adjustedPaymentDate>
              <calculationPeriod>
                <adjustedStartDate>2000-04-27</adjustedStartDate>
                <adjustedEndDate>2000-10-27</adjustedEndDate>
                <notionalAmount>100000000.00</notionalAmount>
                <fixedRate>0.0585</fixedRate>
              </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>2001-05-04</adjustedPaymentDate>
              <calculationPeriod>
                <adjustedStartDate>2000-10-27</adjustedStartDate>
                <adjustedEndDate>2001-04-27</adjustedEndDate>
                <notionalAmount>100000000.00</notionalAmount>
                <fixedRate>0.0585</fixedRate>
              </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>2001-11-05</adjustedPaymentDate>
              <calculationPeriod>
                <adjustedStartDate>2001-04-27</adjustedStartDate>
                <adjustedEndDate>2001-10-29</adjustedEndDate>
                <notionalAmount>100000000.00</notionalAmount>
                <fixedRate>0.0585</fixedRate>
              </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>2002-05-06</adjustedPaymentDate>
              <calculationPeriod>
                <adjustedStartDate>2001-10-29</adjustedStartDate>
                <adjustedEndDate>2002-04-29</adjustedEndDate>
                <notionalAmount>100000000.00</notionalAmount>
                <fixedRate>0.0585</fixedRate>
              </calculationPeriod>
            </paymentCalculationPeriod>
          </cashflows>

        </swapStream>

      </swap>

    </product>

    <party id = "MGTLONDON">
      <partyId>MGTCGB2L</partyId>
    </party>

    <party id = "MSDW">
      <partyId>MSLNGB2XSWP</partyId>
    </party>

  </trade>

</FpML>
```

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

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.

```
<?xml version ="1.0"?>
<!DOCTYPE FpML PUBLIC "-//FpML//DTD Financial product Markup Language 1-0//EN"  "" >

<FpML version = "1-0"
      businessCenterSchemeDefault = "http://www.fpml.org/spec/2000/business-center-1-0"
      businessDayConventionSchemeDefault = "http://www.fpml.org/spec/2000/business-day-
      convention-1-0"
      currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
      dateRelativeToSchemeDefault = "http://www.fpml.org/spec/2001/date-relative-to-1-0"
      dayCountFractionSchemeDefault = "http://www.fpml.org/spec/2000/day-count-fraction-1-0"
      dayTypeSchemeDefault = "http://www.fpml.org/spec/2000/day-type-1-0"
      floatingRateIndexSchemeDefault = "http://www.fpml.org/ext/isda-1998-supplement"
      partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
      payRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/pay-relative-to-1-0"
      periodSchemeDefault = "http://www.fpml.org/spec/2000/period-1-0"
      resetRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/reset-relative-to-1-0"
      rollConventionSchemeDefault = "http://www.fpml.org/spec/2000/roll-convention-1-0">

  <trade>

    <tradeHeader>

      <partyTradeIdentifier>
        <partyReference href = "#MGTLONDON" />
        <tradeId tradeIdScheme = "http://www.jpmorgan.com/swaps/trade-id">56323</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier>
        <partyReference href = "#MSDW" />
        <tradeId tradeIdScheme = "http://www.msdw/swaps/trade-id">56990</tradeId>
      </partyTradeIdentifier>

      <tradeDate>2000-04-25</tradeDate>

    </tradeHeader>

    <product>

      <swap>

      <!-- Morgan Stanley Dean Witter pays the floating rate quarterly, based on
      3M USD-LIBOR-BBA reset in arrears, on an ACT/360 basis. -->

      <swapStream>

          <payerPartyReference href = "#MSDW" />
          <receiverPartyReference href = "#MGTLONDON" />

          <calculationPeriodDates id = "floatingCalcPeriodDates">
            <effectiveDate>
              <unadjustedDate>2000-04-27</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>2002-04-27</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCenters id="primaryBusinessCenters">
                  <businessCenter>GBLO</businessCenter>
                  <businessCenter>USNY</businessCenter>
                </businessCenters>
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <calculationPeriodFrequency>
              <periodMultiplier>3</periodMultiplier>
              <period>M</period>
              <rollConvention>27</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates>
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>3</periodMultiplier>
              <period>M</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <resetDates id = "resetDates">
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <resetRelativeTo>CalculationPeriodEndDate</resetRelativeTo>
            <fixingDates>
              <periodMultiplier>-2</periodMultiplier>
              <period>D</period>
              <dayType>Business</dayType>
              <businessDayConvention>NONE</businessDayConvention>
              <businessCenters>
                <businessCenter>GBLO</businessCenter>
              </businessCenters>
              <dateRelativeTo href = "#resetDates">ResetDate</dateRelativeTo>
            </fixingDates>
            <resetFrequency>
              <periodMultiplier>3</periodMultiplier>
              <period>M</period>
            </resetFrequency>
            <resetDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </resetDatesAdjustments>
          </resetDates>

          <calculationPeriodAmount>
            <calculation>
              <notionalSchedule>
                <notionalStepSchedule>
                  <initialValue>100000000.00</initialValue>
                  <currency>USD</currency>
                </notionalStepSchedule>
              </notionalSchedule>
              <floatingRateCalculation>
                <floatingRateIndex>USD-LIBOR-BBA</floatingRateIndex>
                <indexTenor>
                  <periodMultiplier>3</periodMultiplier>
                  <period>M</period>
                </indexTenor>
                </floatingRateCalculation>
                <dayCountFraction>ACT/360</dayCountFraction>
              </calculation>
            </calculationPeriodAmount>

          </swapStream>

          <!-- 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 -->

          <swapStream>

            <payerPartyReference href = "#MGTLONDON" />
            <receiverPartyReference href = "#MSDW" />

            <calculationPeriodDates id = "fixedCalcPeriodDates">
              <effectiveDate>
                <unadjustedDate>2000-04-27</unadjustedDate>
                <dateAdjustments>
                  <businessDayConvention>NONE</businessDayConvention>
                </dateAdjustments>
              </effectiveDate>
              <terminationDate>
                <unadjustedDate>2002-04-27</unadjustedDate>
                <dateAdjustments>
                  <businessDayConvention>MODFOLLOWING</businessDayConvention>
                  <businessCentersReference href = "#primaryBusinessCenters" />
                </dateAdjustments>
              </terminationDate>
              <calculationPeriodDatesAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </calculationPeriodDatesAdjustments>
              <calculationPeriodFrequency>
                <periodMultiplier>6</periodMultiplier>
                <period>M</period>
                <rollConvention>27</rollConvention>
              </calculationPeriodFrequency>
            </calculationPeriodDates>

            <paymentDates>
              <calculationPeriodDatesReference href = "#fixedCalcPeriodDates" />
              <paymentFrequency>
                <periodMultiplier>6</periodMultiplier>
                <period>M</period>
              </paymentFrequency>
              <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
              <paymentDatesAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCentersReference href="#primaryBusinessCenters" />
              </paymentDatesAdjustments>
            </paymentDates>

            <calculationPeriodAmount>
              <calculation>
                <notionalSchedule>
                  <notionalStepSchedule>
                    <initialValue>100000000.00</initialValue>
                    <currency>USD</currency>
                  </notionalStepSchedule>
                </notionalSchedule>
                <fixedRateSchedule>
                  <initialValue>0.06</initialValue>
                  <step>
```

```
                  <stepDate>2001-04-27</stepDate>
                  <stepValue>0.065</stepValue>
                </step>
              </fixedRateSchedule>
              <dayCountFraction>30/360</dayCountFraction>
            </calculation>
          </calculationPeriodAmount>

        </swapStream>

        <additionalPayment>
          <payerPartyReference href = "#MSDW" />
          <receiverPartyReference href = "#MGTLONDON" />
          <paymentAmount>
            <currency>USD</currency>
            <amount>15000.00</amount>
          </paymentAmount>
          <paymentDate>
            <unadjustedDate>2000-04-27</unadjustedDate>
            <dateAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters"/>
            </dateAdjustments>
          </paymentDate>
        </additionalPayment>

      </swap>

    </product>

    <party id = "MGTLONDON">
      <partyId>MGTCGB2L</partyId>
    </party>

    <party id = "MSDW">
      <partyId>MSLNGB2XSWP</partyId>
    </party>

  </trade>

</FpML>
```

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

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.

```
<?xml version ="1.0"?>
<!DOCTYPE FpML PUBLIC "-//FpML//DTD Financial product Markup Language 1-0//EN"  "" >

<FpML version = "1-0"
      businessCenterSchemeDefault = "http://www.fpml.org/spec/2000/business-center-1-0"
      businessDayConventionSchemeDefault = "http://www.fpml.org/spec/2000/business-day-
      convention-1-0"
      currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
      dateRelativeToSchemeDefault = "http://www.fpml.org/spec/2001/date-relative-to-1-0"
      dayCountFractionSchemeDefault = "http://www.fpml.org/spec/2000/day-count-fraction-1-0"
      dayTypeSchemeDefault = "http://www.fpml.org/spec/2000/day-type-1-0"
      floatingRateIndexSchemeDefault = "http://www.fpml.org/ext/isda-euro-definitions"
      partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
      payRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/pay-relative-to-1-0"
      periodSchemeDefault = "http://www.fpml.org/spec/2000/period-1-0"
      resetRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/reset-relative-to-1-0"
      rollConventionSchemeDefault = "http://www.fpml.org/spec/2000/roll-convention-1-0">

  <trade type = "Trade">

    <tradeHeader type = "TradeHeader">

      <partyTradeIdentifier type = "PartyTradeIdentifier">
        <partyReference href = "#CHASE" />
        <tradeId type = "string"  tradeIdScheme = "http://www.chase.com/swaps/
          trade-id">921934</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier type = "PartyTradeIdentifier">
        <partyReference href = "#UBSW" />
        <tradeId type = "string"  tradeIdScheme = "http://www.ubsw.com/swaps/
          trade-id">204334</tradeId>
      </partyTradeIdentifier>

      <tradeDate type = "date">2000-04-03</tradeDate>

    </tradeHeader>

    <product type = "Product">

      <swap type = "Swap">

      <!-- Chase pays the floating rate every 6 months, based on 6M EUR-EURIBOR-Telerate
      + 10 basis points, on ACT/360 basis -->

        <swapStream type = "InterestRateStream">
          <payerPartyReference href = "#CHASE" />
          <receiverPartyReference href = "#UBSW" />

          <calculationPeriodDates type = "CalculationPeriodDates" id =
          "floatingCalcPeriodDates">
            <effectiveDate type = "AdjustableDate">
              <unadjustedDate type = "date">2000-04-05</unadjustedDate>
              <dateAdjustments type = "BusinessDayAdjustments">
                <businessDayConvention type = "string">NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate type = "AdjustableDate">
              <unadjustedDate type = "date">2005-01-05</unadjustedDate>
              <dateAdjustments type = "BusinessDayAdjustments">
                <businessDayConvention type = "string">FOLLOWING</businessDayConvention>
                <businessCenters type = "BusinessCenters" id = "primaryBusinessCenters">
                  <businessCenter type = "string">EUTA</businessCenter>
                </businessCenters>
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments type = "BusinessDayAdjustments">
              <businessDayConvention type = "string">FOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <firstPeriodStartDate type = "AdjustableDate">
              <unadjustedDate type = "date">2000-03-05</unadjustedDate>
              <dateAdjustments type = "BusinessDayAdjustments">
                <businessDayConvention type = "string">NONE</businessDayConvention>
              </dateAdjustments>
            </firstPeriodStartDate>
            <firstRegularPeriodStartDate type = "date">2000-10-05</firstRegularPeriodStartDate>
            <lastRegularPeriodEndDate type = "date">2004-10-05</lastRegularPeriodEndDate>
            <calculationPeriodFrequency type = "CalculationPeriodFrequency" base="Interval">
              <periodMultiplier type = "integer">6</periodMultiplier>
              <period type = "string">M</period>
              <rollConvention type = "string">5</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates type = "PaymentDates">
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <paymentFrequency type = "Interval">
              <periodMultiplier type = "integer">6</periodMultiplier>
              <period type = "string">M</period>
            </paymentFrequency>
            <payRelativeTo type = "string">CalculationPeriodEndDate</payRelativeTo>
            <paymentDatesAdjustments type = "BusinessDayAdjustments">
              <businessDayConvention type = "string">FOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <resetDates type = "ResetDates" id = "resetDates">
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <resetRelativeTo type = "string">CalculationPeriodStartDate</resetRelativeTo>
            <fixingDates type = "RelativeDateOffset" base="Offset">
              <periodMultiplier type = "integer">-2</periodMultiplier>
              <period type = "string">D</period>
              <dayType type = "string">Business</dayType>
              <businessDayConvention type = "string">NONE</businessDayConvention>
              <businessCenters type = "BusinessCenters">
                <businessCenter type = "string">EUTA</businessCenter>
              </businessCenters>
              <dateRelativeTo type = "string" href = "#resetDates">ResetDate</dateRelativeTo>
            </fixingDates>
            <resetFrequency type = "ResetFrequency" base = "Interval">
              <periodMultiplier type = "integer">6</periodMultiplier>
              <period type = "string">M</period>
            </resetFrequency>
            <resetDatesAdjustments type = "BusinessDayAdjustments">
              <businessDayConvention type = "string">FOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </resetDatesAdjustments>
          </resetDates>

          <calculationPeriodAmount type = "CalculationPeriodAmount">
            <calculation type = "Calculation">
              <notionalSchedule type = "Notional">
                <notionalStepSchedule type = "AmountSchedule" base = "Schedule">
                  <initialValue type = "decimal">75000000.00</initialValue>
```

```
          <currency type = "string">EUR</currency>
        </notionalStepSchedule>
      </notionalSchedule>
      <floatingRateCalculation type = "FloatingRateCalculation" base = "FloatingRate">
        <floatingRateIndex type = "string">EUR-EURIBOR-Telerate</floatingRateIndex>
        <indexTenor type = "Interval">
          <periodMultiplier type = "integer">6</periodMultiplier>
          <period type = "string">M</period>
        </indexTenor>
        <spreadSchedule type = "Schedule">
          <initialValue type = "decimal">0.001</initialValue>
        </spreadSchedule>
      </floatingRateCalculation>
      <dayCountFraction type = "string">ACT/360</dayCountFraction>
    </calculation>
  </calculationPeriodAmount>

  <stubCalculationPeriodAmount type = "StubCalculationPeriodAmount">
    <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
    <initialStub type = "Stub">
      <stubRate type = "decimal">0.05125</stubRate>
    </initialStub>
    <finalStub type = "Stub">
      <floatingRate type = "FloatingRate">
        <floatingRateIndex>EUR-EURIBOR-Telerate</floatingRateIndex>
        <indexTenor type= "Interval">
          <periodMultiplier type = "integer">3</periodMultiplier>
          <period type = "string">M</period>
        </indexTenor>
      </floatingRate>
    </finalStub>
  </stubCalculationPeriodAmount>

</swapStream>

<!-- UBSW pays the 5.25% fixed rate every year on a 30/360 basis -->

<swapStream type = "InterestRateStream">
  <payerPartyReference href = "#UBSW" />
  <receiverPartyReference href = "#CHASE" />

  <calculationPeriodDates type = "CalculationPeriodDates" id = "fixedCalcPeriodDates">
    <effectiveDate type = "AdjustableDate">
      <unadjustedDate type = "date">2000-04-05</unadjustedDate>
      <dateAdjustments type = "BusinessDayAdjustments">
        <businessDayConvention type = "string">NONE</businessDayConvention>
      </dateAdjustments>
    </effectiveDate>
    <terminationDate type = "AdjustableDate">
      <unadjustedDate type = "date">2005-01-05</unadjustedDate>
      <dateAdjustments type = "BusinessDayAdjustments">
        <businessDayConvention type = "string">FOLLOWING</businessDayConvention>
        <businessCentersReference href = "#primaryBusinessCenters" />
      </dateAdjustments>
    </terminationDate>
    <calculationPeriodDatesAdjustments type = "BusinessDayAdjustments">
      <businessDayConvention type = "string">FOLLOWING</businessDayConvention>
      <businessCentersReference href = "#primaryBusinessCenters" />
    </calculationPeriodDatesAdjustments>
    <firstPeriodStartDate type = "AdjustableDate">
      <unadjustedDate type = "date">2000-03-05</unadjustedDate>
      <dateAdjustments type = "BusinessDayAdjustments">
        <businessDayConvention type = "string">NONE</businessDayConvention>
```

```
              </dateAdjustments>
            </firstPeriodStartDate>
            <firstRegularPeriodStartDate type = "date">2000-10-05</firstRegularPeriodStartDate>
            <lastRegularPeriodEndDate type = "date">2004-10-05</lastRegularPeriodEndDate>
            <calculationPeriodFrequency type = "CalculationPeriodFrequency" base="Interval">
              <periodMultiplier type = "integer">1</periodMultiplier>
              <period type = "string">Y</period>
              <rollConvention type = "string">5</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates type = "PaymentDates">
            <calculationPeriodDatesReference href = "#fixedCalcPeriodDates" />
            <paymentFrequency type = "Interval">
              <periodMultiplier type = "integer">1</periodMultiplier>
              <period type = "string">Y</period>
            </paymentFrequency>
            <payRelativeTo type = "string">CalculationPeriodEndDate</payRelativeTo>
            <paymentDatesAdjustments type = "BusinessDayAdjustments">
              <businessDayConvention type = "string">FOLLOWING</businessDayConvention>
                <businessCentersReference href="#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <calculationPeriodAmount type = "CalculationPeriodAmount">
            <calculation type = "Calculation">
              <notionalSchedule type = "Notional">
                <notionalStepSchedule type = "AmountSchedule" base = "Schedule">
                  <initialValue type = "decimal">75000000.00</initialValue>
                  <currency type = "string">EUR</currency>
                </notionalStepSchedule>
              </notionalSchedule>
              <fixedRateSchedule type = "Schedule">
                <initialValue type = "decimal">0.0525</initialValue>
              </fixedRateSchedule>
              <dayCountFraction type = "string">30/360</dayCountFraction>
            </calculation>
          </calculationPeriodAmount>

        </swapStream>

      </swap>

    </product>

    <party type = "Party" id = "CHASE">
      <partyId type = "string">CHASUS33</partyId>
    </party>

    <party type = "Party" id = "UBSW">
      <partyId type = "string">UBSWUS33</partyId>
    </party>

  </trade>

</FpML>
```

9.7 Example 6 - Fixed/Floating Cross Currency Interest Rate Swap

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 & 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.

```
<?xml version ="1.0"?>
<!DOCTYPE FpML PUBLIC "-//FpML//DTD Financial product Markup Language 1-0//EN"  "" >

<FpML version = "1-0"
      businessCenterSchemeDefault = "http://www.fpml.org/spec/2000/business-center-1-0"
      businessDayConventionSchemeDefault = "http://www.fpml.org/spec/2000/business-day-
      convention-1-0"
      currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
      dateRelativeToSchemeDefault = "http://www.fpml.org/spec/2001/date-relative-to-1-0"
      dayCountFractionSchemeDefault = "http://www.fpml.org/spec/2000/day-count-fraction-1-0"
      dayTypeSchemeDefault = "http://www.fpml.org/spec/2000/day-type-1-0"
      floatingRateIndexSchemeDefault = "http://www.fpml.org/ext/isda-1991-definitions"
      partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
      payRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/pay-relative-to-1-0"
      periodSchemeDefault = "http://www.fpml.org/spec/2000/period-1-0"
      resetRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/reset-relative-to-1-0"
      rollConventionSchemeDefault = "http://www.fpml.org/spec/2000/roll-convention-1-0">

  <trade>

    <tradeHeader>

      <partyTradeIdentifier>
        <partyReference href = "#CHASE" />
        <tradeId tradeIdScheme = "http://www.chase.com/swaps/trade-id">TW9235</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier>
        <partyReference href = "#BARCLAYS" />
        <tradeId tradeIdScheme = "http://www.barclays.com/swaps/trade-id">SW2000</tradeId>
      </partyTradeIdentifier>

      <tradeDate>1994-12-12</tradeDate>

    </tradeHeader>

    <product>

      <swap>

        <!-- Chase pays the floating rate every 6 months, based on 6M USD-LIBOR-BBA, on an
        ACT/360 basis -->

        <swapStream>
          <payerPartyReference href = "#CHASE" />
          <receiverPartyReference href = "#BARCLAYS" />

          <calculationPeriodDates id = "floatingCalcPeriodDates">
            <effectiveDate>
              <unadjustedDate>1994-12-14</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>1999-12-14</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCenters id = "primaryBusinessCenters">
                  <businessCenter>GBLO</businessCenter>
                  <businessCenter>JPTO</businessCenter>
                  <businessCenter>USNY</businessCenter>
                </businessCenters>
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <calculationPeriodFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
              <rollConvention>14</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates>
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <resetDates id = "resetDates">
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <resetRelativeTo>CalculationPeriodStartDate</resetRelativeTo>
            <fixingDates>
              <periodMultiplier>-2</periodMultiplier>
              <period>D</period>
              <dayType>Business</dayType>
              <businessDayConvention>NONE</businessDayConvention>
              <businessCenters>
                <businessCenter>GBLO</businessCenter>
              </businessCenters>
              <dateRelativeTo href = "#resetDates">ResetDate</dateRelativeTo>
            </fixingDates>
            <resetFrequency>
              <periodMultiplier>6</periodMultiplier>
              <period>M</period>
            </resetFrequency>
            <resetDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </resetDatesAdjustments>
          </resetDates>

          <calculationPeriodAmount>
            <calculation>
              <notionalSchedule>
                <notionalStepSchedule>
                  <initialValue>10000000.00</initialValue>
                  <currency>USD</currency>
                </notionalStepSchedule>
              </notionalSchedule>
              <floatingRateCalculation>
                <floatingRateIndex>USD-LIBOR-BBA</floatingRateIndex>
                <indexTenor>
                  <periodMultiplier>6</periodMultiplier>
                  <period>M</period>
                </indexTenor>
              </floatingRateCalculation>
              <dayCountFraction>ACT/360</dayCountFraction>
            </calculation>
          </calculationPeriodAmount>

          <principalExchanges>
            <initialExchange>true</initialExchange>
            <finalExchange>true</finalExchange>
            <intermediateExchange>false</intermediateExchange>
          </principalExchanges>

          <cashflows>
            <cashflowsMatchParameters>true</cashflowsMatchParameters>

            <!-- Chase receives the initial USD principal exchange from Barclays -->

            <principalExchange>
              <adjustedPrincipalExchangeDate>1994-12-14</adjustedPrincipalExchangeDate>
              <principalExchangeAmount>-10000000.00</principalExchangeAmount>
            </principalExchange>

            <!-- Chase pays the final USD principal exchange to Barclays -->

            <principalExchange>
              <adjustedPrincipalExchangeDate>1999-12-14</adjustedPrincipalExchangeDate>
              <principalExchangeAmount>10000000.00</principalExchangeAmount>
            </principalExchange>

            <paymentCalculationPeriod>
              <adjustedPaymentDate>1995-06-14</adjustedPaymentDate>
              <calculationPeriod>
                <adjustedStartDate>1994-12-14</adjustedStartDate>
                <adjustedEndDate>1995-06-14</adjustedEndDate>
                <notionalAmount>10000000.00</notionalAmount>
                <floatingRateDefinition>
                  <rateObservation>
                    <adjustedFixingDate>1994-12-12</adjustedFixingDate>
                    <observationWeight>1</observationWeight>
                  </rateObservation>
                </floatingRateDefinition>
              </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>1995-12-14</adjustedPaymentDate>
              <calculationPeriod>
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                <adjustedEndDate>1995-12-14</adjustedEndDate>
                <notionalAmount>10000000.00</notionalAmount>
                <floatingRateDefinition>
                  <rateObservation>
                    <adjustedFixingDate>1995-06-12</adjustedFixingDate>
                    <observationWeight>1</observationWeight>
                  </rateObservation>
                </floatingRateDefinition>
              </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>1996-06-14</adjustedPaymentDate>
              <calculationPeriod>
                <adjustedStartDate>1995-12-14</adjustedStartDate>
                <adjustedEndDate>1996-06-14</adjustedEndDate>
                <notionalAmount>10000000.00</notionalAmount>
                <floatingRateDefinition>
                  <rateObservation>
                    <adjustedFixingDate>1995-12-12</adjustedFixingDate>
                    <observationWeight>1</observationWeight>
                  </rateObservation>
                </floatingRateDefinition>
              </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>1996-12-16</adjustedPaymentDate>
              <calculationPeriod>
                <adjustedStartDate>1996-06-14</adjustedStartDate>
                <adjustedEndDate>1996-12-16</adjustedEndDate>
                <notionalAmount>10000000.00</notionalAmount>
                <floatingRateDefinition>
                  <rateObservation>
                    <adjustedFixingDate>1996-06-12</adjustedFixingDate>
                    <observationWeight>1</observationWeight>
                  </rateObservation>
                </floatingRateDefinition>
              </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>1997-06-16</adjustedPaymentDate>
              <calculationPeriod>
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                <adjustedEndDate>1997-06-16</adjustedEndDate>
                <notionalAmount>10000000.00</notionalAmount>
                <floatingRateDefinition>
                  <rateObservation>
                    <adjustedFixingDate>1996-12-12</adjustedFixingDate>
                    <observationWeight>1</observationWeight>
                  </rateObservation>
                </floatingRateDefinition>
              </calculationPeriod>
            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>1997-12-15</adjustedPaymentDate>
              <calculationPeriod>
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                <adjustedEndDate>1997-12-15</adjustedEndDate>
                <notionalAmount>10000000.00</notionalAmount>
                <floatingRateDefinition>
                  <rateObservation>
                    <adjustedFixingDate>1997-06-12</adjustedFixingDate>
                    <observationWeight>1</observationWeight>
                  </rateObservation>
                </floatingRateDefinition>
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            </paymentCalculationPeriod>
            <paymentCalculationPeriod>
              <adjustedPaymentDate>1998-06-15</adjustedPaymentDate>
              <calculationPeriod>
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                <adjustedEndDate>1998-06-15</adjustedEndDate>
                <notionalAmount>10000000.00</notionalAmount>
                <floatingRateDefinition>
                  <rateObservation>
                    <adjustedFixingDate>1997-12-11</adjustedFixingDate>
                    <observationWeight>1</observationWeight>
                  </rateObservation>
                </floatingRateDefinition>
              </calculationPeriod>
            </paymentCalculationPeriod>
```

```
    <paymentCalculationPeriod>
      <adjustedPaymentDate>1998-12-14</adjustedPaymentDate>
      <calculationPeriod>
        <adjustedStartDate>1998-06-15</adjustedStartDate>
        <adjustedEndDate>1998-12-14</adjustedEndDate>
        <notionalAmount>10000000.00</notionalAmount>
        <floatingRateDefinition>
          <rateObservation>
            <adjustedFixingDate>1998-06-11</adjustedFixingDate>
            <observationWeight>1</observationWeight>
          </rateObservation>
        </floatingRateDefinition>
      </calculationPeriod>
    </paymentCalculationPeriod>
    <paymentCalculationPeriod>
      <adjustedPaymentDate>1999-06-14</adjustedPaymentDate>
      <calculationPeriod>
        <adjustedStartDate>1998-12-14</adjustedStartDate>
        <adjustedEndDate>1999-06-14</adjustedEndDate>
        <notionalAmount>10000000.00</notionalAmount>
        <floatingRateDefinition>
          <rateObservation>
            <adjustedFixingDate>1998-12-10</adjustedFixingDate>
            <observationWeight>1</observationWeight>
          </rateObservation>
        </floatingRateDefinition>
      </calculationPeriod>
    </paymentCalculationPeriod>
    <paymentCalculationPeriod>
      <adjustedPaymentDate>1999-12-14</adjustedPaymentDate>
      <calculationPeriod>
        <adjustedStartDate>1999-06-14</adjustedStartDate>
        <adjustedEndDate>1999-12-14</adjustedEndDate>
        <notionalAmount>10000000.00</notionalAmount>
        <floatingRateDefinition>
          <rateObservation>
            <adjustedFixingDate>1999-06-10</adjustedFixingDate>
            <observationWeight>1</observationWeight>
          </rateObservation>
        </floatingRateDefinition>
      </calculationPeriod>
    </paymentCalculationPeriod>
  </cashflows>

</swapStream>

<!-- Barclays pays the 6% fixed rate every year on a 30E/360 basis -->

<swapStream>
  <payerPartyReference href = "#BARCLAYS" />
  <receiverPartyReference href = "#CHASE" />

  <calculationPeriodDates id = "fixedCalcPeriodDates">
    <effectiveDate>
      <unadjustedDate>1994-12-14</unadjustedDate>
      <dateAdjustments>
        <businessDayConvention>NONE</businessDayConvention>
      </dateAdjustments>
    </effectiveDate>
    <terminationDate>
      <unadjustedDate>1999-12-14</unadjustedDate>
      <dateAdjustments>
        <businessDayConvention>MODFOLLOWING</businessDayConvention>
        <businessCentersReference href = "#primaryBusinessCenters" />
      </dateAdjustments>
    </terminationDate>
    <calculationPeriodDatesAdjustments>
      <businessDayConvention>MODFOLLOWING</businessDayConvention>
      <businessCentersReference href = "#primaryBusinessCenters" />
    </calculationPeriodDatesAdjustments>
    <calculationPeriodFrequency>
      <periodMultiplier>1</periodMultiplier>
      <period>Y</period>
      <rollConvention>14</rollConvention>
    </calculationPeriodFrequency>
  </calculationPeriodDates>

  <paymentDates>
    <calculationPeriodDatesReference href = "#fixedCalcPeriodDates" />
    <paymentFrequency>
      <periodMultiplier>1</periodMultiplier>
      <period>Y</period>
    </paymentFrequency>
    <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
    <paymentDatesAdjustments>
      <businessDayConvention>MODFOLLOWING</businessDayConvention>
      <businessCentersReference href="#primaryBusinessCenters" />
    </paymentDatesAdjustments>
  </paymentDates>

  <calculationPeriodAmount>
    <calculation>
      <notionalSchedule>
        <notionalStepSchedule>
          <initialValue>1000000000.00</initialValue>
          <currency>JPY</currency>
        </notionalStepSchedule>
      </notionalSchedule>
      <fixedRateSchedule>
        <initialValue>0.06</initialValue>
      </fixedRateSchedule>
      <dayCountFraction>30E/360</dayCountFraction>
    </calculation>
  </calculationPeriodAmount>

  <principalExchanges>
    <initialExchange>true</initialExchange>
    <finalExchange>true</finalExchange>
    <intermediateExchange>false</intermediateExchange>
  </principalExchanges>

  <cashflows>
    <cashflowsMatchParameters>true</cashflowsMatchParameters>

    <!-- Barclays receives the initial JPY principal exchange from Chase -->

    <principalExchange>
      <adjustedPrincipalExchangeDate>1994-12-14</adjustedPrincipalExchangeDate>
      <principalExchangeAmount>-1000000000.00</principalExchangeAmount>
    </principalExchange>

    <!-- Barclays pays the final JPY principal exchange to Chase -->

    <principalExchange>
      <adjustedPrincipalExchangeDate>1999-12-14</adjustedPrincipalExchangeDate>
      <principalExchangeAmount>1000000000.00</principalExchangeAmount>
```

```
        </principalExchange>

        <paymentCalculationPeriod>
          <adjustedPaymentDate>1995-12-14</adjustedPaymentDate>
          <calculationPeriod>
            <adjustedStartDate>1994-12-14</adjustedStartDate>
            <adjustedEndDate>1995-12-14</adjustedEndDate>
            <notionalAmount>1000000000.00</notionalAmount>
            <fixedRate>0.06</fixedRate>
          </calculationPeriod>
        </paymentCalculationPeriod>
        <paymentCalculationPeriod>
          <adjustedPaymentDate>1996-12-16</adjustedPaymentDate>
          <calculationPeriod>
            <adjustedStartDate>1995-12-14</adjustedStartDate>
            <adjustedEndDate>1996-12-16</adjustedEndDate>
            <notionalAmount>1000000000.00</notionalAmount>
            <fixedRate>0.06</fixedRate>
          </calculationPeriod>
        </paymentCalculationPeriod>
        <paymentCalculationPeriod>
          <adjustedPaymentDate>1997-12-15</adjustedPaymentDate>
          <calculationPeriod>
            <adjustedStartDate>1996-12-16</adjustedStartDate>
            <adjustedEndDate>1997-12-15</adjustedEndDate>
            <notionalAmount>1000000000.00</notionalAmount>
            <fixedRate>0.06</fixedRate>
          </calculationPeriod>
        </paymentCalculationPeriod>
        <paymentCalculationPeriod>
          <adjustedPaymentDate>1998-12-14</adjustedPaymentDate>
          <calculationPeriod>
            <adjustedStartDate>1997-12-15</adjustedStartDate>
            <adjustedEndDate>1998-12-14</adjustedEndDate>
            <notionalAmount>1000000000.00</notionalAmount>
            <fixedRate>0.06</fixedRate>
          </calculationPeriod>
        </paymentCalculationPeriod>
        <paymentCalculationPeriod>
          <adjustedPaymentDate>1999-12-14</adjustedPaymentDate>
          <calculationPeriod>
            <adjustedStartDate>1998-12-14</adjustedStartDate>
            <adjustedEndDate>1999-12-14</adjustedEndDate>
            <notionalAmount>1000000000.00</notionalAmount>
            <fixedRate>0.06</fixedRate>
          </calculationPeriod>
        </paymentCalculationPeriod>

      </cashflows>

    </swapStream>

  </swap>

</product>

<party id = "CHASE">
  <partyId>CHASUS33</partyId>
</party>

<party id = "BARCLAYS">
  <partyId>BARCGB2L</partyId>
</party>
```

```
  </trade>
</FpML>
```

9.8 Example 7 – Fixed/Floating Overnight Interest Rate Swap (OIS)

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.

```
<?xml version ="1.0"?>
<!DOCTYPE FpML PUBLIC "-//FpML//DTD Financial product Markup Language 1-0//EN"  "">

<FpML version = "1-0"
      businessCenterSchemeDefault = "http://www.fpml.org/spec/2000/business-center-1-0"
      businessDayConventionSchemeDefault = "http://www.fpml.org/spec/2000/business-day
      convention-1-0"
      currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
      dateRelativeToSchemeDefault = "http://www.fpml.org/spec/2001/date-relative-to-1-0"
      dayCountFractionSchemeDefault = "http://www.fpml.org/spec/2000/day-count-fraction-1-0"
      dayTypeSchemeDefault = "http://www.fpml.org/spec/2000/day-type-1-0"
      floatingRateIndexSchemeDefault = "http://www.fpml.org/ext/isda-2000-definitions"
      partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
      payRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/pay-relative-to-1-0"
      periodSchemeDefault = "http://www.fpml.org/spec/2000/period-1-0"
      resetRelativeToSchemeDefault = "http://www.fpml.org/spec/2000/reset-relative-to-1-0"
      rollConventionSchemeDefault = "http://www.fpml.org/spec/2000/roll-convention-1-0">

<trade>

  <tradeHeader>
      <partyTradeIdentifier>
        <partyReference href = "#CITI" />
        <tradeId tradeIdScheme = "http://www.citibank.com/swaps/trade-id">TRN12000</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier>
        <partyReference href = "#MCMC" />
        <tradeId tradeIdScheme = "http://www.mizuhocap.com/swaps/trade-id">TRN13000</tradeId>
      </partyTradeIdentifier>

      <tradeDate>2001-01-25</tradeDate>
      <calculationAgentPartyReference href = "#CITI" />

    </tradeHeader>

    <product>

      <swap>

      <!-- Citibank pays the EUR-EONIA-OIS-COMPOUND stream, on an ACT/360 basis -->

        <swapStream>
          <payerPartyReference href = "#CITI" />
          <receiverPartyReference href = "#MCMC" />

          <calculationPeriodDates id = "floatingCalcPeriodDates">
            <effectiveDate>
              <unadjustedDate>2001-01-29</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>2001-04-29</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCenters id = "primaryBusinessCenters">
                  <businessCenter>EUTA</businessCenter>
                </businessCenters>
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <calculationPeriodFrequency>
              <periodMultiplier>1</periodMultiplier>
              <period>T</period>
              <rollConvention>NONE</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates>
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>1</periodMultiplier>
              <period>T</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDaysOffset>
              <periodMultiplier>1</periodMultiplier>
              <period>D</period>
              <dayType>Business</dayType>
            </paymentDaysOffset>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <resetDates id = "resetDates">
            <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
            <resetRelativeTo>CalculationPeriodEndDate</resetRelativeTo>
            <fixingDates>
              <periodMultiplier>0</periodMultiplier>
              <period>D</period>
              <businessDayConvention>PRECEDING</businessDayConvention>
              <businessCenters>
                <businessCenter>EUTA</businessCenter>
              </businessCenters>
              <dateRelativeTo href = "#resetDates">ResetDate</dateRelativeTo>
            </fixingDates>
            <resetFrequency>
              <periodMultiplier>1</periodMultiplier>
              <period>T</period>
            </resetFrequency>
            <resetDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </resetDatesAdjustments>
          </resetDates>

          <calculationPeriodAmount>
            <calculation>
              <notionalSchedule>
                <notionalStepSchedule>
                  <initialValue>100000000.00</initialValue>
                  <currency>EUR</currency>
                </notionalStepSchedule>
              </notionalSchedule>
              <floatingRateCalculation>
                <floatingRateIndex>EUR-EONIA-OIS-COMPOUND</floatingRateIndex>
              </floatingRateCalculation>
              <dayCountFraction>ACT/360</dayCountFraction>
            </calculation>
          </calculationPeriodAmount>

        </swapStream>

        <!-- Mizuho Capital pays the 5.10% fixed rate on ACT/360 basis -->

        <swapStream>
          <payerPartyReference href = "#MCMC" />
          <receiverPartyReference href = "#CITI" />
          <calculationPeriodDates id = "fixedCalcPeriodDates">
            <effectiveDate>
              <unadjustedDate>2001-01-29</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>NONE</businessDayConvention>
              </dateAdjustments>
            </effectiveDate>
            <terminationDate>
              <unadjustedDate>2001-04-29</unadjustedDate>
              <dateAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCentersReference href = "#primaryBusinessCenters" />
              </dateAdjustments>
            </terminationDate>
            <calculationPeriodDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href = "#primaryBusinessCenters" />
            </calculationPeriodDatesAdjustments>
            <calculationPeriodFrequency>
              <periodMultiplier>1</periodMultiplier>
              <period>T</period>
              <rollConvention>NONE</rollConvention>
            </calculationPeriodFrequency>
          </calculationPeriodDates>

          <paymentDates>
            <calculationPeriodDatesReference href = "#fixedCalcPeriodDates" />
            <paymentFrequency>
              <periodMultiplier>1</periodMultiplier>
              <period>T</period>
            </paymentFrequency>
            <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
            <paymentDatesAdjustments>
              <businessDayConvention>MODFOLLOWING</businessDayConvention>
              <businessCentersReference href= "#primaryBusinessCenters" />
            </paymentDatesAdjustments>
          </paymentDates>

          <calculationPeriodAmount>
            <calculation>
              <notionalSchedule>
                <notionalStepSchedule>
                  <initialValue>100000000.00</initialValue>
                  <currency>EUR</currency>
                </notionalStepSchedule>
              </notionalSchedule>
              <fixedRateSchedule>
                <initialValue>0.051</initialValue>
              </fixedRateSchedule>
              <dayCountFraction>ACT/360</dayCountFraction>
            </calculation>
          </calculationPeriodAmount>

        </swapStream>
```

```
      </swap>

    </product>

    <party id = "CITI">
      <partyId>CITIUS33</partyId>
    </party>

    <party id = "MCMC">
      <partyId>MCMCUS33</partyId>
    </party>

  </trade>

</FpML>
```

9.9 Example 8 - Forward Rate Agreement

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 & Derivatives - October 1998 Standards Release - August 1998 Edition).
- The `floatingRateIndexScheme` refers to the 1991 ISDA Definitions.

```
<?xml version ="1.0"?>
<!DOCTYPE FpML PUBLIC "-//FpML//DTD Financial product Markup Language 1-0//EN" "" >

<FpML version = "1-0"
      businessCenterSchemeDefault = "http://www.fpml.org/spec/2000/business-center-1-0"
      businessDayConventionSchemeDefault = "http://www.fpml.org/spec/2000/business-day-
      convention-1-0"
      currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
      dateRelativeToSchemeDefault = "http://www.fpml.org/spec/2001/date-relative-to-1-0"
      dayCountFractionSchemeDefault = "http://www.fpml.org/spec/2000/day-count-fraction-1-0"
      dayTypeSchemeDefault = "http://www.fpml.org/spec/2000/day-type-1-0"
      floatingRateIndexSchemeDefault = "http://www.fpml.org/ext/isda-1991-definitions"
      partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
      periodSchemeDefault = "http://www.fpml.org/spec/2000/period-1-0">

  <trade>

    <tradeHeader>

      <partyTradeIdentifier>
        <partyReference href = "#MIDLAND" />
        <tradeId tradeIdScheme = "http://www.hsbc.com/swaps/trade-id">MB87623</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier >
        <partyReference href = "#ABNAMRO" />
        <tradeId tradeIdScheme = "http://www.abnamro.com/swaps/trade-id">AA9876</tradeId>
      </partyTradeIdentifier>

      <tradeDate>1991-05-14</tradeDate>

    </tradeHeader>

    <product>

      <fra>
        <buyerPartyReference href = "#MIDLAND"/>
        <sellerPartyReference href = "#ABNAMRO"/>
        <adjustedEffectiveDate id = "resetDate">1991-07-17</adjustedEffectiveDate>
        <adjustedTerminationDate>1992-01-17</adjustedTerminationDate>
        <paymentDate>
          <unadjustedDate>1991-07-17</unadjustedDate >
          <dateAdjustments>
            <businessDayConvention>FOLLOWING</businessDayConvention>
            <businessCenters>
              <businessCenter>CHZU</businessCenter>
            </businessCenters>
          </dateAdjustments>
        </paymentDate>
        <fixingDateOffset>
          <periodMultiplier>-2</periodMultiplier>
          <period>D</period>
          <dayType>Business</dayType>
          <businessDayConvention>NONE</businessDayConvention>
          <businessCenters>
            <businessCenter>GBLO</businessCenter>
          </businessCenters>
          <dateRelativeTo href = "#resetDate">ResetDate</dateRelativeTo>
        </fixingDateOffset>
        <dayCountFraction>ACT/360</dayCountFraction>
        <calculationPeriodNumberOfDays>184</calculationPeriodNumberOfDays>
        <notional>
          <currency>CHF</currency>
          <amount>25000000.00</amount>
        </notional>
        <fixedRate>0.04</fixedRate>
        <floatingRateIndex>CHF-LIBOR-BBA</floatingRateIndex>
        <indexTenor>
          <periodMultiplier>6</periodMultiplier>
          <period>M</period>
        </indexTenor>
        <fraDiscounting>true</fraDiscounting>
      </fra>

    </product>

    <party id = "MIDLAND">
      <partyId>MIDLGB22</partyId>
    </party>

    <party id = "ABNAMRO">
      <partyId>ABNANL2A</partyId>
    </party>

  </trade>
</FpML>
```

APPENDIX

This appendix documents changes introduced between FpML Version 1.0 Trial Recommendation 12 March 2001 (http://www.fpml.org/spec/2001/tr-fpml-1-0-2001-03-12) and FpML Version 1.0 Recommendation 14 May 2001 (http://www.fpml.org/spec/2001/rec-fpml-1-0-2001-05-14)

1. All references to the XML Schema Part 2: Dataypes W3C Candidate Recommendation 24 October 2000, either by name, URI or URL, now refer to the XML Schema Part 2: Datatypes W3C Recommendation 02 May 2001.

2. **Section 4.3 FpML_Fra.** Wording has been added under the `<fixingDateOffset>` element definition describing the default source for the fixing date offset calculation rules.

3. **Section 4.3 FpML_ResetDates.** Wording has been added under the `<fixingDates>` element definition describing the default source for the fixing date offset calculation rules.

4. **Section 5 Document Type Definition (DTD).** The non-alphabetical ordering of certain element declarations within the DTD was corrected (`<calculationAgentPartyReference>` and `<discountRateDayCountFraction>`).

5. **Section 9.6 Sample FpML**. Examples 1 to 8 now show the correct URI value for the dateRelativeToSchemeDefault attribute. The year identifier in the previous version was …/2000/… instead of …/2001/…, i.e. http://www.fpml.org/spec/2001/date-relative-to-1-0 is correct.