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Status of this Document:

This is the Last Call public Working Draft of FpML 1.0 for review by the public and by members and working groups of the FpML Consortium. It is a draft document and may be updated, replaced or obsoleted by other documents at any time. It is inappropriate to use FpML Working Drafts as reference material or to cite them as other than "work in progress".

It has been reviewed by the FpML Standards Committee which has agreed to its publication as a Last Call draft. The Last Call period is expected to end 25 August, 2000.

The FpML Consortium encourages reviewing organizations and individuals to provide comments as early as possible. Please send comments via e-mail to fpml-issues@egroups.com. Please report each issue in a separate e-mail. An [archive of the comments](#) is available together with an [issues list](#).

While implementation experience reports are welcomed, the FpML Consortium will not allow early implementation to constrain its ability to make changes to this specification prior to final release.

This document has been produced by the Products Working Group, with contributions from the Architecture Working Group, as part of the FpML 1.0 Activity and is part of the FpML Standards Approval process. This Activity was initiated by the FpML Steering Committee in November 1999 to produce a limited scope standard covering trade content definitions for interest rate derivatives.

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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 Working Draft. These have been deferred, pending 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.
- 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 Products Working Group has decided, for this release, to identify parties using the S.W.I.F.T. industry standard bank identifier code (BIC). The FpML Steering and Standards Committees have agreed to look into the subject of static data sources and have created the Counterparty Working Group with this purpose in mind.

2.2 Architecture Framework

The Products Working Group has developed FpML 1.0 within the [FpML Architecture](#) 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).

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_BusinessCenter`, `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

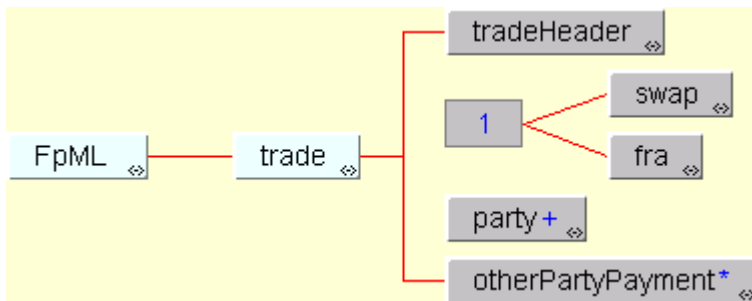
dates such as `calculationPeriodDates`, `resetDates` and `paymentDates`. However, it should not be inferred from this that any fundamental distinction is drawn between components in usage or structure.

3.3 Overview of Core Trade Components

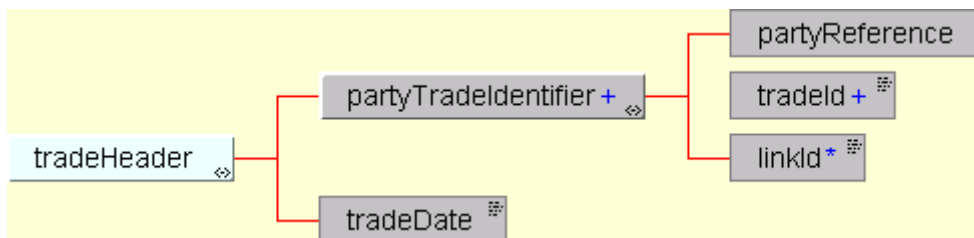
3.3.1 The Trade Component

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`, a single product (either `swap` or `fra`), `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)



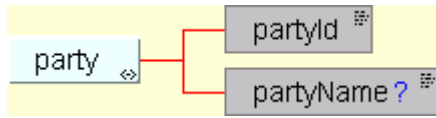
- **tradeHeader** - The information within `tradeHeader` will be common across all types of trade regardless of product. In FpML 1.0 this contains the trade date and party trade identifiers.



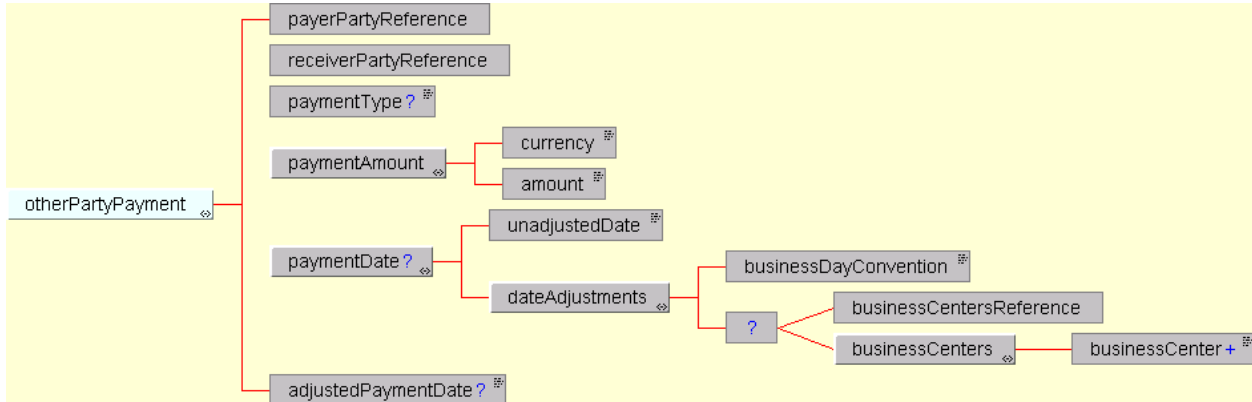
- **product** - Product is an abstract concept. The actual component that will appear in FpML 1.0 will be either a `swap` or an `fra` component. These contain the economics of the trade and are described in more detail below.
- **party** - The `party` component holds information about a party involved 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

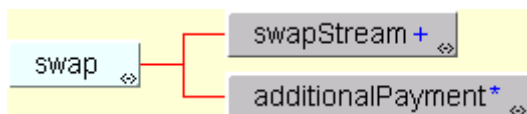
The product component specifies the financial instrument being traded. This component captures the economic details of the trade. Because of the complexity of the OTC Interest Rate Derivatives domain that FpML covers, composing these products from various building blocks is a key aspect of the design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

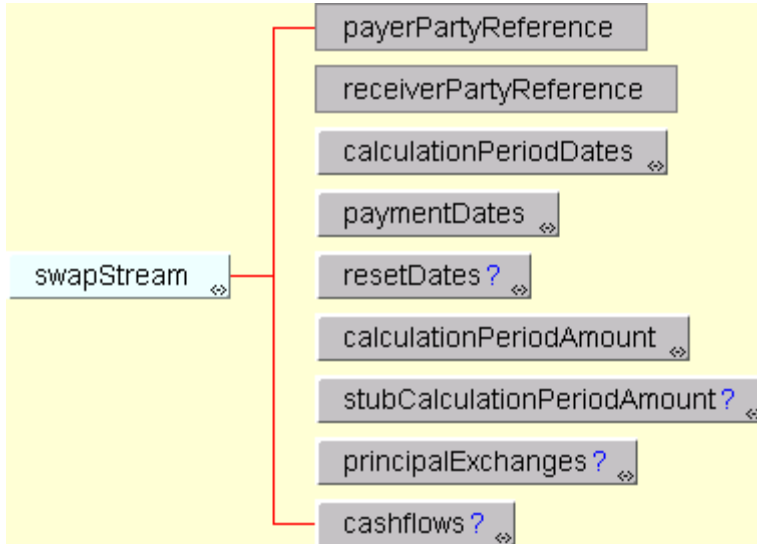
Organizations wishing to take advantage, for internal communications, of the facility for specifying cashflows which are inconsistent with the parametric representation will need to specify additional rules for how the parametric representation should be processed. This applies to both the creation of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

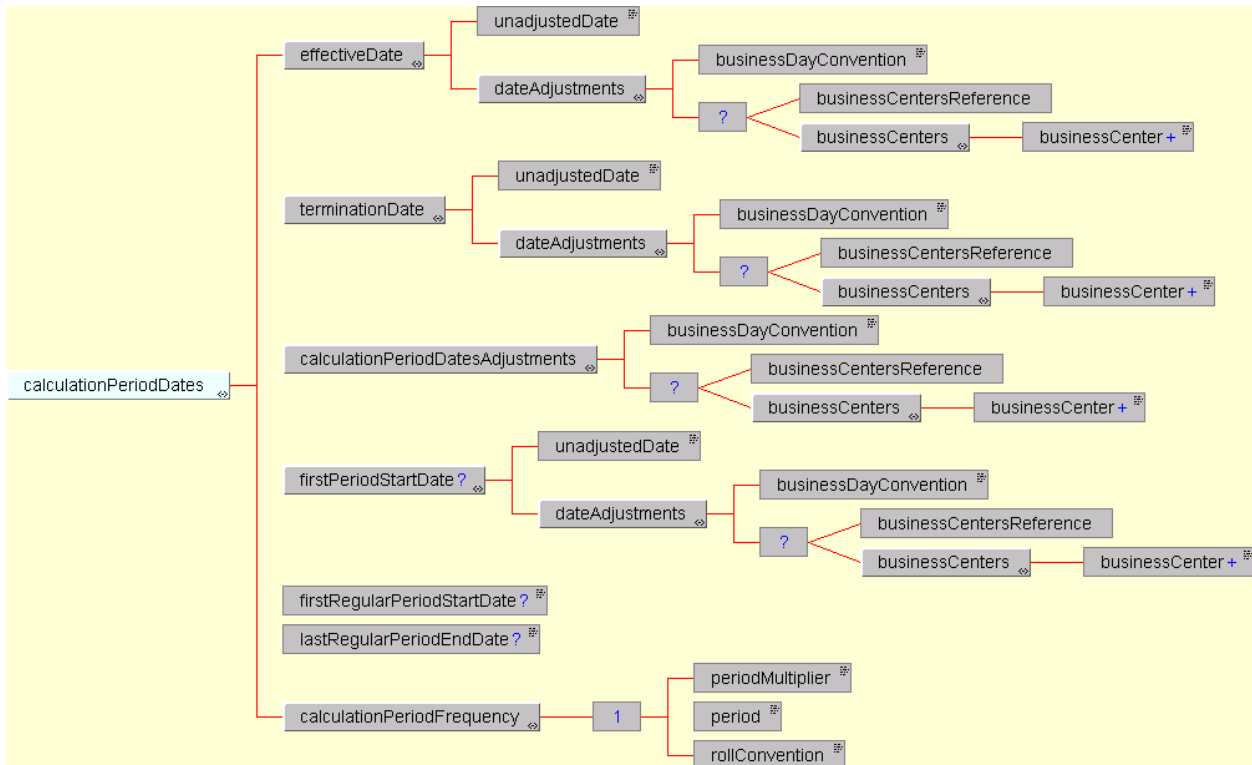
The other date components within `swapStream` are related to the `calculationPeriodDates` component. The `paymentDates` and `resetDates` components contain the information necessary to construct a schedule of payment and reset dates relative to the calculation period dates.

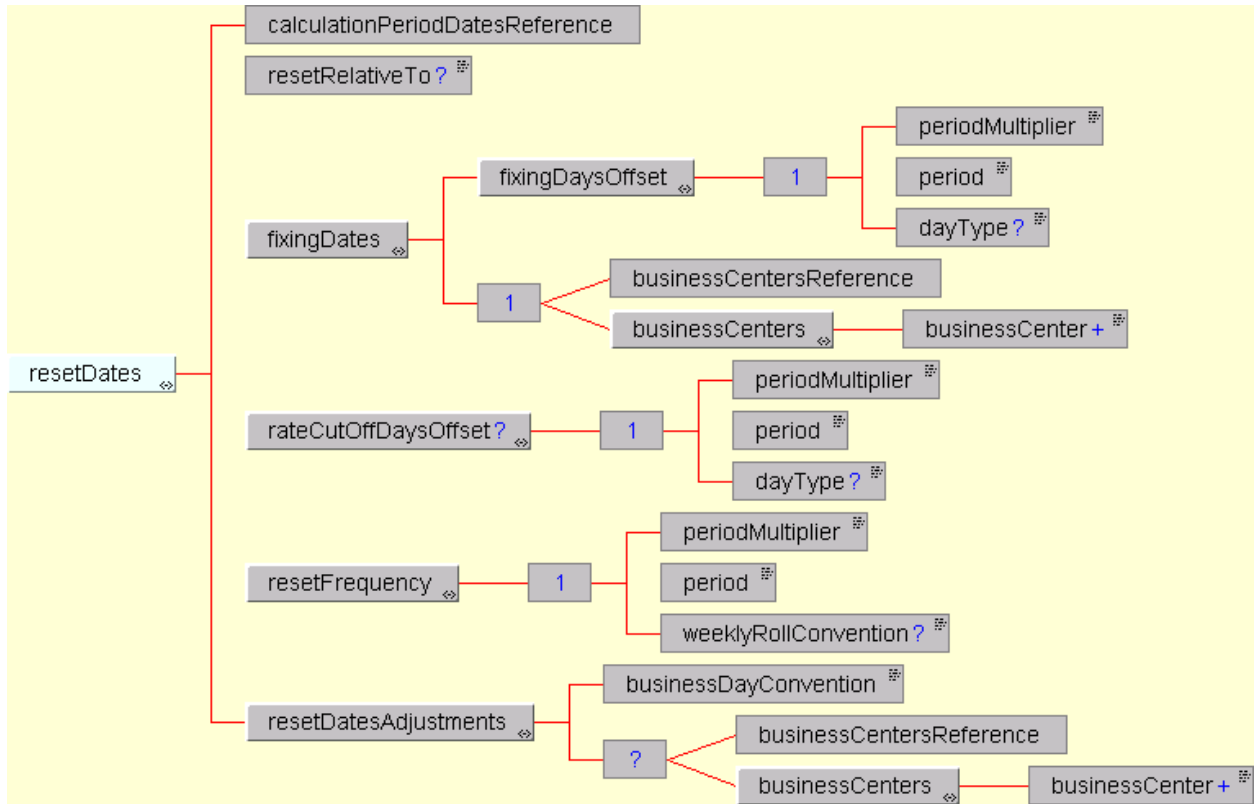
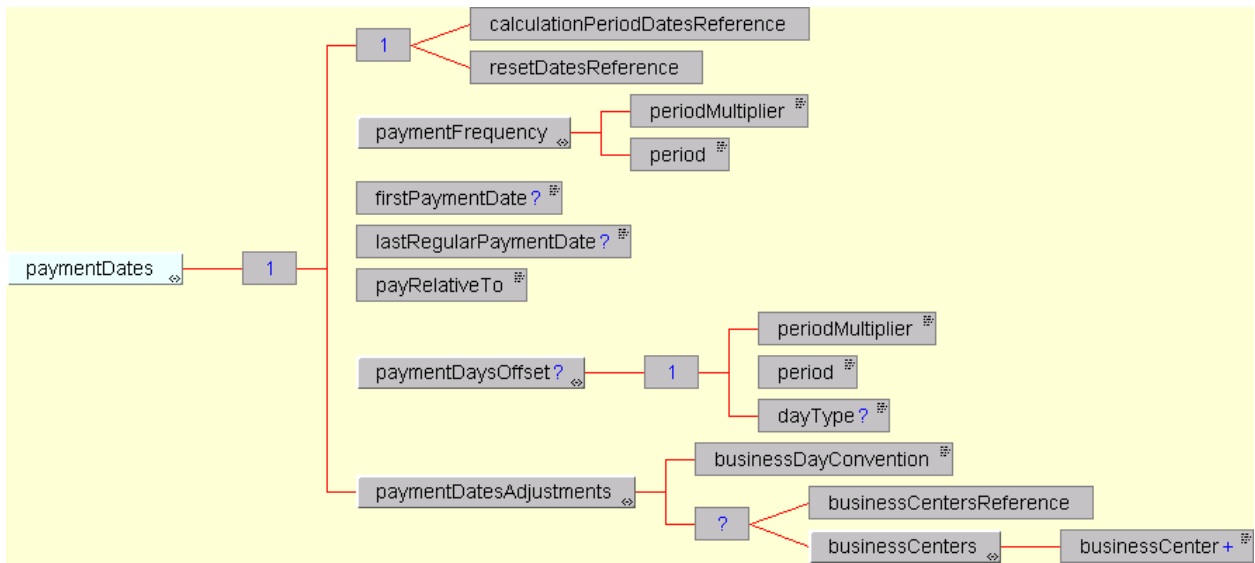
The information relating to amounts and rates is collected in the `calculationPeriodAmount` and `stubCalculationPeriodAmount` components.

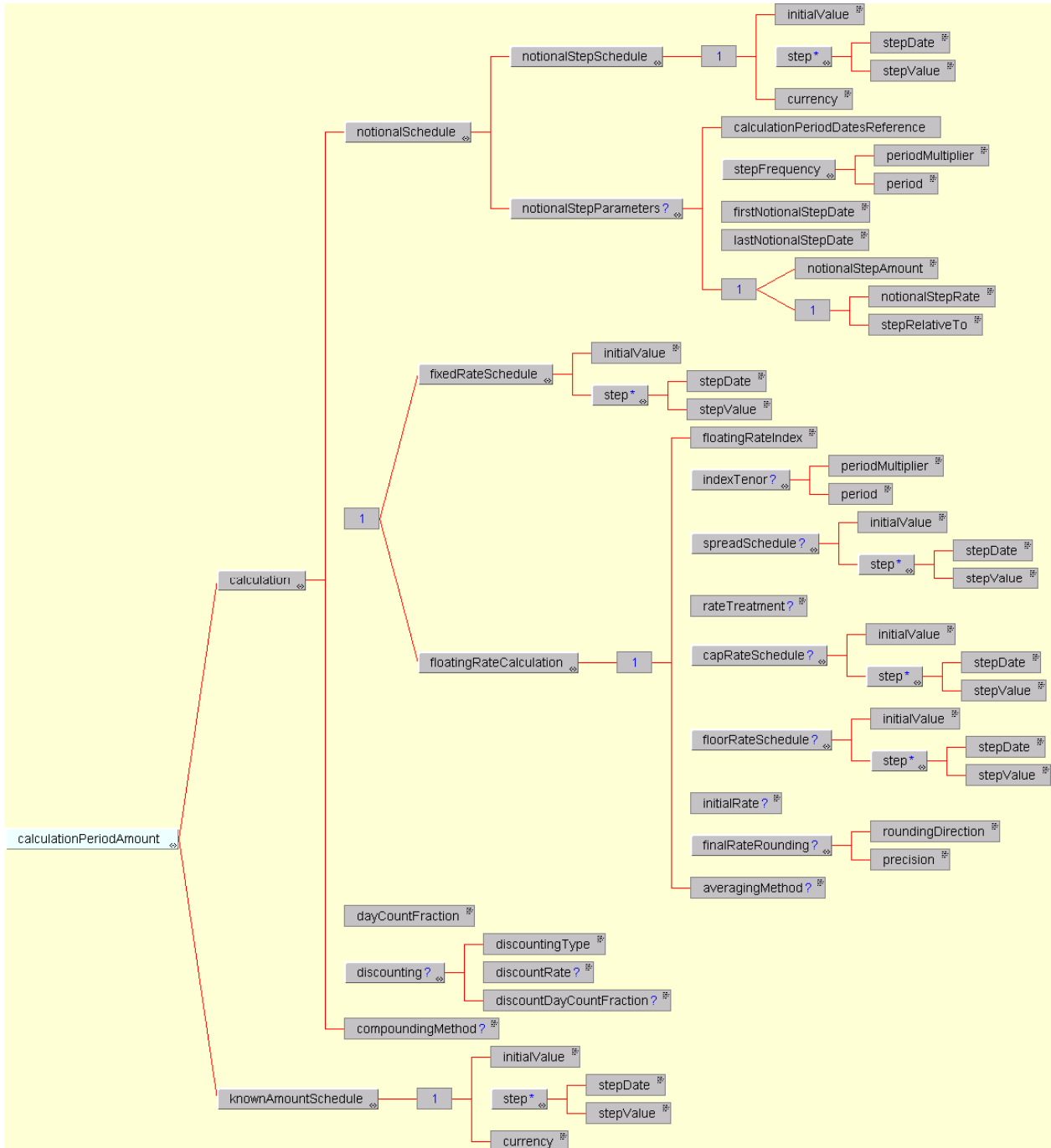
Certain swapStream components are designated as being optional (although it would be more accurate to say that they are conditional). Thus a fixed rate stream never includes a resetDates component, but this is required for a floating rate stream. Similarly, the stubCalculationPeriodAmount component will 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.

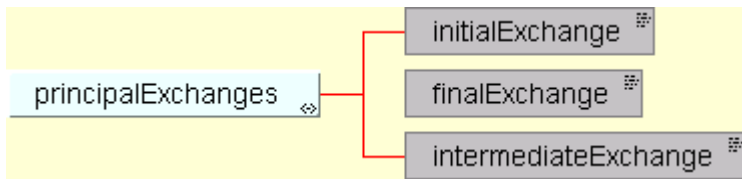
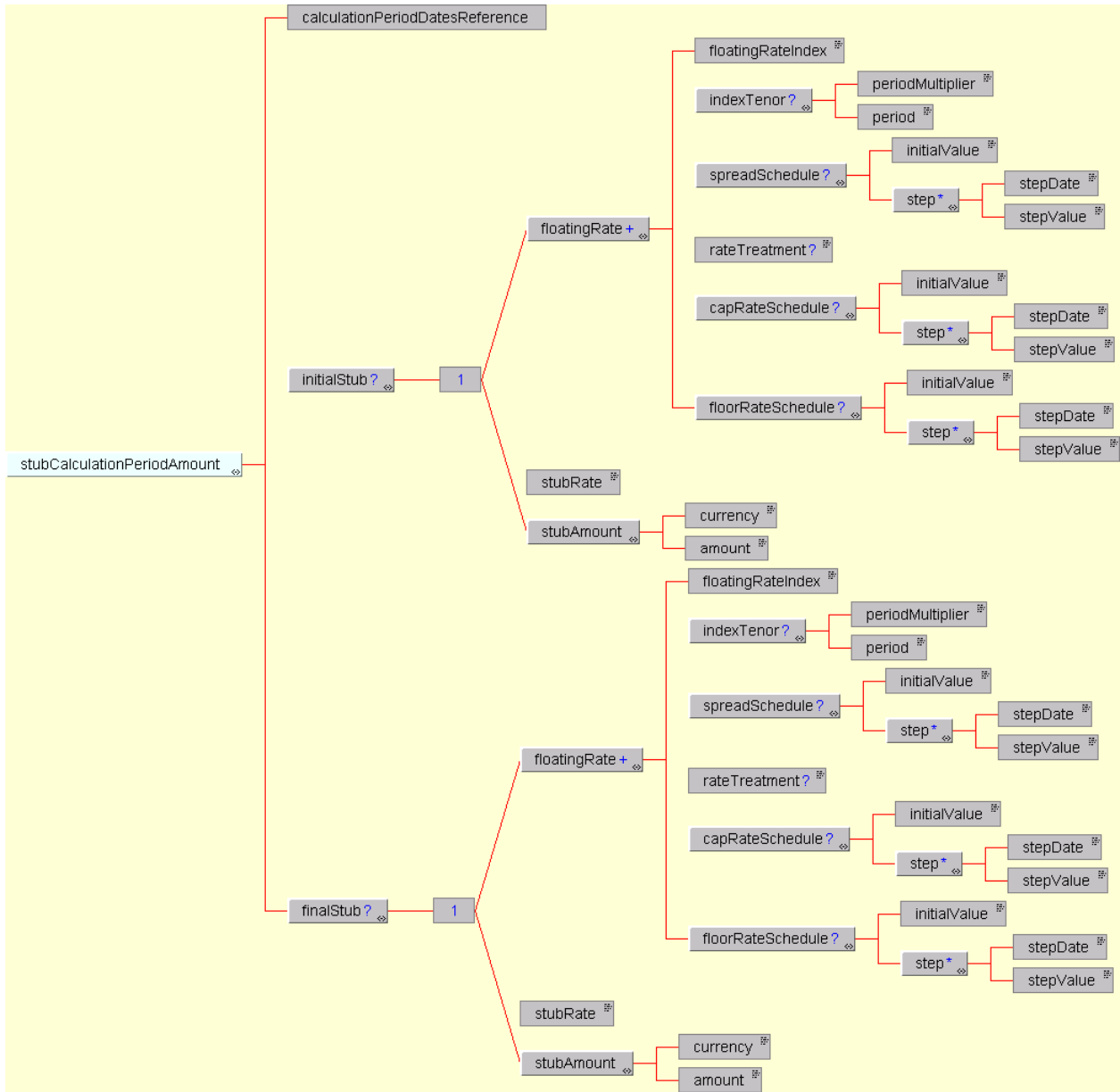
The payerPartyReference and receiverPartyReference elements indicate which party is paying and which receiving the stream payments. This is done by referencing the appropriate party within the party component.

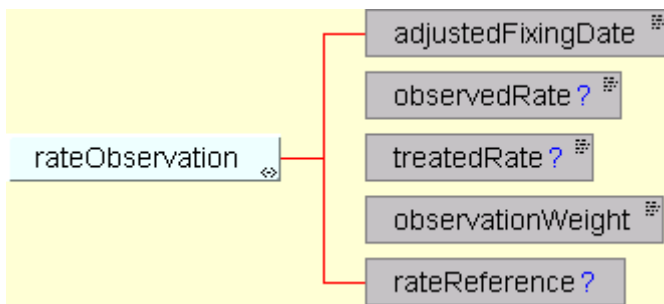
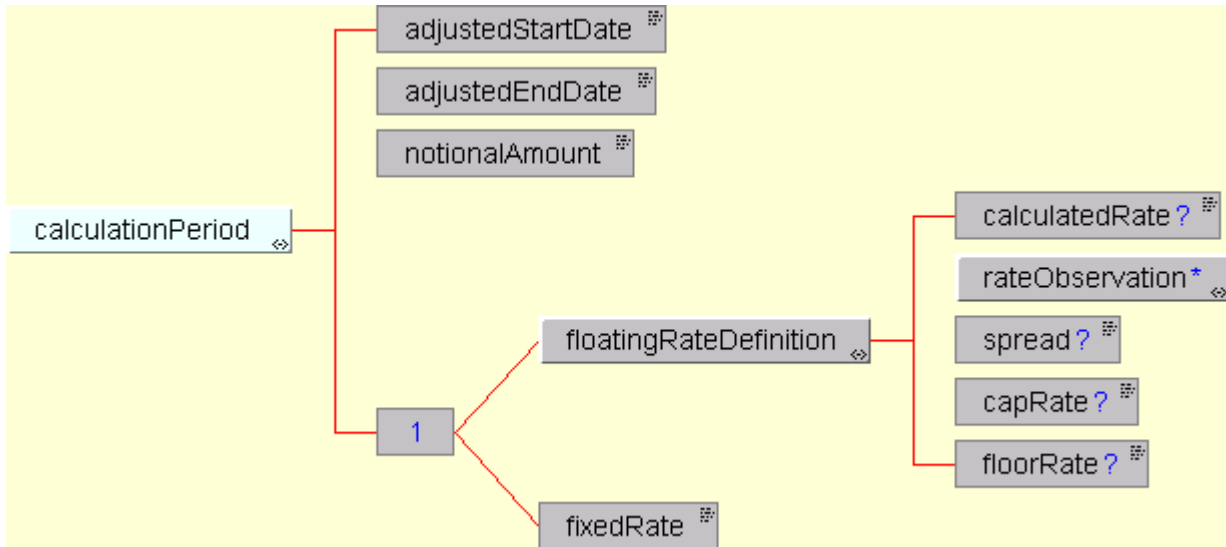
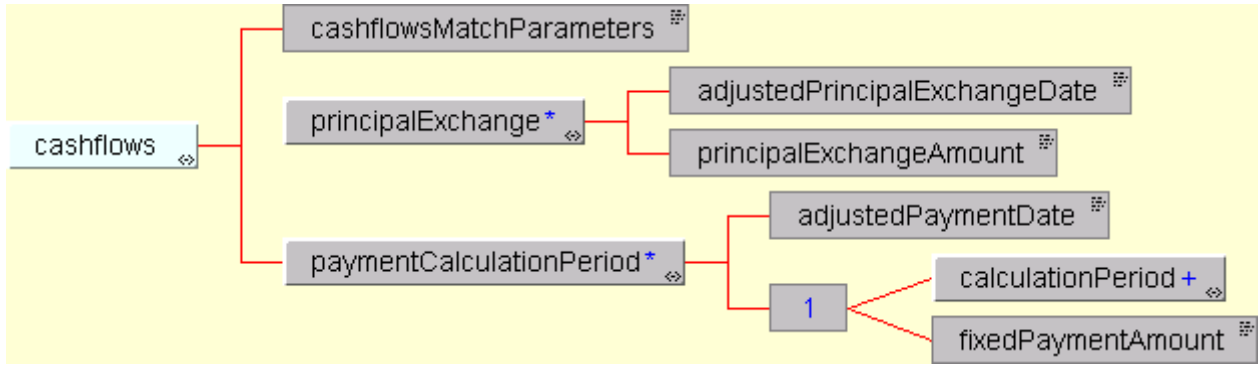
The detailed structures within the swapStream are shown diagrammatically below:







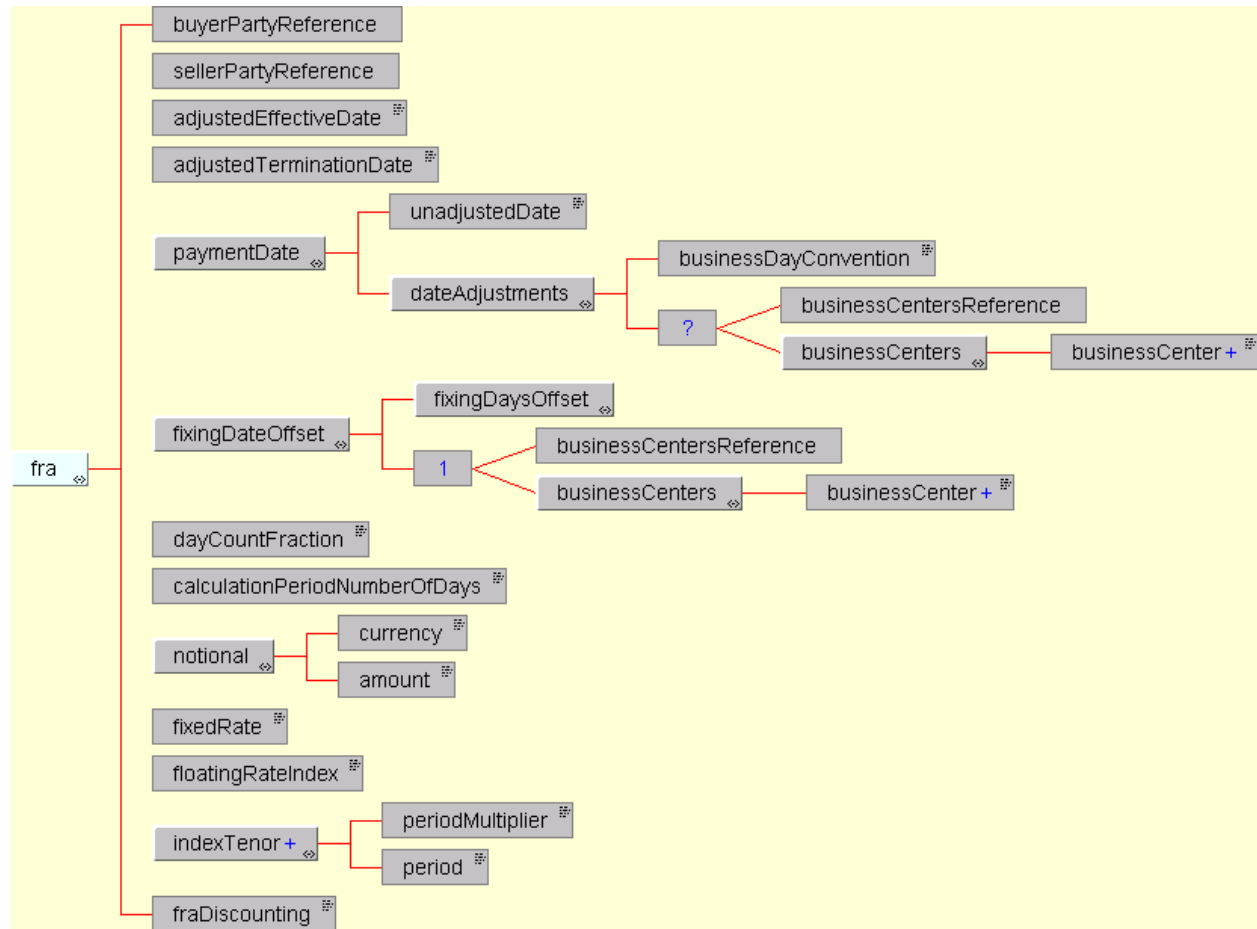




Forward Rate Agreement

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 permitted domain for party identification is a valid bank identifier code (BIC). The BIC is also 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](#) 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

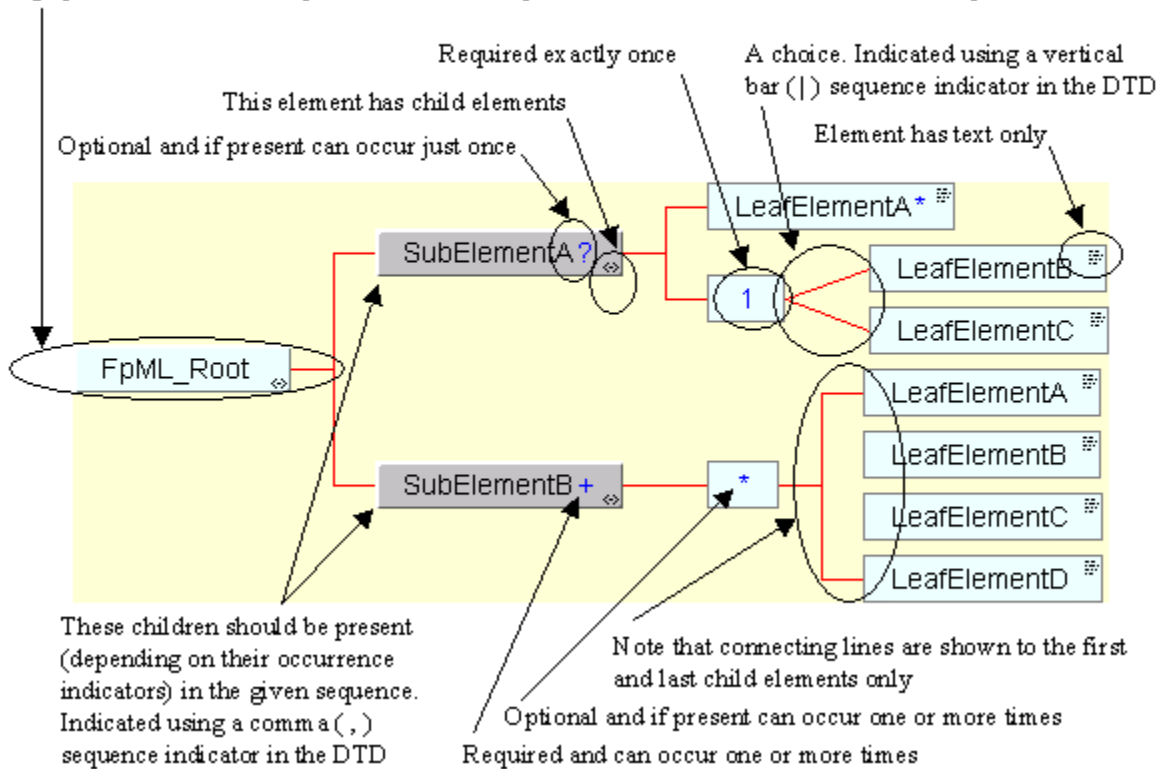


Figure 4.1: Graphical Representation of a DTD

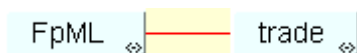
4.2 Root Element Definition

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)>
```

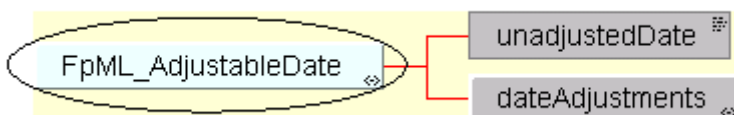
4.3 Entity Definitions

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:

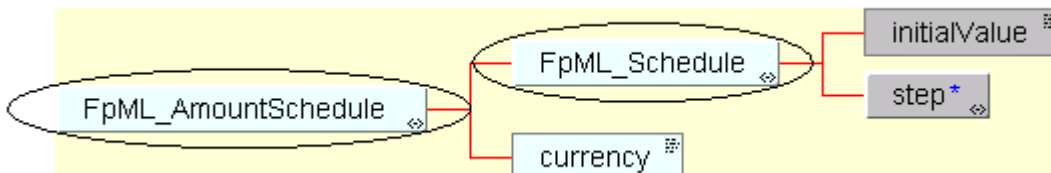
```
<!ENTITY % FpML_AdjustableDate "unadjustedDate , dateAdjustments">
```

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:

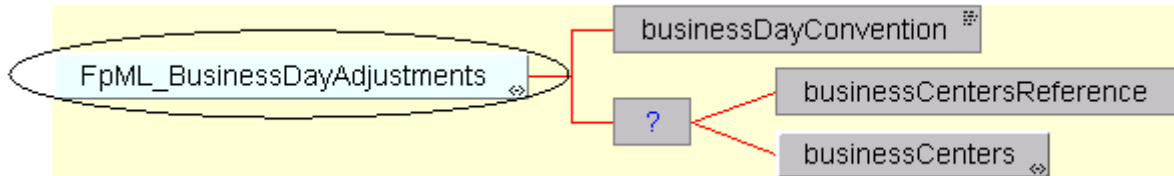
```
<!ENTITY % FpML_BusinessCenters "businessCenter+">
```

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.

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:

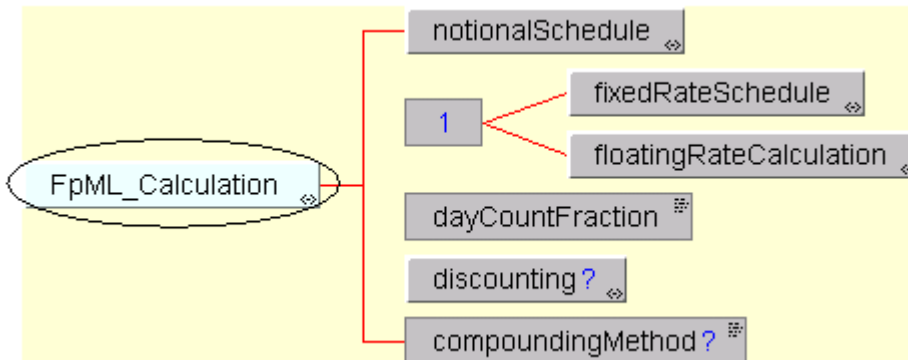
```
<!ENTITY % FpML_BusinessDayAdjustments "businessDayConvention ,  
(businessCentersReference | businessCenters)?">
```

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.

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:

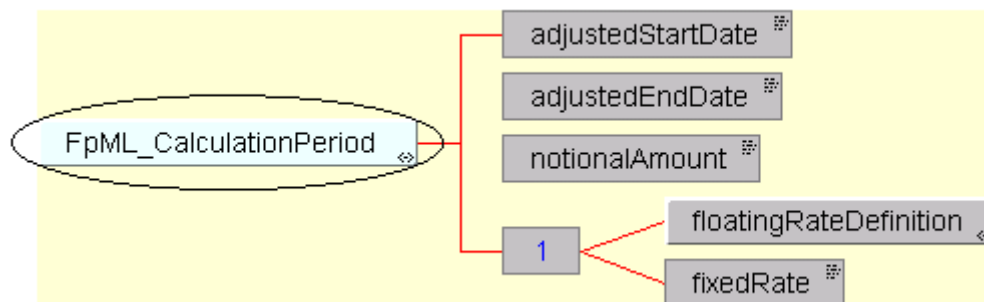
```
<!ENTITY % FpML_Calculation "notionalSchedule , (fixedRateSchedule |  
floatingRateCalculation) , dayCountFraction , discounting? ,  
compoundingMethod?">
```

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:

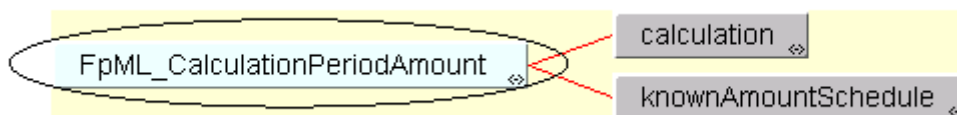
```
<!ENTITY % FpML_CalculationPeriod "adjustedStartDate , adjustedEndDate ,  
notionalAmount , (floatingRateDefinition | fixedRate)">
```

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.

Used by:

`calculationPeriodAmount`

DTD Fragment:

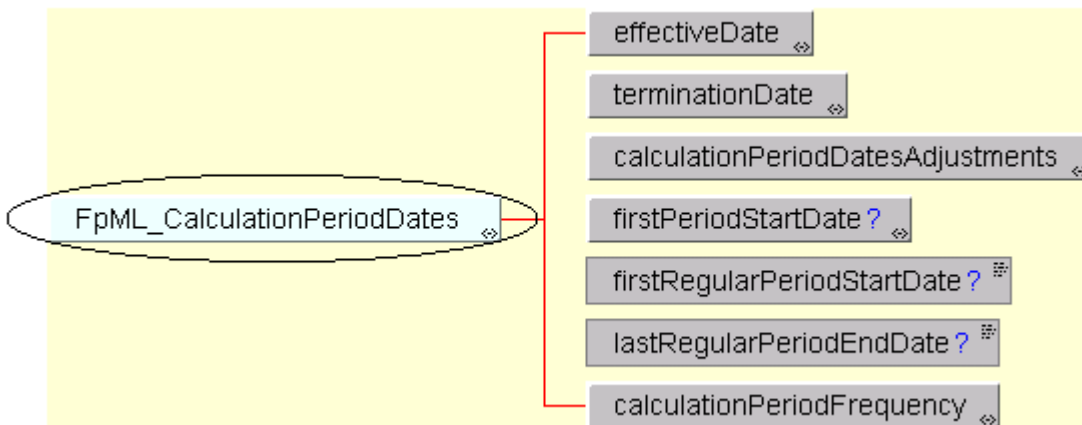
```
<!ENTITY % FpML_CalculationPeriodAmount "calculation | knownAmountSchedule">
```

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 periods 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.

Figure:



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.

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.

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.

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:

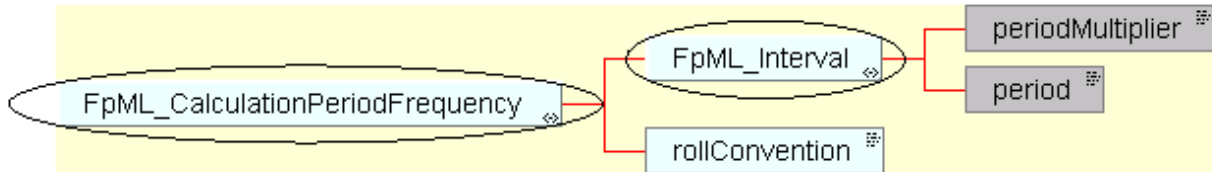
```
<!ENTITY % FpML_CalculationPeriodDates "effectiveDate , terminationDate ,  
calculationPeriodDatesAdjustments , firstPeriodStartDate? ,  
firstRegularPeriodStartDate? , lastRegularPeriodEndDate? ,  
calculationPeriodFrequency">
```

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:

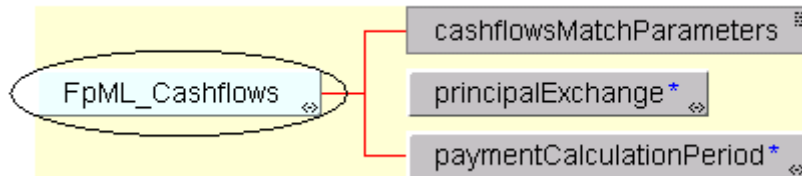
```
<!ENTITY % FpML_CalculationPeriodFrequency "%FpML_Interval; ,  
rollConvention">
```

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:

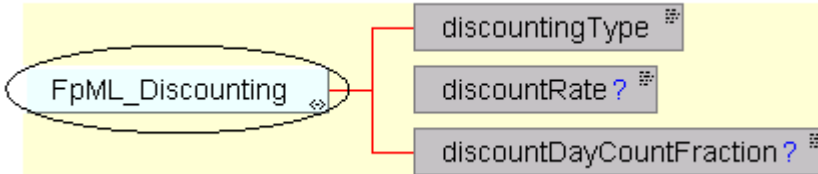
```
<!ENTITY % FpML_Cashflows "cashflowsMatchParameters , principalExchange* , paymentCalculationPeriod*">
```

FpML_Discounting

Description:

An entity for defining discounting information. The ISDA 1991 Definitions, Section 9.3-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.

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

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

Used by:

discounting

DTD Fragment:

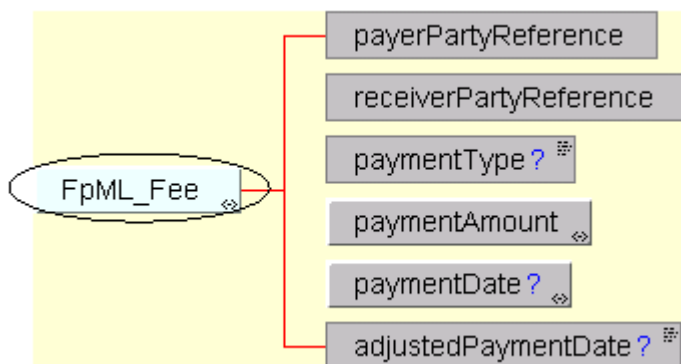
```
<!ENTITY % FpML_Discounting "discountingType , discountRate? ,  
discountDayCountFraction?">
```

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:

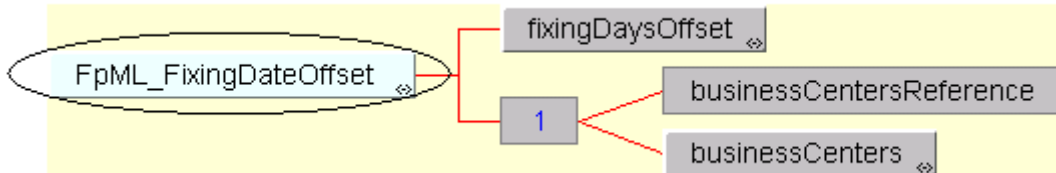
```
<!ENTITY % FpML_Fee "payerPartyReference , receiverPartyReference ,  
paymentType? , paymentAmount , paymentDate? , adjustedPaymentDate?">
```

FpML_FixingDateOffset

Description:

An entity for defining the fixing date relative to each reset date in terms of a business days offset and an associated set of financial business centers.

Figure:



Contents:

fixingDaysOffset (exactly one occurrence; contains the sub-element(s) defined by exactly one occurrence of the entity [FpML_Offset](#))

- The business days offset from the reset date that the relevant rate for that date is observed. The business day centers that apply are those defined explicitly by the businessCenters element or referenced implicitly by the businessCentersReference element. The day type associated with the offset must imply a business days offset.

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:

fixingDateOffset
fixingDates

DTD Fragment:

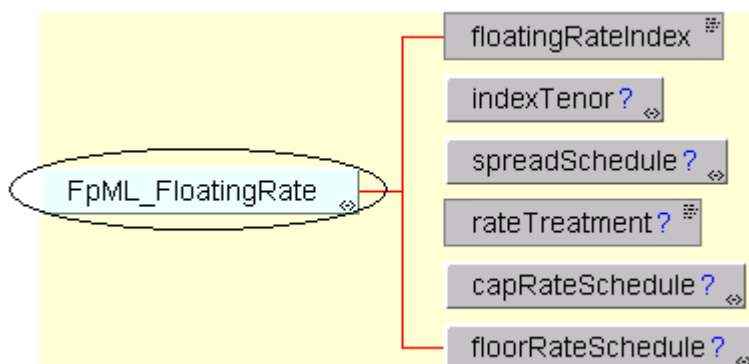
```
<!ENTITY % FpML_FixingDateOffset "fixingDaysOffset ,  
(businessCentersReference | businessCenters)">
```

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. 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 1998 Supplement to the 1991 ISDA Definitions, Section 7.4. General Definitions Relating to Floating Rate Options, paragraphs (e) and (f) 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 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 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:

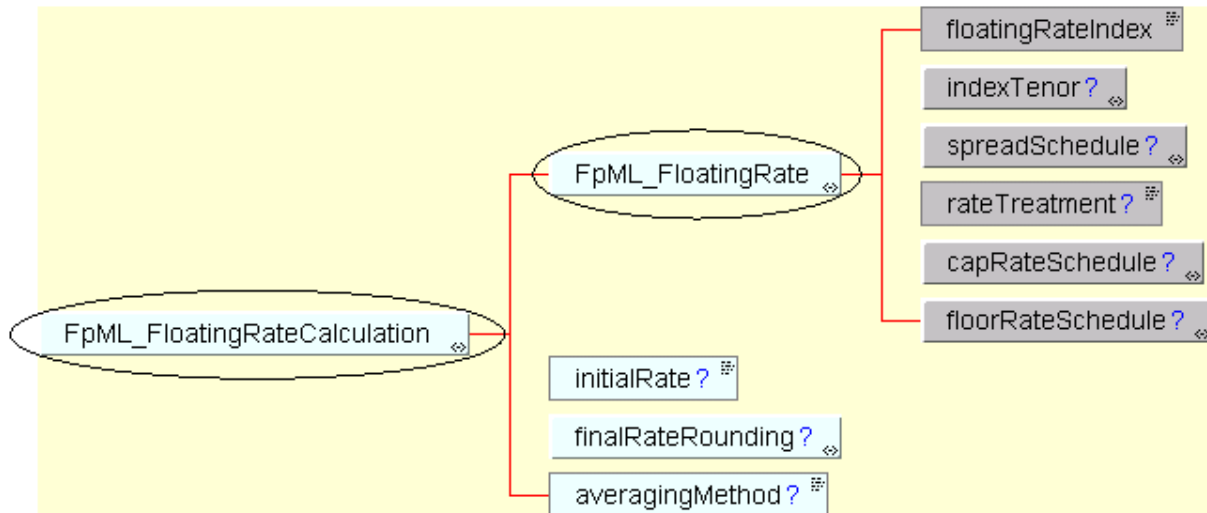
```
<!ENTITY % FpML_FloatingRate "floatingRateIndex , indexTenor? ,  
spreadSchedule? , rateTreatment? , capRateSchedule? , floorRateSchedule?">
```

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.

Used by:

floatingRateCalculation

DTD Fragment:

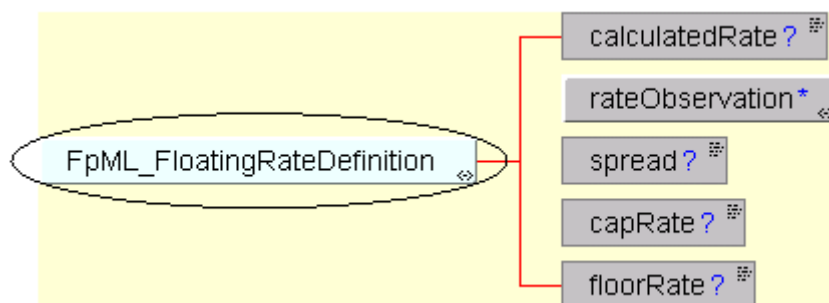
```
<!ENTITY % FpML_FloatingRateCalculation "(%FpML_FloatingRate; , initialRate?  
, finalRateRounding? , averagingMethod?)">
```

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 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 (exactly one occurrence; of type *decimal*)

- The floor rate, if any, which applies to the calculated rate for the calculation period. 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:

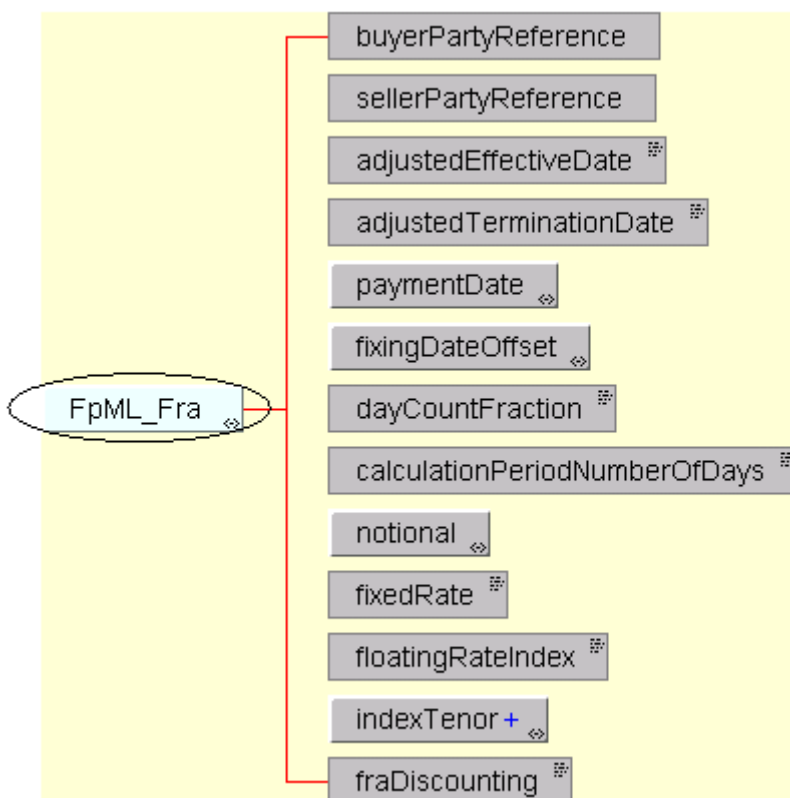
```
<!ENTITY % FpML_FloatingRateDefinition "calculatedRate? , rateObservation* ,  
spread? , capRate? , floorRate?">
```

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_FixingDateOffset](#))

- Specifies the fixing date as an offset relative to the reset date together with a set of financial business centers used in the date offset calculation.

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:

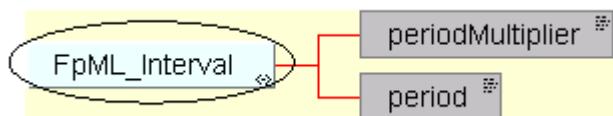
```
<!ENTITY % FpML_Fra "buyerPartyReference , sellerPartyReference ,  
adjustedEffectiveDate , adjustedTerminationDate , paymentDate ,  
fixingDateOffset , dayCountFraction , calculationPeriodNumberOfDays ,  
notional , fixedRate , floatingRateIndex , indexTenor+ , fraDiscounting">
```

FpML_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.

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

- A time period, e.g. a day, week, month or year.

Used by:

FpML_CalculationPeriodFrequency
FpML_Offset
FpML_ResetFrequency
frequency
indexTenor
paymentFrequency
stepFrequency

DTD Fragment:

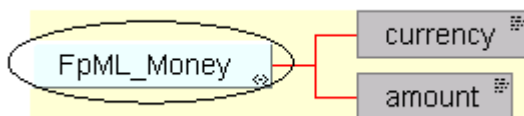
```
<!ENTITY % FpML_Interval "periodMultiplier , period">
```

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:

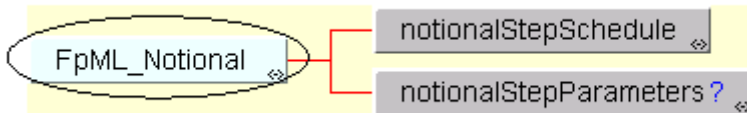
```
<!ENTITY % FpML_Money "currency , amount">
```

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.

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:

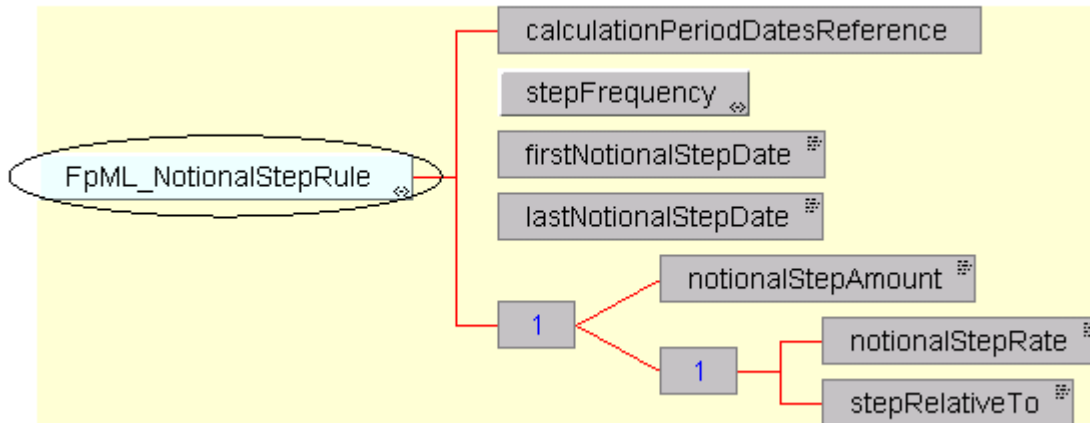
```
<!ENTITY % FpML_Notional "notionalStepSchedule , notionalStepParameters?">
```

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.

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

- The unadjusted calculation period end date of the last change in notional.

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:

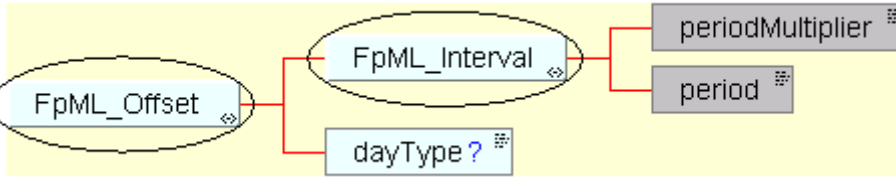
```
<!ENTITY % FpML_NotionalStepRule "calculationPeriodDatesReference ,
stepFrequency , firstNotionalStepDate , lastNotionalStepDate ,
(notionalStepAmount | (notionalStepRate , stepRelativeTo))">
```

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.

Used by:

fixingDaysOffset
paymentDaysOffset
rateCutOffDaysOffset

DTD Fragment:

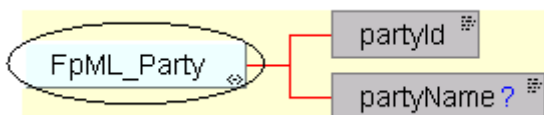
```
<!ENTITY % FpML_Offset "(%FpML_Interval; , dayType?)">
```

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:

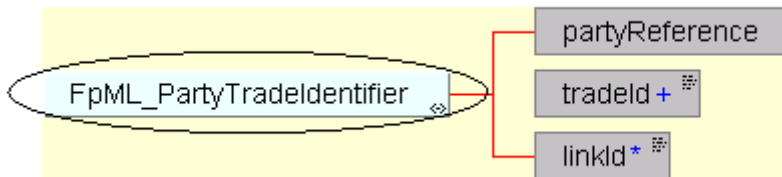
```
<!ENTITY % FpML_Party "partyId , partyName?">
```

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:

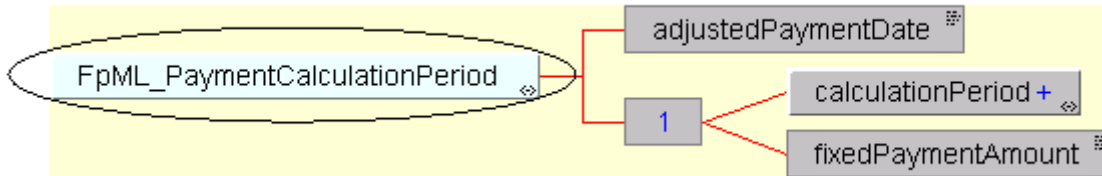
```
<!ENTITY % FpML_PartyTradeIdentifier "partyReference , tradeId+ , linkId*">
```

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:

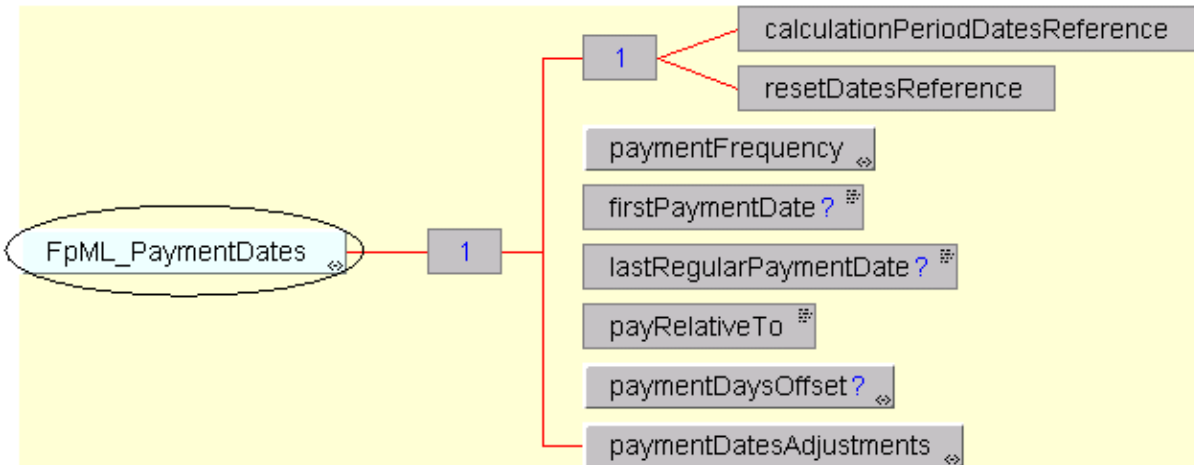
```
<!ENTITY % FpML_PaymentCalculationPeriod "adjustedPaymentDate ,  
(calculationPeriod+ | fixedPaymentAmount)">
```

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 date may be subject to adjustment in accordance with the specified payment dates adjustments. This element must only be included if there is an initial stub.

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

- The last regular unadjusted payment date. This date may be subject to adjustment in accordance with the specified payment dates adjustments. 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.

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

- Specifies whether the payments occur relative to each calculation period start date, calculation period end date or each reset date. The reset date is applicable in the case of certain 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.

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 |
```

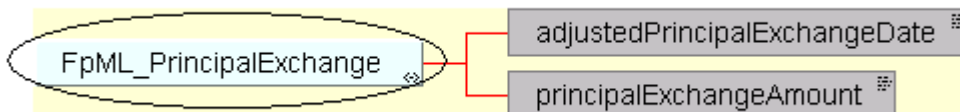
```
resetDatesReference) , paymentFrequency , firstPaymentDate? ,  
lastRegularPaymentDate? , payRelativeTo , paymentDaysOffset? ,  
paymentDatesAdjustments)">
```

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:

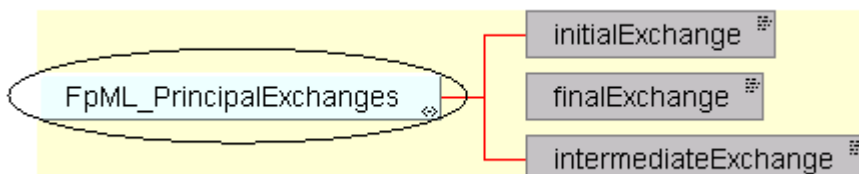
```
<!ENTITY % FpML_PrincipalExchange "adjustedPrincipalExchangeDate ,  
principalExchangeAmount">
```

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 exchanges of principal during the term of the swap.

Used by:

principalExchanges

DTD Fragment:

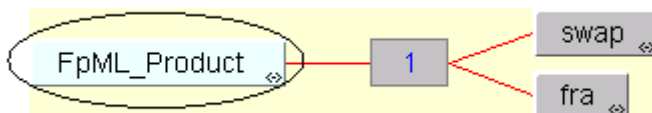
```
<!ENTITY % FpML_PrincipalExchanges "initialExchange , finalExchange ,  
intermediateExchange">
```

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:

FpML_Trade

DTD Fragment:

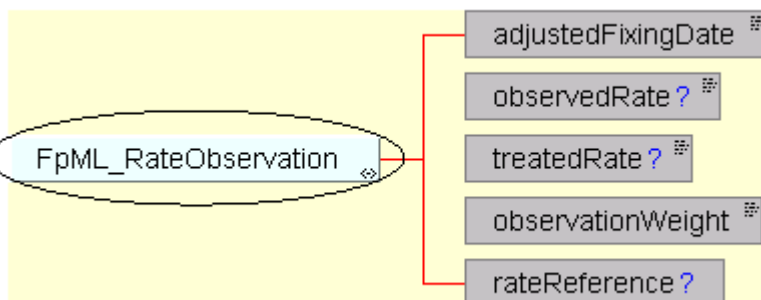
```
<!ENTITY % FpML_Product "(swap | fra)">
```

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:

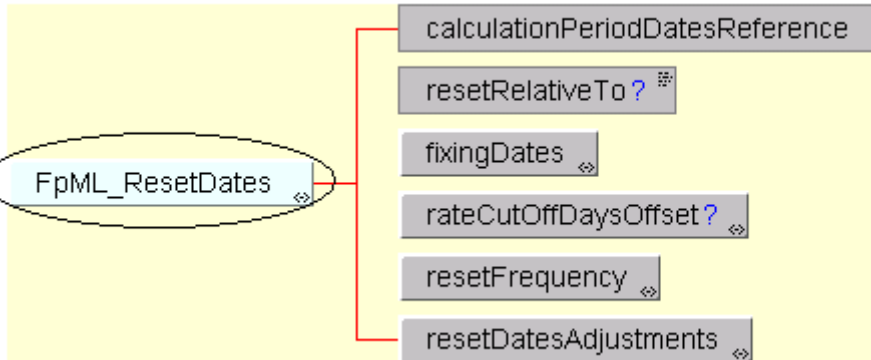
```
<!ENTITY % FpML_RateObservation "adjustedFixingDate , observedRate? ,  
treatedRate? , observationWeight , rateReference?">
```

FpML_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 calculation period start date or 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_FixingDateOffset](#))

- Specifies the fixing date relative to each reset date in terms of a business days offset and an associated set of financial business centers.

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 must be a negative integer. 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.

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:

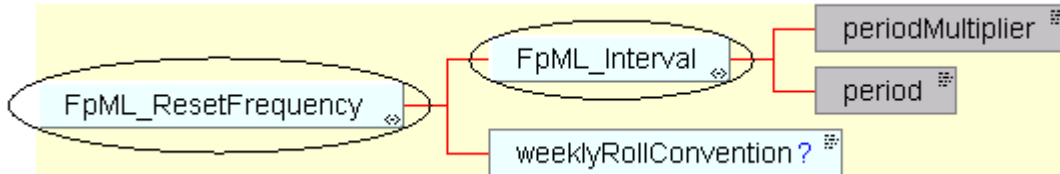
```
<!ENTITY % FpML_ResetDates "calculationPeriodDatesReference ,  
resetRelativeTo? , fixingDates , rateCutOffDaysOffset? , resetFrequency ,  
resetDatesAdjustments">
```

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.

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:

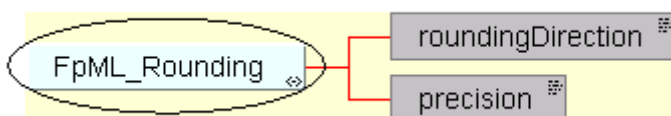
```
<!ENTITY % FpML_ResetFrequency "(%FpML_Interval; , weeklyRollConvention?)">
```

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:

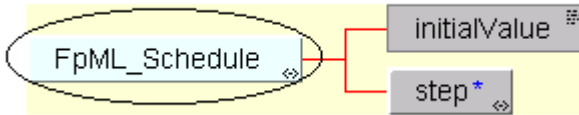
```
<!ENTITY % FpML_Rounding "roundingDirection , precision">
```

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:

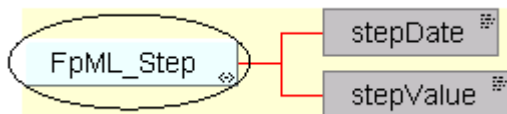
```
<!ENTITY % FpML_Schedule "initialValue , step*">
```

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 date 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:

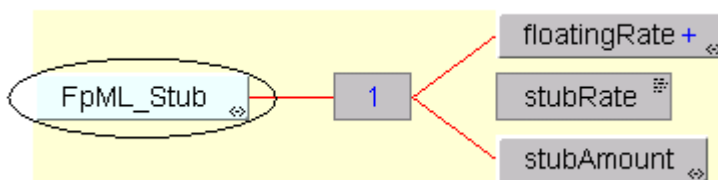
```
<!ENTITY % FpML_Step "stepDate , stepValue">
```

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 1991 ISDA Definitions, Section 9.2. 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:

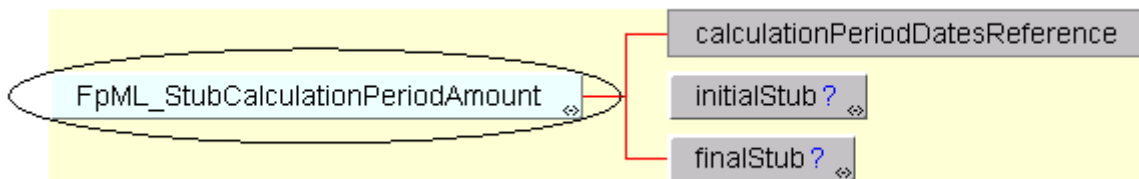
```
<!ENTITY % FpML_Stub "(floatingRate+ | stubRate | stubAmount)">
```

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:



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 ISDA definitions) 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 ISDA definitions) is assumed to apply. Alternatively, an actual known stub rate or stub amount may be specified.

Used by:

stubCalculationPeriodAmount

DTD Fragment:

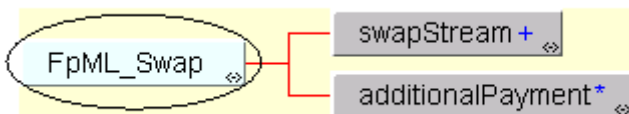
```
<!ENTITY % FpML_StubCalculationPeriodAmount "calculationPeriodDatesReference  
, initialStub? , finalStub?">
```

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_SwapStream](#))

- 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:

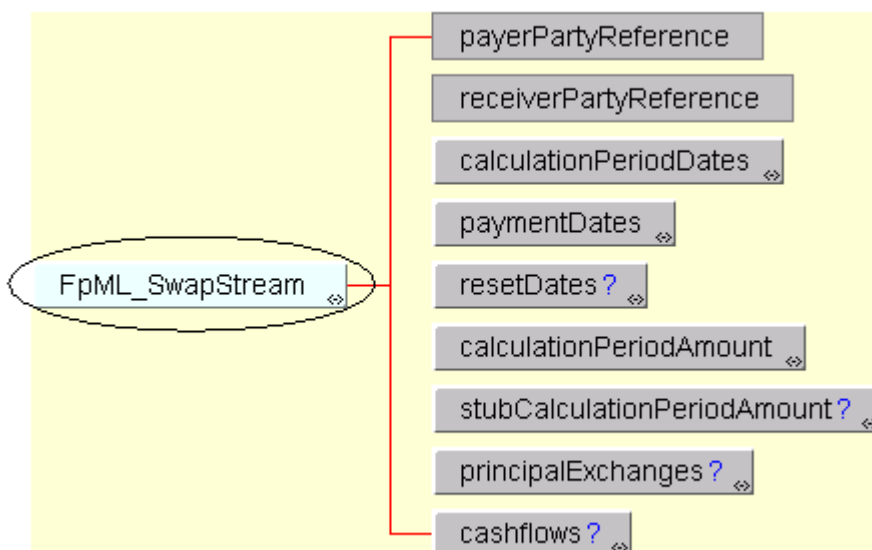
```
<!ENTITY % FpML_Swap "swapStream+ , additionalPayment*">
```

FpML_SwapStream

Description:

An entity for defining the components specifying a swap stream, including both a parametric and cashflows representation of a swap stream.

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:

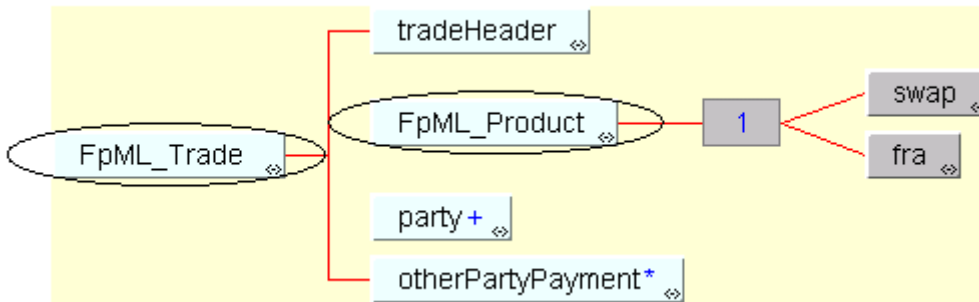
```
<!ENTITY % FpML_SwapStream "payerPartyReference , receiverPartyReference ,  
calculationPeriodDates , paymentDates , resetDates? , calculationPeriodAmount  
, stubCalculationPeriodAmount? , principalExchanges? , cashflows?">
```

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.

included element(s) (this entity includes the 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:

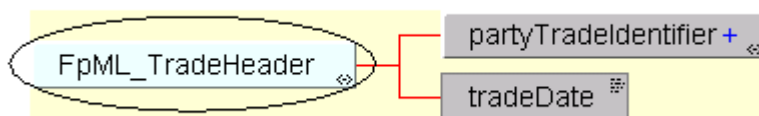
```
<!ENTITY % FpML_Trade "tradeHeader , (%FpML_Product;) , party+ ,  
otherPartyPayment*">
```

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.

Used by:

tradeHeader

DTD Fragment:

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

5 DOCUMENT TYPE DEFINITION (DTD)

5.1 fpml-dtd-1-0

```

<!-- uri://www.fpml.org/spec/2000/fpml-dtd-1-0-2000-06-01 -->

<!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?
                              , discountDayCountFraction?">

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

<!ENTITY % FpML_FixingDateOffset "fixingDaysOffset
                                  , (businessCentersReference
                                      | businessCenters )">

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

<!ENTITY % FpML_FloatingRateCalculation " (%FpML_FloatingRate;
                                           , initialRate?

```

```

, finalRateRounding?
, averagingMethod? )">

<!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_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_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_SwapStream "payerPartyReference
    , receiverPartyReference
    , calculationPeriodDates
    , paymentDates
    , resetDates?
    , calculationPeriodAmount
    , stubCalculationPeriodAmount?
    , principalExchanges?
    , cashflows? ">

<!ENTITY % FpML_Trade "tradeHeader
    , (%FpML_Product; )
    , party+
    , otherPartyPayment* ">

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

<!ELEMENT FpML (trade )>
<!ATTLIST FpML version (1-0) #REQUIRED
    averagingMethodSchemeDefault CDATA #IMPLIED
    businessCenterSchemeDefault CDATA #IMPLIED
    businessDayConventionSchemeDefault CDATA #IMPLIED
    compoundingMethodSchemeDefault CDATA #IMPLIED
    currencySchemeDefault CDATA #IMPLIED
    dayCountFractionSchemeDefault CDATA #IMPLIED
    dayTypeSchemeDefault CDATA #IMPLIED

```



```

discountingTypeSchemeDefault      CDATA #IMPLIED
floatingRateIndexSchemeDefault    CDATA #IMPLIED
linkIdSchemeDefault               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' >

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

<!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'
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 calculationPeriod (%FpML_CalculationPeriod; )>

```

```

<!ATTLIST calculationPeriod type NMTOKEN #FIXED 'CalculationPeriod' >

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

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

<!ELEMENT discountDayCountFraction (#PCDATA )>
<!ATTLIST discountDayCountFraction type NMTOKEN #FIXED 'string'
dayCountFractionScheme 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 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_FixingDateOffset; )>
<!ATTLIST fixingDateOffset type NMTOKEN #FIXED 'FixingDateOffset' >

<!ELEMENT fixingDates (%FpML_FixingDateOffset; )>
<!ATTLIST fixingDates type NMTOKEN #FIXED 'FixingDateOffset' >

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

<!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'
                linkIdScheme 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' >

<!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' >

<!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' >

<!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' >

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

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

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

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

<!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 #IMPLIED >

<!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' >

<!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_SwapStream; )>
<!ATTLIST swapStream type NMTOKEN #FIXED 'SwapStream' >

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

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

<!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'
                 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 >

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6 DATA DICTIONARY

6.1 Element Definitions

Element & Type / Description	Used By Entity
<p>additionalPayment ; entity type: FpML_Fee</p> <p>Additional payments between the principal parties involved in the swap.</p>	<p>FpML_Swap</p>
<p>adjustedEffectiveDate ; built-in datatype: date</p> <p>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.</p>	<p>FpML_Fra</p>
<p>adjustedEndDate ; built-in datatype: date</p> <p>The calculation period end date, adjusted according to any relevant business day convention.</p>	<p>FpML_CalculationPeriod</p>
<p>adjustedFixingDate ; built-in datatype: date</p> <p>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.</p>	<p>FpML_RateObservation</p>
<p>adjustedPaymentDate ; built-in datatype: date</p> <p>The adjusted payment date. This date should already be adjusted for any applicable business day convention.</p> <p>(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).</p>	<p>FpML_Fee FpML_PaymentCalculationPeriod</p>

<p>adjustedPrincipalExchangeDate ; built-in datatype: date</p> <p>The principal exchange date. This date should already be adjusted for any applicable business day convention.</p>	<p>FpML_PrincipalExchange</p>
<p>adjustedStartDate ; built-in datatype: date</p> <p>The calculation period start date, adjusted according to any relevant business day convention.</p>	<p>FpML_CalculationPeriod</p>
<p>AdjustedTerminationDate ; built-in datatype: date</p> <p>The end date of the calculation period. This date should already be adjusted for any applicable business day convention.</p>	<p>FpML_Fra</p>
<p>amount ; built-in datatype: decimal</p> <p>The monetary quantity in currency units.</p>	<p>FpML_Money</p>
<p>averagingMethod ; built-in datatype: string</p> <p>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.</p>	<p>FpML_FloatingRateCalculation</p>
<p>businessCenter ; built-in datatype: string</p> <p>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.</p>	<p>FpML_BusinessCenters</p>
<p>businessCenters ; entity type: FpML_BusinessCenters</p> <p>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.</p>	<p>FpML_BusinessDayAdjustments FpML_FixingDateOffset</p>

<p>BusinessCentersReference ; empty element</p> <p>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.</p>	<p>FpML_BusinessDayAdjustments FpML_FixingDateOffset</p>
<p>businessDayConvention ; built-in datatype: string</p> <p>The convention for adjusting a date if it would otherwise fall on a day that is not a business day.</p>	<p>FpML_BusinessDayAdjustments</p>
<p>buyerPartyReference ; empty element</p> <p>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.</p>	<p>FpML_Fra</p>
<p>calculatedRate ; built-in datatype: decimal</p> <p>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.</p>	<p>FpML_FloatingRateDefinition</p>
<p>calculation ; entity type: FpML_Calculation</p> <p>The parameters used in the calculation of fixed or floating rate calculation period amounts.</p>	<p>FpML_CalculationPeriodAmount</p>
<p>calculationPeriod ; entity type: FpML_CalculationPeriod</p> <p>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.</p>	<p>FpML_PaymentCalculationPeriod</p>

<p>calculationPeriodAmount ; entity type: FpML_CalculationPeriodAmount</p> <p>The calculation period amount parameters.</p>	<p>FpML_SwapStream</p>
<p>calculationPeriodDates ; entity type: FpML_CalculationPeriodDates</p> <p>The calculation periods dates schedule.</p>	<p>FpML_SwapStream</p>
<p>calculationPeriodDatesAdjustments ; entity type: FpML_BusinessDayAdjustments</p> <p>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.</p>	<p>FpML_CalculationPeriodDates</p>
<p>calculationPeriodDatesReference ; empty element</p> <p>A pointer style reference to the associated calculation period dates component defined elsewhere in the document.</p>	<p>FpML_NotionalStepRule FpML_PaymentDates FpML_ResetDates FpML_StubCalculationPeriodAmount</p>
<p>calculationPeriodfrequency ; entity type: FpML_CalculationPeriodFrequency</p> <p>The frequency at which calculation period end dates occur within the regular part of the calculation period schedule and their roll date convention.</p>	<p>FpML_CalculationPeriodDates</p>
<p>calculationPeriodNumberOfDays ; built-in datatype: positiveInteger</p> <p>The number of days from the adjusted effective date to the adjusted termination date calculated in accordance with the applicable day count fraction.</p>	<p>FpML_Fra</p>
<p>capRate ; built-in datatype: decimal</p> <p>The cap rate, if any, which applies to the floating rate for the calculation period. 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.</p>	<p>FpML_FloatingRateDefinition</p>

<p>capRateSchedule ; entity type: FpML_Schedule</p> <p>The cap rate or cap rate schedule, if any, which applies to the floating rate. 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.</p>	<p>FpML_FloatingRate</p>
<p>cashflows ; entity type: FpML_Cashflows</p> <p>The cashflows representation of the swap stream.</p>	<p>FpML_SwapStream</p>
<p>cashflowsMatchParameters ; built-in datatype: boolean</p> <p>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.</p>	<p>FpML_Cashflows</p>
<p>compoundingMethod ; built-in datatype: string</p> <p>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.</p>	<p>FpML_Calculation</p>
<p>currency ; built-in datatype: string</p> <p>The currency in which an amount is denominated.</p>	<p>FpML_AmountSchedule FpML_Money</p>
<p>dateAdjustments ; entity type: FpML_BusinessDayAdjustments</p> <p>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.</p>	<p>FpML_AdjustableDate</p>
<p>dayCountFraction ; built-in datatype:</p>	<p>FpML_Calculation</p>

<p>string</p> <p>The day count fraction.</p>	<p>FpML_Fra</p>
<p>dayType ; built-in datatype: string</p> <p>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.</p>	<p>FpML_Offset</p>
<p>discountDayCountFraction ; built-in datatype: string</p> <p>A discount day count fraction to be used in the calculation of a discounted amount.</p>	<p>FpML_Discounting</p>
<p>discounting ; entity type: FpML_Discounting</p> <p>The parameters specifying any discounting conventions that may apply. This element must only be included if discounting applies.</p>	<p>FpML_Calculation</p>
<p>discountingType ; built-in datatype: string</p> <p>The discounting method that is applicable.</p>	<p>FpML_Discounting</p>
<p>discountRate ; built-in datatype: decimal</p> <p>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.</p>	<p>FpML_Discounting</p>
<p>effectiveDate ; entity type: FpML_AdjustableDate</p> <p>The first day of the term of the trade. This day may be subject to adjustment in accordance with a business day convention.</p>	<p>FpML_CalculationPeriodDates</p>

<p>finalExchange ; built-in datatype: boolean</p> <p>A true/false flag to indicate whether there is a final exchange of principal on the termination date.</p>	<p>FpML_PrincipalExchanges</p>
<p>finalRateRounding ; entity type: FpML_Rounding</p> <p>The rounding convention to apply to the final rate used in determination of a calculation period amount.</p>	<p>FpML_FloatingRateCalculation</p>
<p>finalStub ; entity type: FpML_Stub</p> <p>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 ISDA definitions) is assumed to apply. Alternatively, an actual known stub rate or stub amount may be specified.</p>	<p>FpML_StubCalculationPeriodAmount</p>
<p>firstNotionalStepDate ; built-in datatype: date</p> <p>The unadjusted calculation period start date of the first change in notional.</p>	<p>FpML_NotionalStepRule</p>
<p>firstPaymentDate ; built-in datatype: date</p> <p>The first unadjusted payment date. This date may be subject to adjustment in accordance with the specified payment dates adjustments. This element must only be included if there is an initial stub.</p>	<p>FpML_PaymentDates</p>
<p>firstPeriodStartDate ; entity type: FpML_AdjustableDate</p> <p>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.</p>	<p>FpML_CalculationPeriodDates</p>

<p>firstRegularPeriodStartDate ; built-in datatype: date</p> <p>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.</p>	<p>FpML_CalculationPeriodDates</p>
<p>fixedPaymentAmount ; built-in datatype: decimal</p> <p>A known fixed payment amount.</p>	<p>FpML_PaymentCalculationPeriod</p>
<p>fixedRate ; built-in datatype: decimal</p> <p>The calculation period fixed rate. A per annum rate, expressed as a decimal. A fixed rate of 5% would be represented as 0.05.</p>	<p>FpML_CalculationPeriod FpML_Fra</p>
<p>fixedRateSchedule ; entity type: FpML_Schedule</p> <p>The fixed rate or fixed rate schedule.</p>	<p>FpML_Calculation</p>
<p>fixingDateOffset ; entity type: FpML_FixingDateOffset</p> <p>Specifies the fixing date as an offset relative to the reset date together with a set of financial business centers used in the date offset calculation.</p>	<p>FpML_Fra</p>
<p>fixingDates ; entity type: FpML_FixingDateOffset</p> <p>Specifies the fixing date relative to each reset date in terms of a business days offset and an associated set of financial business centers.</p>	<p>FpML_ResetDates</p>
<p>fixingDaysOffset ; entity type: FpML_Offset</p> <p>The business days offset from the reset date that the relevant rate for that date is observed. The business day centers that apply are those defined explicitly by the businessCenters element or referenced implicitly by the businessCentersReference element. The day type associated with the offset must imply a business days</p>	<p>FpML_FixingDateOffset</p>

offset.	
<p>floatingRate ; entity type: FpML_FloatingRate</p> <p>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.</p>	FpML_Stub
<p>floatingRateCalculation ; entity type: FpML_FloatingRateCalculation</p> <p>The floating rate calculation definitions.</p>	FpML_Calculation
<p>floatingRateDefinition ; entity type: FpML_FloatingRateDefinition</p> <p>The floating rate reset information for the calculation period.</p>	FpML_CalculationPeriod
<p>floatingRateIndex ; built-in datatype: string</p> <p>The ISDA Floating Rate Option, i.e. the floating rate index.</p>	FpML_FloatingRate FpML_Fra
<p>floorRate ; built-in datatype: decimal</p> <p>The floor rate, if any, which applies to the floating rate for the calculation period. The floor rate is assumed to</p>	FpML_FloatingRateDefinition

<p>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.</p>	
<p>floorRateSchedule ; entity type: FpML_Schedule</p> <p>The floor rate or floor rate schedule, if any, which applies to the floating rate. 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.</p>	<p>FpML_FloatingRate</p>
<p>fra ; entity type: FpML_Fra</p> <p>A forward rate agreement product definition.</p>	<p>FpML_Product</p>
<p>fraDiscounting ; built-in datatype: boolean</p> <p>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.</p>	<p>FpML_Fra</p>
<p>indexTenor ; entity type: FpML_Interval</p> <p>The ISDA Designated Maturity, i.e. the tenor of the floating rate.</p> <p>(FpML_Fra Usage) If linear interpolation of two floating rate tenors is applicable then two index tenors must be specified.</p>	<p>FpML_FloatingRate FpML_Fra</p>
<p>initialExchange ; built-in datatype: boolean</p> <p>A true/false flag to indicate whether there is an initial exchange of principal on the effective date.</p>	<p>FpML_PrincipalExchanges</p>
<p>initialRate ; built-in datatype: decimal</p> <p>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</p>	<p>FpML_FloatingRateCalculation</p>

<p>implied by the floating rate index. An initial rate of 5% would be represented as 0.05.</p>	
<p>initialStub ; entity type: FpML_Stub</p> <p>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 ISDA definitions) is assumed to apply. Alternatively, an actual known stub rate or stub amount may be specified.</p>	<p>FpML_StubCalculationPeriodAmount</p>
<p>initialValue ; built-in datatype: decimal</p> <p>The initial rate or amount, as the case may be. An initial rate of 5% would be represented as 0.05.</p>	<p>FpML_Schedule</p>
<p>intermediateExchange ; built-in datatype: boolean</p> <p>A true/false flag to indicate whether there are intermediate exchanges of principal during the term of the swap.</p>	<p>FpML_PrincipalExchanges</p>
<p>knownAmountSchedule ; entity type: FpML_AmountSchedule</p> <p>The known calculation period amount or a known amount schedule.</p>	<p>FpML_CalculationPeriodAmount</p>
<p>lastNotionalStepDate ; built-in datatype: date</p> <p>The unadjusted calculation period end date of the last change in notional.</p>	<p>FpML_NotionalStepRule</p>
<p>lastRegularPaymentDate ; built-in datatype: date</p> <p>The last regular unadjusted payment date. This date may be subject to adjustment in accordance with the specified payment dates adjustments. This element must only be included if there is a final stub. All calculation periods after this date contribute to the final payment.</p>	<p>FpML_PaymentDates</p>

<p>The final payment is made relative to the final set of calculation periods or the final reset date as the case may be.</p>	
<p>lastRegularPeriodEndDate ; built-in datatype: date</p> <p>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.</p>	<p>FpML_CalculationPeriodDates</p>
<p>linkId ; built-in datatype: string</p> <p>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.</p>	<p>FpML_PartyTradeIdentifier</p>
<p>notional ; entity type: FpML_Money</p> <p>The notional amount.</p>	<p>FpML_Fra</p>
<p>notionalAmount ; built-in datatype: decimal</p> <p>The calculation period notional amount.</p>	<p>FpML_CalculationPeriod</p>
<p>notionalSchedule ; entity type: FpML_Notional</p> <p>The notional amount or notional amount schedule.</p>	<p>FpML_Calculation</p>
<p>notionalStepAmount ; built-in datatype: decimal</p> <p>The explicit amount that the notional changes on each step date. This can be a positive or negative amount.</p>	<p>FpML_NotionalStepRule</p>
<p>notionalStepParameters ; entity type: FpML_NotionalStepRule</p> <p>A parametric representation of the notional step</p>	<p>FpML_Notional</p>

<p>schedule, i.e. parameters used to generate the notional schedule.</p>	
<p>notionalStepRate ; built-in datatype: decimal</p> <p>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.</p>	<p>FpML_NotionalStepRule</p>
<p>notionalStepSchedule ; entity type: FpML_AmountSchedule</p> <p>The notional amount or notional amount schedule expressed as explicit outstanding notional amounts and dates.</p>	<p>FpML_Notional</p>
<p>observationWeight ; built-in datatype: positiveInteger</p> <p>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.</p>	<p>FpML_RateObservation</p>
<p>observedRate ; built-in datatype: decimal</p> <p>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.</p>	<p>FpML_RateObservation</p>
<p>otherPartyPayment ; entity type: FpML_Fee</p> <p>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.</p>	<p>FpML_Trade</p>
<p>party ; entity type: FpML_Party</p>	<p>FpML_Trade</p>

<p>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.</p>	
<p>partyId ; built-in datatype: string</p> <p>A party identifier, e.g. a S.W.I.F.T. bank identifier code (BIC).</p>	<p>FpML_Party</p>
<p>partyName ; built-in datatype: string</p> <p>The name of the party. A free format string. FpML does not define usage rules for this element.</p>	<p>FpML_Party</p>
<p>partyReference ; empty element</p> <p>A pointer style reference to a party identifier defined elsewhere in the document. The party referenced has allocated the trade identifier.</p>	<p>FpML_PartyTradeIdentifier</p>
<p>partyTradeIdentifier ; entity type: FpML_PartyTradeIdentifier</p> <p>The trade reference identifier(s) allocated to the trade by the parties involved.</p>	<p>FpML_TradeHeader</p>
<p>payerPartyReference ; empty element</p> <p>A pointer style reference to a party identifier defined elsewhere in the document.</p> <p>(FpML_Fee Usage) The party referenced is the payer of the fee.</p> <p>(FpML_SwapStream Usage) The party referenced is the payer of stream payments.</p>	<p>FpML_Fee FpML_SwapStream</p>
<p>paymentAmount ; entity type: FpML_Money</p> <p>The currency amount of the payment.</p>	<p>FpML_Fee</p>
<p>paymentCalculationPeriod ; entity type:</p>	<p>FpML_Cashflows</p>

<p>FpML_PaymentCalculationPeriod</p> <p>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.</p>	
<p>paymentDate ; entity type: FpML_AdjustableDate</p> <p>The payment date. This date is subject to adjustment in accordance with any applicable business day convention.</p> <p>(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</p>	<p>FpML_Fee FpML_Fra</p>
<p>paymentDates ; entity type: FpML_PaymentDates</p> <p>The payment dates schedule.</p>	<p>FpML_SwapStream</p>
<p>paymentDatesAdjustments ; entity type: FpML_BusinessDayAdjustments</p> <p>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.</p>	<p>FpML_PaymentDates</p>
<p>paymentDaysOffset ; entity type: FpML_Offset</p> <p>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.</p>	<p>FpML_PaymentDates</p>

<p>paymentFrequency ; entity type: FpML_Interval</p> <p>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.</p>	<p>FpML_PaymentDates</p>
<p>paymentType ; built-in datatype: string</p> <p>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.</p>	<p>FpML_Fee</p>
<p>payRelativeTo ; built-in datatype: string</p> <p>Specifies whether the payments occur relative to each calculation period start date, calculation period end date or each reset date. The reset date is applicable in the case of certain 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.</p>	<p>FpML_PaymentDates</p>
<p>period ; built-in datatype: string</p> <p>A time period, e.g. a day, week, month or year.</p>	<p>FpML_Interval</p>
<p>periodMultiplier ; built-in datatype: integer</p> <p>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.</p>	<p>FpML_Interval</p>
<p>precision ; built-in datatype: nonNegativeInteger</p>	<p>FpML_Rounding</p>

<p>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).</p>	
<p>principalExchange ; entity type: FpML_PrincipalExchange</p> <p>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.</p>	<p>FpML_Cashflows</p>
<p>principalExchangeAmount ; built-in datatype: decimal</p> <p>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.</p>	<p>FpML_PrincipalExchange</p>
<p>principalExchanges ; entity type: FpML_PrincipalExchanges</p> <p>The true/false flags indicating whether initial, intermediate or final exchanges of principal should occur.</p>	<p>FpML_SwapStream</p>
<p>rateCutOffDaysOffset ; entity type: FpML_Offset</p> <p>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. 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</p>	<p>FpML_ResetDates</p>

<p>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.</p>	
<p>rateObservation ; entity type: FpML_RateObservation</p> <p>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.</p>	<p>FpML_FloatingRateDefinition</p>
<p>rateReference ; empty element</p> <p>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.</p>	<p>FpML_RateObservation</p>
<p>rateTreatment ; built-in datatype: string</p> <p>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 1998 Supplement to the 1991 ISDA Definitions, Section 7.4. General Definitions Relating to Floating Rate Options, paragraphs (e) and (f) for definitions of these terms.</p>	<p>FpML_FloatingRate</p>
<p>receiverPartyReference ; empty element</p>	<p>FpML_Fee</p>

<p>A pointer style reference to a party identifier defined elsewhere in the document.</p> <p>(FpML_Fee Usage) The party referenced is the receiver of the fee.</p> <p>(FpML_SwapStream Usage) The party referenced is the receiver of stream payments.</p>	<p>FpML_SwapStream</p>
<p>resetDates ; entity type: FpML_ResetDates</p> <p>The reset dates schedule. The reset dates schedule only applies for a floating rate stream.</p>	<p>FpML_SwapStream</p>
<p>resetDatesAdjustments ; entity type: FpML_BusinessDayAdjustments</p> <p>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.</p>	<p>FpML_ResetDates</p>
<p>resetDatesReference ; empty element</p> <p>A pointer style reference to the associated reset dates component defined elsewhere in the document.</p>	<p>FpML_PaymentDates</p>
<p>resetFrequency ; entity type: FpML_ResetFrequency</p> <p>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.</p>	<p>FpML_ResetDates</p>
<p>resetRelativeTo ; built-in datatype: string</p> <p>Specifies whether the reset dates are determined with respect to each calculation period start date or calculation period end date. If the reset frequency is specified as daily this element must not be included.</p>	<p>FpML_ResetDates</p>
<p>rollConvention ; built-in datatype: string</p> <p>Used in conjunction with a frequency and the regular</p>	<p>FpML_CalculationPeriodFrequency</p>

<p>period start date of a calculation period, determines each calculation period end date within the regular part of a calculation period schedule.</p>	
<p>roundingDirection ; built-in datatype: string Specifies the rounding direction.</p>	<p>FpML_Rounding</p>
<p>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.</p>	<p>FpML_Fra</p>
<p>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.</p>	<p>FpML_FloatingRateDefinition</p>
<p>spreadSchedule ; entity type: FpML_Schedule The ISDA Spread or a Spread schedule. 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.</p>	<p>FpML_FloatingRate</p>
<p>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.</p>	<p>FpML_Schedule</p>
<p>stepDate ; built-in datatype: date</p>	<p>FpML_Step</p>

<p>The date on which the associated stepValue becomes effective. This date may be subject to adjustment in accordance with a business day convention.</p>	
<p>stepFrequency ; entity type: FpML_Interval</p> <p>The frequency at which the step changes occur. This frequency must be a multiple of the stream calculation period frequency.</p>	<p>FpML_NotionalStepRule</p>
<p>stepRelativeTo ; built-in datatype: string</p> <p>Specifies whether the notionalStepRate should be applied to the initial notional or the previous notional in order to calculate the notional step change amount.</p>	<p>FpML_NotionalStepRule</p>
<p>stepValue ; built-in datatype: decimal</p> <p>The rate or amount which becomes effective on the associated stepDate. A rate of 5% would be represented as 0.05.</p>	<p>FpML_Step</p>
<p>stubAmount ; entity type: FpML_Money</p> <p>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.</p>	<p>FpML_Stub</p>
<p>stubCalculationPeriodAmount ; entity type: FpML_StubCalculationPeriodAmount</p> <p>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.</p>	<p>FpML_SwapStream</p>
<p>stubRate ; built-in datatype: decimal</p>	<p>FpML_Stub</p>

<p>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.</p>	
<p>swap ; entity type: FpML_Swap</p> <p>A swap product definition.</p>	<p>FpML_Product</p>
<p>swapStream ; entity type: FpML_SwapStream</p> <p>The swap streams.</p>	<p>FpML_Swap</p>
<p>terminationDate ; entity type: FpML_AdjustableDate</p> <p>The last day of the term of the trade. This day may be subject to adjustment in accordance with a business day convention.</p>	<p>FpML_CalculationPeriodDates</p>
<p>trade ; entity type: FpML_Trade</p> <p>The FpML trade definition.</p>	<p>FpML</p>
<p>tradeDate ; built-in datatype: date</p> <p>The trade date.</p>	<p>FpML_TradeHeader</p>
<p>tradeHeader ; entity type: FpML_TradeHeader</p> <p>The information on the trade which is not product specific, e.g. trade date.</p>	<p>FpML_Trade</p>
<p>tradeId ; built-in datatype: string</p> <p>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.</p>	<p>FpML_PartyTradeIdentifier</p>

<p>TreatedRate ; built-in datatype: decimal</p> <p>The observed rate after any required rate treatment is applied. A treated rate of 5% would be represented as 0.05.</p>	<p>FpML_RateObservation</p>
<p>UnadjustedDate ; built-in datatype: date</p> <p>A date subject to adjustment.</p>	<p>FpML_AdjustableDate</p>
<p>WeeklyRollConvention ; built-in datatype: string</p> <p>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.</p>	<p>FpML_ResetFrequency</p>

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 Working Draft 07 April 2000. This draft is currently in Last Call. The built-in datatypes are described at:

<http://www.w3.org/TR/2000/WD-xmlschema-2-20000407/#built-in-datatypes>

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

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

Additional constraints are imposed by FpML on a number of these these built-in datatypes. These constraints are defined below:

8.1.1 boolean

All elements of type `boolean` in FpML must contain the value `true` or `false`.

8.1.2 date

All elements of type `date` in FpML must contain date values with the format YYYY-MM-DD. For example, 25 May 2000 would be represented in FpML as 2000-05-25.

8.1.3 decimal

All elements of type `decimal` in FpML must use a lexical representation where the optional leading sign must only be included when representing a negative decimal, i.e. a leading "+" sign is not permitted. When the sign is omitted, "+" is assumed.

For example: -1000, 1000.00, 0.1234 are legal literals for an FpML `decimal`.

8.1.4 integer

All elements of type `integer` in FpML must use a lexical representation where the optional leading sign must only be included when representing a negative integer, i.e. a leading "+" sign is not permitted. When the sign is omitted, "+" is assumed.

For example: -1, 0, 1 and 1234 are legal literals for an FpML `integer`.

8.1.5 `nonNegativeInteger`

All elements of type `nonNegativeInteger` in FpML must use a lexical representation where the optional leading "+" sign must not be included. When the sign is omitted, "+" is assumed.

For example: 0, 1 and 1234 are legal literals for an FpML `nonNegativeInteger`.

8.1.6 `positiveInteger`

All elements of type `positiveInteger` in FpML must use a lexical representation where the optional leading "+" sign must not be included. When the sign is omitted, "+" is assumed.

For example: 1 and 1234 are legal literals for an FpML `positiveInteger`.

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 of little use 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
- An external coding scheme, which does not have a well known URI
- An FpML-defined coding scheme.

In this section, the FpML-controlled schemes and their associated URIs are defined, as well as external coding schemes which do not have well known URIs and are therefore given an FpML-defined URI. The URI construction follows the Architecture Working Group recommendations.

Note that FpML does not define a coding scheme or URI for the following schemes:

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

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

8.2.2 Averaging Method Scheme (`averagingMethodScheme`)

Definition

The method of calculation to be used when averaging rates.

URI

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

Coding Scheme

Code	Defn Source	Meaning
Unweighted	ISDA	The arithmetic mean of the relevant rates for each reset date.
Weighted	ISDA	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/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	Defn Source	Meaning
ATVI	N/A	Vienna
AUSY	N/A	Sydney
BEBR	N/A	Brussels
CAMO	N/A	Montreal
CATO	N/A	Toronto
CHGE	N/A	Geneva
CHZU	N/A	Zürich
DEFR	N/A	Frankfurt
DKCO	N/A	Copenhagen
ESMA	N/A	Madrid
EUTA	N/A	TARGET (Euro 'Business Center')
FIHE	N/A	Helsinki
FRPA	N/A	Paris
GBLO	N/A	London
HKHK	N/A	Hong Kong
ITMI	N/A	Milan
ITRO	N/A	Rome
JPTO	N/A	Tokyo

LULU	N/A	Luxembourg
NLAM	N/A	Amsterdam
NOOS	N/A	Oslo
NZAU	N/A	Auckland
NZWE	N/A	Wellington
SEST	N/A	Stockholm
USCH	N/A	Chicago
USLA	N/A	Los Angeles
USNY	N/A	New York

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/business-day-convention-1-0>

Coding Scheme

Code	Defn Source	Meaning
FOLLOWING	ISDA	The non-business date will be adjusted to the first following day that is a business day.
FRN	ISDA	'FRN Convention' or 'Eurodollar Convention' means, in respect of either Payment Dates (ISDA term) or Period End Dates (ISDA term) 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 (ISDA term) 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 (ISDA term) 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	ISDA	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	ISDA	The non-business date will be adjusted to the first preceding day that is a business day
MODPRECEDING	FpML	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	N/A	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.

URI

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

Coding Scheme

Code	Defn Source	Meaning
Flat	ISDA	Flat compounding. Per ISDA 1991 Definitions, Section 6.3. Certain Definitions Relating to Compounding.
None	N/A	No compounding is to be applied.
Straight	ISDA	Straight compounding. Per ISDA 1991 Definitions, Section 6.3. Certain Definitions Relating to 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 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 Francaise de Banques) term is Calculation Basis.

URI

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

Coding Scheme

Code	Defn Source	Meaning
ACT/365.HIST	ISDA (1991 & 2000 Draft Definitions - 'Historical' tag is new in 2000 definitions)	'Actual/365', 'Act/365', 'Actual/Actual (Historical)' or 'Act/Act (Historical)'. The actual number of days in the Calculation Period (ISDA term) or Compounding Period (ISDA term) 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	ISDA (2000 Draft Definitions)	'Actual/Actual (ISMA)' or 'Act/Act (ISMA)' (i) if the Final Day of the Calculation Period in respect of which payment is being made falls on or before the Measuring Date, the actual number of days in that Calculation Period divided by the product of the actual number of days in the Notional Calculation Period in which the first day of that Calculation Period falls and the number of Regular Period End Dates in any year; or (ii) if the Final Day of the Calculation Period in respect of which payment is being made falls after the Measuring Date, the sum of (A) the actual number of days in that Calculation Period falling in the Notional Calculation Period in which the first day of that Calculation Period falls divided by the product of the actual number of days in that Notional Calculation Period and the number of Regular Period End Dates in any year and (B) the actual number of days in that Calculation Period falling in the subsequent Notional Calculation Period divided by the product of the actual number of days in that subsequent Notional Calculation Period and the number of Regular Period End Dates in any year, where: "Notional Calculation Period" means, in respect of a Swap

Code	Defn Source	Meaning
		<p>Transaction and the calculation of a Fixed Amount, the period from, and including, a day falling on a calendar day which is a Regular Period End Day to, but excluding, the next following day falling on a calendar day which is a Regular Period End Day;</p> <p>"Measuring Date" means, in respect of a Swap Transaction and the calculation of a Fixed Amount, the first day after the first day of the Calculation Period in respect of which payment is being made that falls on a calendar day which is a Regular Period End Day;</p> <p>"Regular Period End Day" means, in respect of a Swap Transaction and the calculation of a Fixed Amount, each calendar day (irrespective of the year) in respect of which there exists a Regular Period End Date falling on such day;</p> <p>"Regular Period End Date" means, in respect of a Swap Transaction and the calculation of a Fixed Amount, each day that is a Period End Date except for the Termination Date, if applicable; and</p> <p>"Final Day" means, in respect of a Calculation Period, the Period End Date or Termination Date to which the Calculation Period runs but does not include.</p>
ACT/ACT.AFB	ISDA (2000 Draft Definitions)	<p>'Actual/Actual (AFB)' or 'Act/Act (AFB)'.</p> <p>(i) if the Calculation Period or Compounding Period in respect of which payment is being made is shorter than or equal to one year, the actual number of days in the Calculation Period or Compounding Period divided by 365 (or, if any portion of the Calculation Period or Compounding Period includes 29 February, the actual number of days in the Calculation Period or Compounding Period divided by 366); or</p> <p>(ii) if the Calculation Period or Compounding Period in respect of which payment is being made is longer than one year, the sum of one and the actual number of days in the Remainder Period divided by 365 (or, if any portion of the Remainder Period includes 29 February, the actual number of days in the Remainder Period divided by 366),</p> <p>where:</p> <p>"Remainder Period" means, in respect of [a Swap Transaction and] the calculation of a Day Count Fraction for which [Actual/Actual (AFB) has been specified and for which] the Calculation Period or Compounding Period in respect of which payment is being made is longer than one year, the period from, and including, the first day of the Calculation Period or Compounding Period to, but excluding, the day which is exactly one year earlier than the Final Day of the Calculation Period or Compounding Period (or, if the Final Day of the Calculation Period or Compounding Period is 29 February, the</p>

Code	Defn Source	Meaning
		<p>period from, and including, the first day of the Calculation Period or Compounding Period to, but excluding, the next occurring 1 March); and</p> <p>"Final Day" means, in respect of a Calculation Period or Compounding Period, the Period End Date, Compounding Date or Termination Date to which the Calculation Period or Compounding Period runs but does not include.</p>
ACT/365.FIXED	ISDA (1991 & 2000 Draft Definitions)	<p>'Actual/365 (Fixed)' or 'Act/365 (Fixed)'.</p> <p>The actual number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by 365.</p>
ACT/360	ISDA (1991 & 2000 Draft Definitions)	<p>'Actual/360' or 'Act/360'.</p> <p>The actual number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by 360.</p>
30/360	ISDA (1991 & 2000 Draft Definitions)	<p>'30/360', '360/360' or 'Bond Basis'.</p> <p>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)).</p>
30E/360	ISDA (1991 & 2000 Draft Definitions)	<p>'30E/360' or 'Eurobond Basis'.</p> <p>The actual 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 (ISDA term) 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).</p>
EXA/EXA	AFB (September 1994 additives)	<p>'Base Exact/Exact' or '1/1'.</p> <p>The actual number of days in the Calculation Period or Compounding Period in respect of which payment is being made divided by the actual number of days.</p>

8.2.8 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/day-type-1-0>

Coding Scheme

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

8.2.9 Discounting Type Scheme (discountingTypeScheme)

Definition

The method of calculating discounted payment amounts.

URI

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

Coding Scheme

Code	Defn Source	Meaning
Standard	ISDA	Per ISDA 1991 Definitions, Section 9.3. Discounting, paragraph (a).
FRA	ISDA	Per ISDA 1991 Definitions, Section 9.3 Discounting, paragraph (b).

8.2.10 Floating Rate Index Scheme (floatingRateIndexScheme)

Definition

The specification of an ISDA Rate Option or Euro Rate Option for purposes of determining a relevant rate on a given reset date.

URI

<http://www.fpml.org/spec/floating-rate-index-1-0>

Coding Scheme

Valid ISDA Rate Options as published by ISDA in the 1991 ISDA Definitions (Section 7.1. Rate Options), amended and supplemented in the 1998 Supplement to the 1991 ISDA Definitions (Section 7.1. Rate Options) and valid Euro Rate Options as published in the 1998 ISDA Euro Definitions (Section 3.1. Euro Rate Options).

8.2.11 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/>.

8.2.12 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/pay-relative-to-1-0>

Coding Scheme

Code	Defn Source	Meaning
CalculationPeriodStartDate	N/A	Payments will occur relative to the first day of each calculation period.
CalculationPeriodEndDate	N/A	Payments will occur relative to the last day of each calculation period.
ResetDate	N/A	Payments will occur relative to the reset date.

8.2.13 Period Scheme (periodScheme)

Definition

The specification of a time period.

URI

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

Coding Scheme

Code	Defn Source	Meaning
D	N/A	Day
W	N/A	Week
M	N/A	Month
Y	N/A	Year

8.2.14 Rate Treatment Scheme (rateTreatmentScheme)

Definition

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

URI

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

Coding Scheme

Code	Defn Source	Meaning
BondEquivalentYield	ISDA	Per 1998 Supplement to the 1991 ISDA Definitions Section 7.4. Certain General Definitions Relating to Floating Rate Options, paragraph (e).
MoneyMarketYield	ISDA	Per 1998 Supplement to the 1991 ISDA Definitions Section 7.4. Certain General Definitions Relating to Floating Rate Options, paragraph (f).

8.2.15 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/reset-relative-to-1-0>

Coding Scheme

Code	Defn Source	Meaning
CalculationPeriodStartDate	N/A	Resets will occur relative to the first day of each calculation period.
CalculationPeriodEndDate	N/A	Resets will occur relative to the last day of each calculation period.

8.2.16 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/roll-convention-1-0>

Coding Scheme

Code	Defn Source	Meaning
EOM	N/A	Rolls on month end dates irrespective of the length of the month and the previous roll day.
FRN	ISDA	Rolls days are determined according to the FRN Convention or

Code	Defn Source	Meaning
		Eurodollar Convention as described in ISDA 1991 definitions.
IMM	ISDA	IMM Settlement Dates. The third Wednesday of the (delivery) month.
IMMCAD	N/A	The Monday before the third Wednesday of the (delivery) month.
SFE	Sydney Futures Exchange Contract Specification	Sydney Futures Exchange 90-Day Bank Accepted Bill Futures Settlement Dates. The second Friday of the (delivery) month.
NONE	N/A	The roll convention is not required. For example, in the case of a daily calculation frequency.
TBILL	Bureau of the Public Debt	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	N/A	Rolls on the 1 st day of the month.
2	N/A	Rolls on the 2 nd day of the month.
3	N/A	Rolls on the 3 rd day of the month.
4	N/A	Rolls on the 4 th day of the month.
5	N/A	Rolls on the 5 th day of the month.
6	N/A	Rolls on the 6 th day of the month.
7	N/A	Rolls on the 7 th day of the month.
8	N/A	Rolls on the 8 th day of the month.
9	N/A	Rolls on the 9 th day of the month.
10	N/A	Rolls on the 10 th day of the month.
11	N/A	Rolls on the 11 th day of the month.
12	N/A	Rolls on the 12 th day of the month.
13	N/A	Rolls on the 13 th day of the month.
14	N/A	Rolls on the 14 th day of the month.
15	N/A	Rolls on the 15 th day of the month.
16	N/A	Rolls on the 16 th day of the month.
17	N/A	Rolls on the 17 th day of the month.
18	N/A	Rolls on the 18 th day of the month.
19	N/A	Rolls on the 19 th day of the month.
20	N/A	Rolls on the 20 th day of the month.
21	N/A	Rolls on the 21 st day of the month.
22	N/A	Rolls on the 22 nd day of the month.
23	N/A	Rolls on the 23 rd day of the month.
24	N/A	Rolls on the 24 th day of the month.
25	N/A	Rolls on the 25 th day of the month.
26	N/A	Rolls on the 26 th day of the month.
27	N/A	Rolls on the 27 th day of the month.
28	N/A	Rolls on the 28 th day of the month.
29	N/A	Rolls on the 29 th day of the month.
30	N/A	Rolls on the 30 th day of the month.
MON	N/A	Rolls weekly on a Monday.
TUE	N/A	Rolls weekly on a Tuesday.
WED	N/A	Rolls weekly on a Wednesday.
THU	N/A	Rolls weekly on a Thursday.
FRI	N/A	Rolls weekly on a Friday.

Code	Defn Source	Meaning
SAT	N/A	Rolls weekly on a Saturday.
SUN	N/A	Rolls weekly on a Sunday.

8.2.17 Rounding Direction Scheme (roundingDirectionScheme)

Definition

The method of rounding a fractional number.

URI

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

Coding Scheme

Code	Defn Source	Meaning
Up	N/A	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	N/A	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	N/A	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.

8.2.18 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/step-relative-to-1-0>

Coding Scheme

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

8.2.19 Weekly Roll Convention Scheme (weeklyRollConventionScheme)

Definition

The specification of a weekly roll day.

URI

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

Coding Scheme

Code	Defn Source	Meaning
MON	N/A	Monday
TUE	N/A	Tuesday
WED	N/A	Wednesday
THU	N/A	Thursday
FRI	N/A	Friday
SAT	N/A	Saturday
SUN	N/A	Sunday

9 SAMPLE FPML

9.1 Introduction

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

The seven 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. 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 6M 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.


```

<?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/business-center-1-0"
  businessDayConventionSchemeDefault = "http://www.fpml.org/spec/business-day-
  convention-1-0"
  currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
  dayCountFractionSchemeDefault = "http://www.fpml.org/spec/day-count-fraction-1-0"
  dayTypeSchemeDefault = "http://www.fpml.org/spec/day-type-1-0"
  floatingRateIndexSchemeDefault = "http://www.fpml.org/spec/floating-rate-index-1-0"
  partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
  payRelativeToSchemeDefault = "http://www.fpml.org/spec/pay-relative-to-1-0"
  periodSchemeDefault = "http://www.fpml.org/spec/period-1-0"
  resetRelativeToSchemeDefault = "http://www.fpml.org/spec/reset-relative-to-1-0"
  rollConventionSchemeDefault = "http://www.fpml.org/spec/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>

    <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">
          <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>DEFR</businessCenter>
            </businessCenters>
            </dateAdjustments>
          </terminationDate>
          <calculationPeriodDatesAdjustments>
            <businessDayConvention>MODFOLLOWING</businessDayConvention>
          </calculationPeriodDatesAdjustments>
        </calculationPeriodDates>
      </swapStream>
    </swap>
  </trade>
</FpML>

```

```

    <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>
  <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
  <resetRelativeTo>CalculationPeriodStartDate</resetRelativeTo>
  <fixingDates>
    <fixingDaysOffset>
      <periodMultiplier>-2</periodMultiplier>
      <period>D</period>
      <dayType>Business</dayType>
    </fixingDaysOffset>
    <businessCenters>
      <businessCenter>GBLO</businessCenter>
    </businessCenters>
  </fixingDates>
  <resetFrequency>
    <periodMultiplier>6</periodMultiplier>
    <period>M</period>
  </resetFrequency>
  <resetDatesAdjustments>
    <businessDayConvention>MODFOLLOWING</businessDayConvention>
    <businessCentersReference href = "#primaryBusinessCenters" />
  </resetDatesAdjustments>
</resetDates>

<calculationPeriodAmount>
  <calculation>
    <notionalSchedule>
      <notionalStepSchedule>
        <initialValue>5000000.00</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>
      <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>50000000.00</initialValue>
          <currency>DEM</currency>
        </notionalStepSchedule>
      </notionalSchedule>
      <fixedRateSchedule>
        <initialValue>0.06</initialValue>
      </fixedRateSchedule>
      <dayCountFraction>30E/360</dayCountFraction>
    </calculation>
  </calculationPeriodAmount>

```

```
</swapStream>

</swap>

<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 4M and 5M 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.

```

<?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/business-center-1-0"
  businessDayConventionSchemeDefault = "http://www.fpml.org/spec/business-day-
  convention-1-0"
  currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
  dayCountFractionSchemeDefault = "http://www.fpml.org/spec/day-count-fraction-1-0"
  dayTypeSchemeDefault = "http://www.fpml.org/spec/day-type-1-0"
  floatingRateIndexSchemeDefault = "http://www.fpml.org/spec/floating-rate-index-1-0"
  partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
  payRelativeToSchemeDefault = "http://www.fpml.org/spec/pay-relative-to-1-0"
  periodSchemeDefault = "http://www.fpml.org/spec/period-1-0"
  resetRelativeToSchemeDefault = "http://www.fpml.org/spec/reset-relative-to-1-0"
  rollConventionSchemeDefault = "http://www.fpml.org/spec/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>

    <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>
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<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>
  <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
  <resetRelativeTo>CalculationPeriodStartDate</resetRelativeTo>
  <fixingDates>
    <fixingDaysOffset>
      <periodMultiplier>-2</periodMultiplier>
      <period>D</period>
      <dayType>Business</dayType>
    </fixingDaysOffset>
    <businessCenters>
      <businessCenter>GBLO</businessCenter>
    </businessCenters>
  </fixingDates>
  <resetFrequency>
    <periodMultiplier>6</periodMultiplier>
    <period>M</period>
  </resetFrequency>
  <resetDatesAdjustments>
    <businessDayConvention>MODFOLLOWING</businessDayConvention>
    <businessCentersReference href = "#primaryBusinessCenters" />
  </resetDatesAdjustments>
</resetDates>

<calculationPeriodAmount>
  <calculation>
    <notionalSchedule>
      <notionalStepSchedule>
        <initialValue>50000000.00</initialValue>
        <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>
      </notionalStepSchedule>
    </notionalSchedule>
  </calculation>
</calculationPeriodAmount>

```

```

        <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>
    </floatingRate>
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</swapStream>

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

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</swapStream>

</swap>

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<partyId>CHASUS33</partyId>
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<party id = "BARCLAYS">
  <partyId>BARCGB2L</partyId>
</party>

</trade>

</FpML>
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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 J.P. Morgan 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
- J.P. Morgan 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 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 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 that optional cashflows are included. An assumption that all weekdays are good business days has been made in calculating the adjusted dates in the cashflows.

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  resetRelativeToSchemeDefault = "http://www.fpml.org/spec/reset-relative-to-1-0"
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      <tradeDate>2000-04-25</tradeDate>

    </tradeHeader>

    <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. -->

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</swapStream>

<!-- J.P. Morgan pays the 5.85% fixed rate semi-annually on a 30/360 basis -->

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```

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</swapStream>

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<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 J.P. Morgan 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
- J.P. Morgan 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 3M 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 J.P. Morgan on the Effective Date.

Note that the optional cashflows are not included in this example.

```

<?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/business-center-1-0"
  businessDayConventionSchemeDefault = "http://www.fpml.org/spec/business-day-
  convention-1-0"
  currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
  dayCountFractionSchemeDefault = "http://www.fpml.org/spec/day-count-fraction-1-0"
  dayTypeSchemeDefault = "http://www.fpml.org/spec/day-type-1-0"
  floatingRateIndexSchemeDefault = "http://www.fpml.org/spec/floating-rate-index-1-0"
  partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
  payRelativeToSchemeDefault = "http://www.fpml.org/spec/pay-relative-to-1-0"
  periodSchemeDefault = "http://www.fpml.org/spec/period-1-0"
  resetRelativeToSchemeDefault = "http://www.fpml.org/spec/reset-relative-to-1-0"
  rollConventionSchemeDefault = "http://www.fpml.org/spec/roll-convention-1-0">

  <trade>

    <tradeHeader>

      <partyTradeIdentifier>
        <partyReference href = "#MGTLONDON" />
        <tradeId tradeIdScheme = "http://www.jpmmorgan.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>

    <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>
  <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
  <resetRelativeTo>CalculationPeriodEndDate</resetRelativeTo>
  <fixingDates>
    <fixingDaysOffset>
      <periodMultiplier>-2</periodMultiplier>
      <period>D</period>
      <dayType>Business</dayType>
    </fixingDaysOffset>
    <businessCenters>
      <businessCenter>GBLO</businessCenter>
    </businessCenters>
  </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>

<!-- J.P. Morgan 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>
    </calculation>
  </calculationPeriodAmount>

```



```
        </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>

<party id = "MGTLONDON">
    <partyId>MGTGGB2L</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 6M 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 3M 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.

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<?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/business-center-1-0"
  businessDayConventionSchemeDefault = "http://www.fpml.org/spec/business-day-
  convention-1-0"
  currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
  dayCountFractionSchemeDefault = "http://www.fpml.org/spec/day-count-fraction-1-0"
  dayTypeSchemeDefault = "http://www.fpml.org/spec/day-type-1-0"
  floatingRateIndexSchemeDefault = "http://www.fpml.org/spec/floating-rate-index-1-0"
  partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
  payRelativeToSchemeDefault = "http://www.fpml.org/spec/pay-relative-to-1-0"
  periodSchemeDefault = "http://www.fpml.org/spec/period-1-0"
  resetRelativeToSchemeDefault = "http://www.fpml.org/spec/reset-relative-to-1-0"
  rollConventionSchemeDefault = "http://www.fpml.org/spec/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>

    <swap type = "Swap">

      <!-- Chase pays the floating rate every 6 months, based on 6M EUR-EURIBOR-TELETRATE
      + 10 basis points, on ACT/360 basis -->

      <swapStream type = "SwapStream">
        <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">
  <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
  <resetRelativeTo type = "string">CalculationPeriodStartDate</resetRelativeTo>
  <fixingDates type = "FixingDateOffset">
    <fixingDaysOffset type = "Offset" base = "Interval">
      <periodMultiplier type = "integer">-2</periodMultiplier>
      <period type = "string">D</period>
      <dayType type = "string">Business</dayType>
    </fixingDaysOffset>
    <businessCentersReference href = "#primaryBusinessCenters" />
  </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 = "SwapStream">
    <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>

<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 6M 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.

```

<?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/business-center-1-0"
  businessDayConventionSchemeDefault = "http://www.fpml.org/spec/business-day-
  convention-1-0"
  currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
  dayCountFractionSchemeDefault = "http://www.fpml.org/spec/day-count-fraction-1-0"
  dayTypeSchemeDefault = "http://www.fpml.org/spec/day-type-1-0"
  floatingRateIndexSchemeDefault = "http://www.fpml.org/spec/floating-rate-index-1-0"
  partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
  payRelativeToSchemeDefault = "http://www.fpml.org/spec/pay-relative-to-1-0"
  periodSchemeDefault = "http://www.fpml.org/spec/period-1-0"
  resetRelativeToSchemeDefault = "http://www.fpml.org/spec/reset-relative-to-1-0"
  rollConventionSchemeDefault = "http://www.fpml.org/spec/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>

    <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>
  <calculationPeriodDatesReference href = "#floatingCalcPeriodDates" />
  <resetRelativeTo>CalculationPeriodStartDate</resetRelativeTo>
  <fixingDates>
    <fixingDaysOffset>
      <periodMultiplier>-2</periodMultiplier>
      <period>D</period>
      <dayType>Business</dayType>
    </fixingDaysOffset>
    <businessCenters>
      <businessCenter>GBLO</businessCenter>
    </businessCenters>
  </fixingDates>
  <resetFrequency>
    <periodMultiplier>6</periodMultiplier>
    <period>M</period>
  </resetFrequency>
  <resetDatesAdjustments>
    <businessDayConvention>MODFOLLOWING</businessDayConvention>
    <businessCentersReference href = "#primaryBusinessCenters" />
  </resetDatesAdjustments>
</resetDates>

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  <calculation>
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        <initialValue>10000000.00</initialValue>
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      </notionalStepSchedule>
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      <indexTenor>
        <periodMultiplier>6</periodMultiplier>
        <period>M</period>
      </indexTenor>
    </floatingRateCalculation>
    <dayCountFraction>ACT/360</dayCountFraction>
  </calculation>

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</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>
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      <adjustedEndDate>1995-06-14</adjustedEndDate>
      <notionalAmount>10000000.00</notionalAmount>
      <floatingRateDefinition>
        <rateObservation>
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          <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>
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          <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>

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```

        </rateObservation>
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</paymentCalculationPeriod>
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        <adjustedEndDate>1996-12-16</adjustedEndDate>
        <notionalAmount>10000000.00</notionalAmount>
        <floatingRateDefinition>
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                <observationWeight>1</observationWeight>
            </rateObservation>
        </floatingRateDefinition>
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        <floatingRateDefinition>
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                <observationWeight>1</observationWeight>
            </rateObservation>
        </floatingRateDefinition>
    </calculationPeriod>
</paymentCalculationPeriod>
<paymentCalculationPeriod>
    <adjustedPaymentDate>1997-12-15</adjustedPaymentDate>
    <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>
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                <observationWeight>1</observationWeight>
            </rateObservation>
        </floatingRateDefinition>
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<paymentCalculationPeriod>
    <adjustedPaymentDate>1998-12-14</adjustedPaymentDate>
    <calculationPeriod>

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    <adjustedStartDate>1998-06-15</adjustedStartDate>
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      </rateObservation>
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  </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>
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      <dateAdjustments>
        <businessDayConvention>NONE</businessDayConvention>
      </dateAdjustments>
    </effectiveDate>
    <terminationDate>
      <unadjustedDate>1999-12-14</unadjustedDate>
      <dateAdjustments>
        <businessDayConvention>MODFOLLOWING</businessDayConvention>
        <businessCentersReference href = "#primaryBusinessCenters" />
      </dateAdjustments>
    </terminationDate>
  </calculationPeriodDates>

```

```

<calculationPeriodDatesAdjustments>
  <businessDayConvention>MODFOLLOWING</businessDayConvention>
  <businessCentersReference href = "#primaryBusinessCenters" />
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<calculationPeriodFrequency>
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  <period>Y</period>
  <rollConvention>14</rollConvention>
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</calculationPeriodDates>

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

<calculationPeriodAmount>
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      </notionalStepSchedule>
    </notionalSchedule>
    <fixedRateSchedule>
      <initialValue>0.06</initialValue>
    </fixedRateSchedule>
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  </calculation>
</calculationPeriodAmount>

<principalExchanges>
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  <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>
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      <notionalAmount>1000000000.00</notionalAmount>
      <fixedRate>0.06</fixedRate>
    </calculationPeriod>
  </paymentCalculationPeriod>
</paymentCalculationPeriod>
  <adjustedPaymentDate>1996-12-16</adjustedPaymentDate>
  <calculationPeriod>
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    <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>
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    <adjustedEndDate>1998-12-14</adjustedEndDate>
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    <fixedRate>0.06</fixedRate>
  </calculationPeriod>
</paymentCalculationPeriod>
</paymentCalculationPeriod>
  <adjustedPaymentDate>1999-12-14</adjustedPaymentDate>
  <calculationPeriod>
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    <adjustedEndDate>1999-12-14</adjustedEndDate>
    <notionalAmount>1000000000.00</notionalAmount>
    <fixedRate>0.06</fixedRate>
  </calculationPeriod>
</paymentCalculationPeriod>
</cashflows>

</swapStream>

</swap>

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

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

</trade>

</FpML>

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9.8 Example 7 - 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 that 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).

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

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  businessCenterSchemeDefault = "http://www.fpml.org/spec/business-center-1-0"
  businessDayConventionSchemeDefault = "http://www.fpml.org/spec/business-day-
  convention-1-0"
  currencySchemeDefault = "http://www.fpml.org/ext/iso4217"
  dayCountFractionSchemeDefault = "http://www.fpml.org/spec/day-count-fraction-1-0"
  dayTypeSchemeDefault = "http://www.fpml.org/spec/day-type-1-0"
  floatingRateIndexSchemeDefault = "http://www.fpml.org/spec/floating-rate-index-1-0"
  partyIdSchemeDefault = "http://www.fpml.org/ext/iso9362"
  periodSchemeDefault = "http://www.fpml.org/spec/period-1-0">

  <trade>

    <tradeHeader>

      <partyTradeIdentifier>
        <partyReference href = "#MIDLAND" />
        <tradeId tradeIdScheme = "http://www.hsbc.com/swaps/trade-id">MB87623</tradeId>
      </partyTradeIdentifier>

      <partyTradeIdentifier >
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        <tradeId tradeIdScheme = "http://www.abnamro.com/swaps/trade-id">AA9876</tradeId>
      </partyTradeIdentifier>

      <tradeDate>1991-05-14</tradeDate>

    </tradeHeader>

    <fra>
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      <sellerPartyReference href = "#ABNAMRO" />
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      <adjustedTerminationDate>1992-01-17</adjustedTerminationDate>
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          </businessCenters>
        </dateAdjustments>
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        </fixingDaysOffset>
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        </businessCenters>
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      <calculationPeriodNumberOfDays>184</calculationPeriodNumberOfDays>
      <notional>
        <currency>CHF</currency>
        <amount>25000000.00</amount>
      </notional>
      <fixedRate>0.04</fixedRate>
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  </trade>

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<floatingRateIndex>CHF-LIBOR-BBA</floatingRateIndex>
<indexTenor>
  <periodMultiplier>6</periodMultiplier>
  <period>M</period>
</indexTenor>
<fraDiscounting>true</fraDiscounting>
</fra>

<party id = "MIDLAND">
  <partyId>MIDLGB22</partyId>
</party>

<party id = "AENAMRO">
  <partyId>AENANL2A</partyId>
</party>

</trade>
</FpML>
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