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FpML Simple Interest Rate Swap

Company A → Fixed interest
5% in USD → Company B

Company B → 6m USD LIBOR
+ 0.04% spread → Company A

On a 20,000,000 USD notional.
For 10 years semi-annual payments.

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FpML—Client View

Company A ↔ trade ↔ Company B

sign confirm

Data in confirm

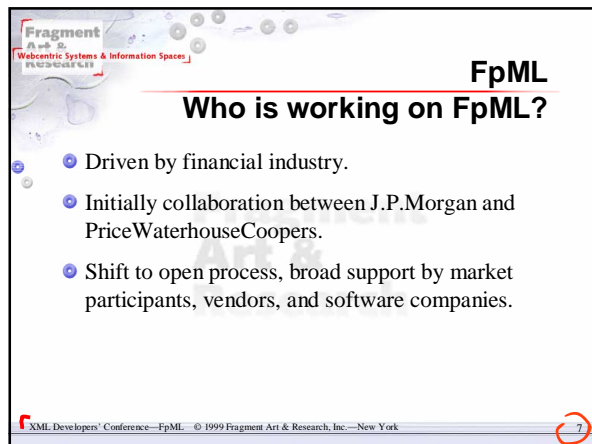
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FpML Why is this interesting?

- Currently labor-intensive manual process
- High transactional friction
- Leverage electronic processing:
 - C2B, B2B
 - inside B, inside C
 - new kind of services

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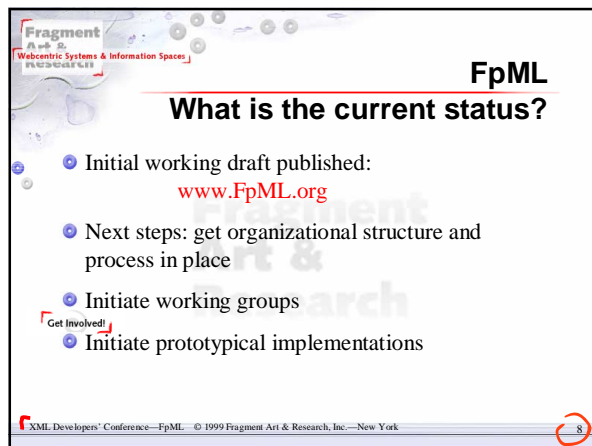
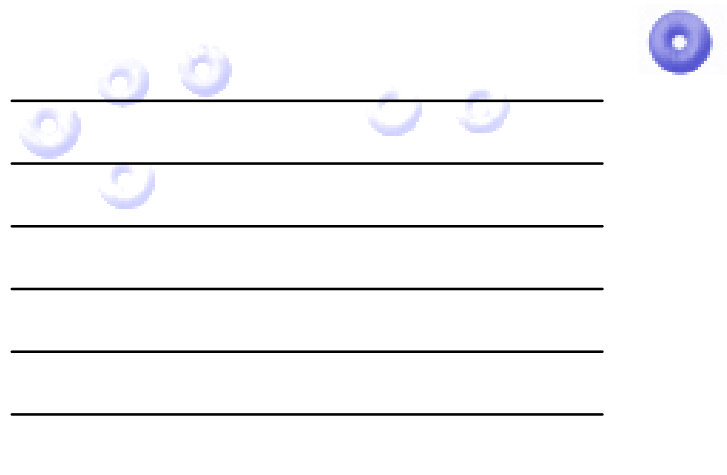


FpML
Who is working on FpML?

- Driven by financial industry.
- Initially collaboration between J.P.Morgan and PriceWaterhouseCoopers.
- Shift to open process, broad support by market participants, vendors, and software companies.

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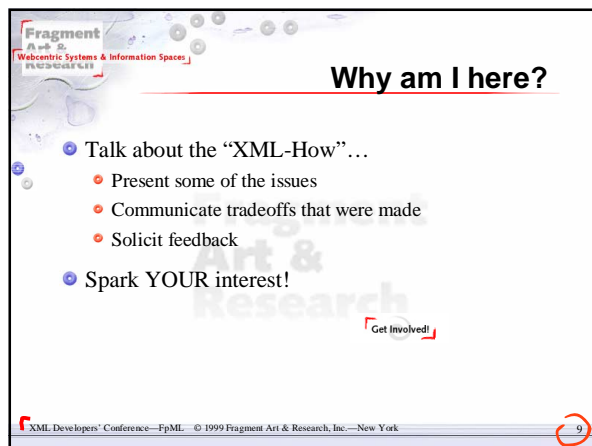
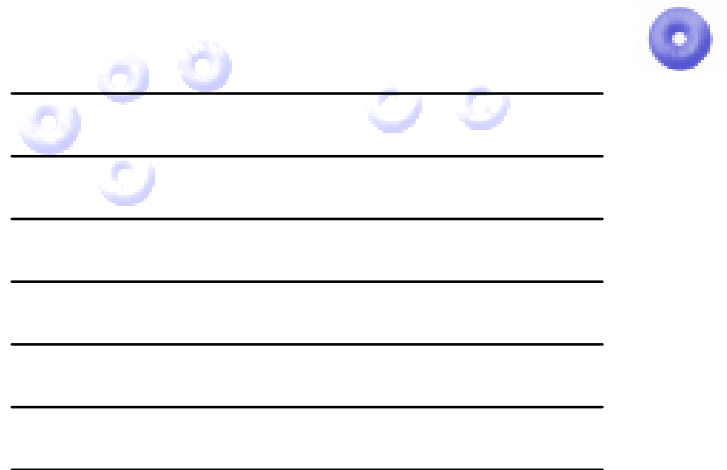


FpML
What is the current status?

- Initial working draft published:
www.FpML.org
- Next steps: get organizational structure and process in place
- Initiate working groups
- Initiate prototypical implementations

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FpML
Why am I here?

- Talk about the “XML-How”...
 - Present some of the issues
 - Communicate tradeoffs that were made
 - Solicit feedback
- Spark YOUR interest!

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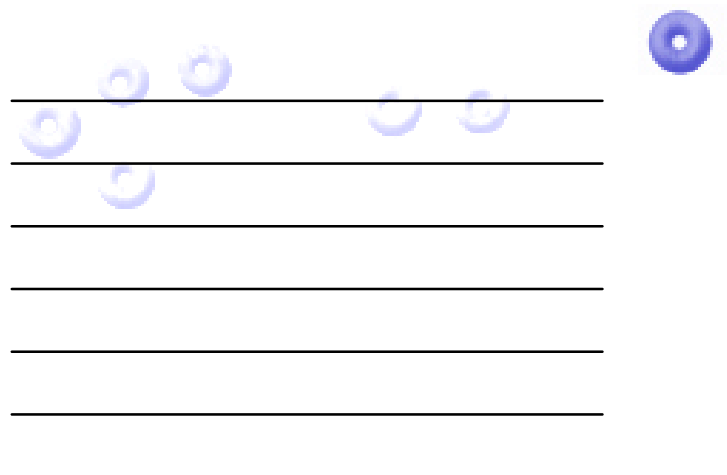


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Main Issues

- Objects
 - [Goals](#)
 - [Our Choices](#)
 - [FpML Examples](#)
 - [Alternatives](#)
- Composition
 - [Goals](#)
 - [Our Choices](#)
 - [Envelope](#)
 - [Alternatives](#)
- Validation
 - [Goals](#)
 - [Our Choices](#)
 - [Alternatives](#)
- References
 - [Goals](#)
 - [Our Choices](#)
 - [FpML Examples](#)
 - [Alternatives](#)

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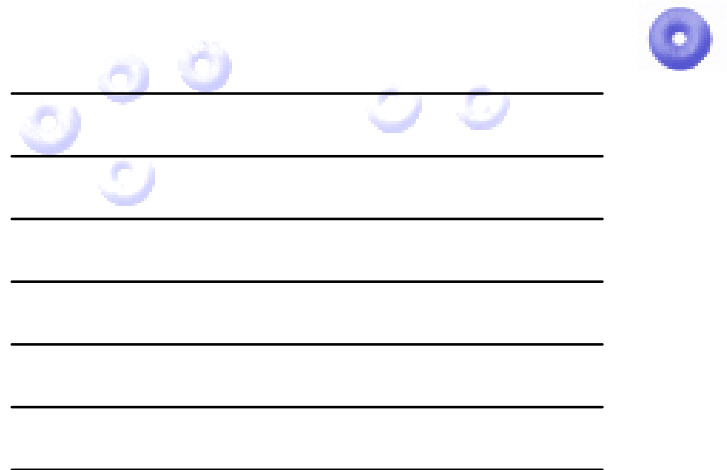


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Objects—Goals

- Organize data with an object oriented point of view.
- Follow instance of a class/instance variables paradigm.
- “Interface-based” types of instance variables.

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Objects—Our choices

- Strict naming conventions to tell object and its state apart.
- Use of namespaces to keep classes apart (mostly).
- No reliance on positional information, except in named and anonymous collections.

Feels Good

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...fragment out of fixed stream

```

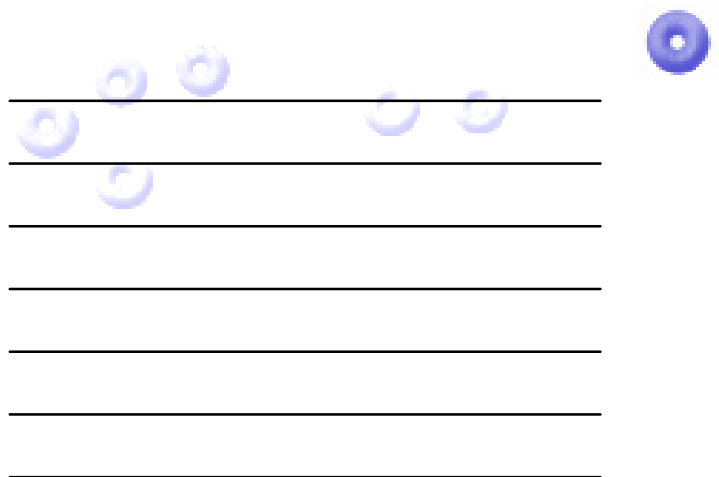
<isfi:initialPrincipalPayment>
  <p:Payment xmlns:p="urn:fpmml-Payme
    <p:paymentDate>
      <d:AdjustableDate>
        <d:date>1999-06-
  <d:businessDayConvention>ModifiedF
  <d:adjustmentsReference>primaryBus
    </d:AdjustableDate>
  </p:paymentDate>
  <p:paymentAmount>
    <m:Money>
      <m:ccy>USD</m:ccy>
      <m:amount>100000
    </m:Money>
  </p:paymentAmount>
  </p:Payment>
</isfi:initialPrincipalPayment>
  
```

Objects

FpML

Examples

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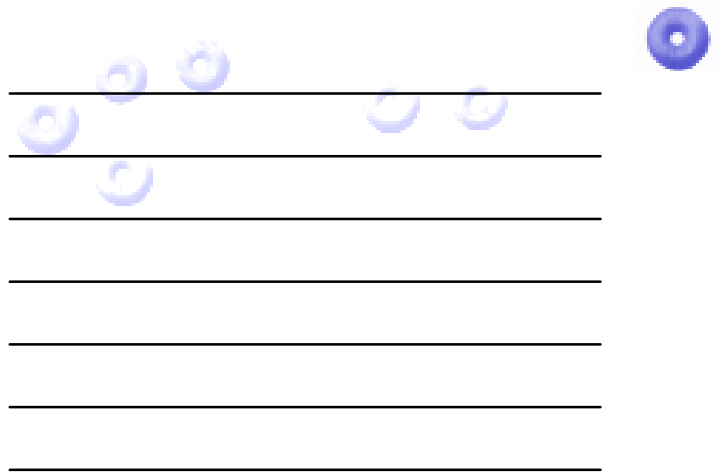


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Objects—Alternatives

- Don't use namespaces, instead prefix or change name on case by case basis.
- Merge instance variables up into their owner, and have meta-information that denotes the current class.

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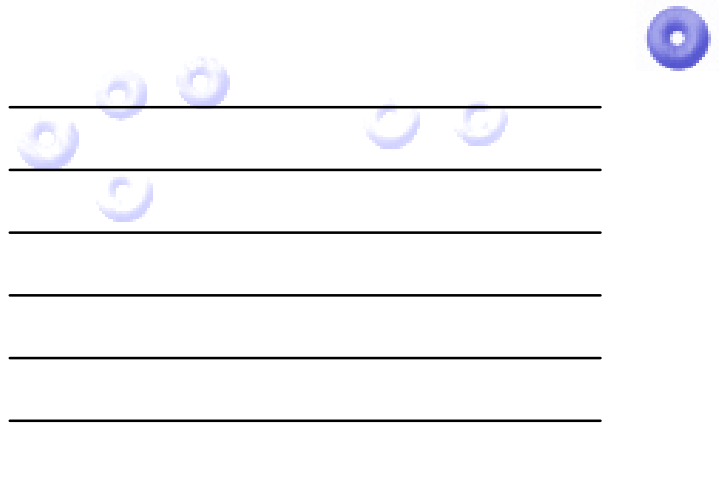


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Composition—Goals

- Maximize reuse of components.
- Processing service based flexibility.
- Utilize structure and be explicit as possible.
- Allow for proprietary and public extensions.

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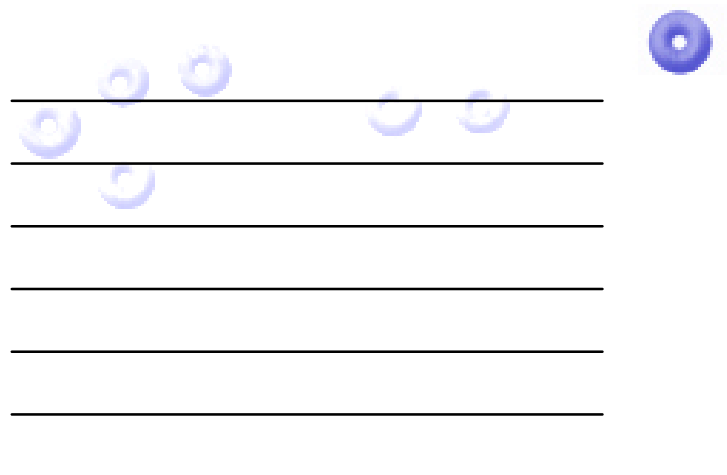


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Composition—Our Choices

- Fine grained components, used everywhere (e.g. Money, Rate, AdjustableDate). Needs More Work
- Coarse grained components inside Trade, to express “bigger” concepts (e.g. TradeID, Party, Product). Feels Good
- Trade as data envelope.

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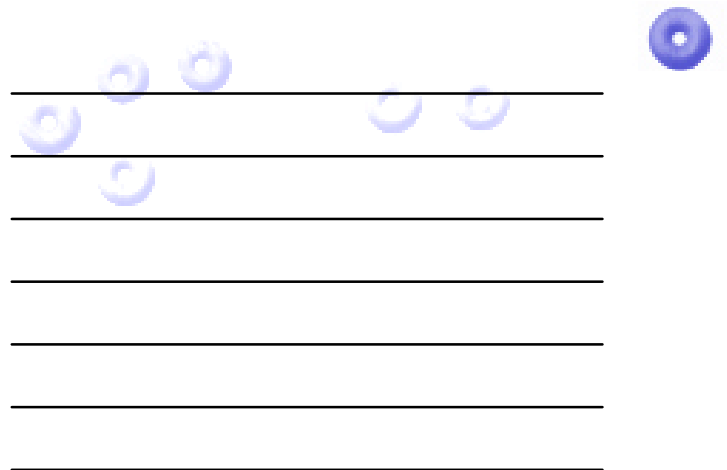
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Composition—Envelope

Data Envelope (Some Trade)

```
graph TD; subgraph "Data Envelope (Some Trade)"; direction LR; DA[Data A]; DB[Data B]; DC[Data C]; DD[Data D]; end; SX((Service X)); SY((Service Y)); DA --> SX; DB --> SX; DC --> SY; DD --> SY;
```

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Composition—Alternatives

- One big component per product or trade.
- Coarse components that are enriched over time.
- Flat structure for representing parameters of product.

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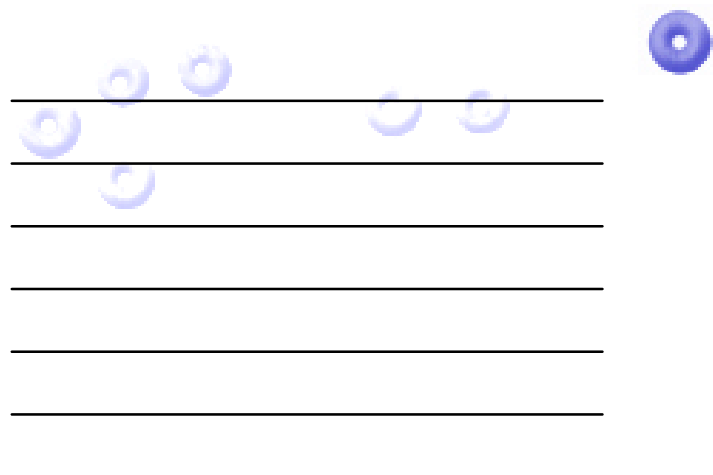
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Validation—Goals

- Validate as much as possible with standard mechanisms.
- Facilitate non-standard validation when necessary.
- Don't let current technology totally determine how FpML is structured.

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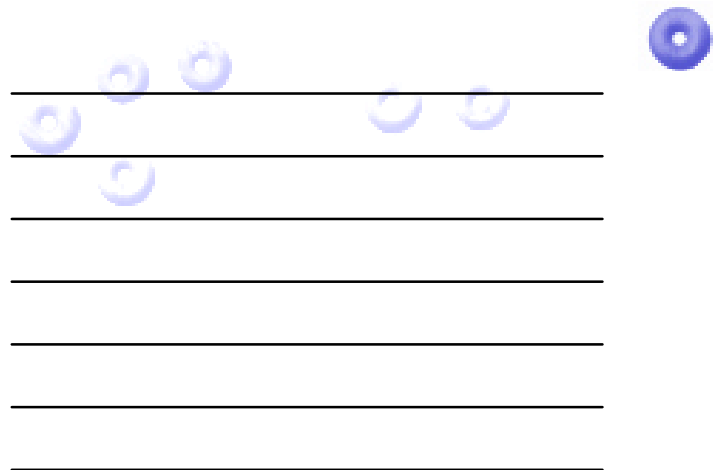
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Validation—Our Choices

- Use DTD's for now. Needs More Work
- Move to XML-Schema when stable.
- Represent addl. meta information as attributes.
- For now require application level validation for data types, referential integrity, and semantic validation.

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Validation—Alternatives

- Skip DTD, pick one of the schema proposals.
- Skip DTD, use proprietary validation tool.
- Validate once and sign.

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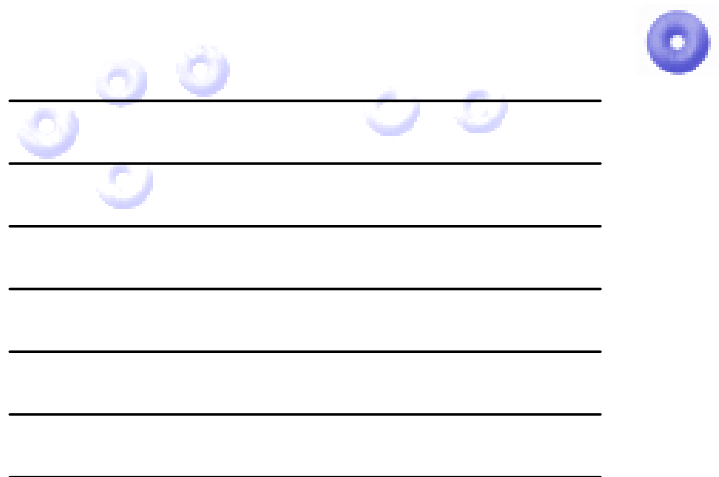


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References—Goals

- Enable use of external reference data
 - Currencies, Holiday Calendars, Business Centers
- Minimize redundancies
 - Between coarse elements
 - Inside one component
- Facilitate “thin” processing

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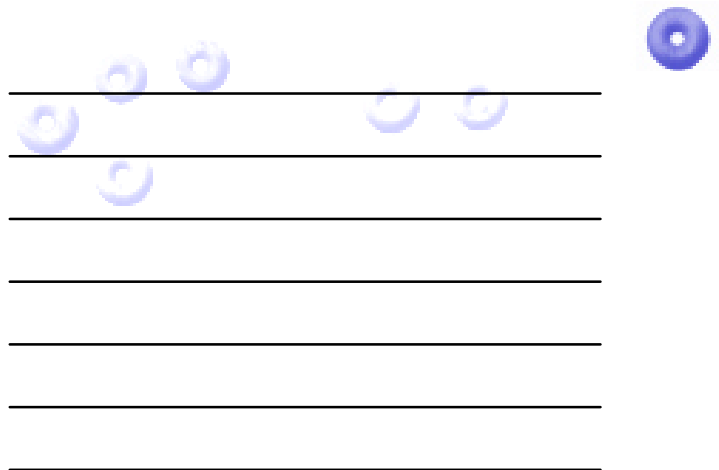


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References—Our Choices

- Name of element defined in attribute. Needs More Work
- Reference is simple name, owning element defines context.
- Naming convention for referencing element.

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References

FpML Examples

```

<fpml:Trade>
  <fpml:tradeIDs>
    <tid:TradeIDs xmlns:tid="urn:fpml-Trade" >
      <tid:TradeID>
        <tid:partyReference>ABC Trust</tid:partyReference>
        <tid:transactionReferenceNumber>23</tid:transactionReferenceNumber>
      </tid:TradeID>
      ...
    </tid:TradeIDs>
  </fpml:tradeIDs>
  <fpml:partyInformation>
    <pty:PartyInformation xmlns:pty="urn:fpml-Party" >
      ...
      <pty:tradeParties>
        <pty:Party name="ABC Trust">
          ...
        </pty:Party>
      </pty:tradeParties>
    </pty:PartyInformation>
  </fpml:partyInformation>
</fpml:Trade>
  
```

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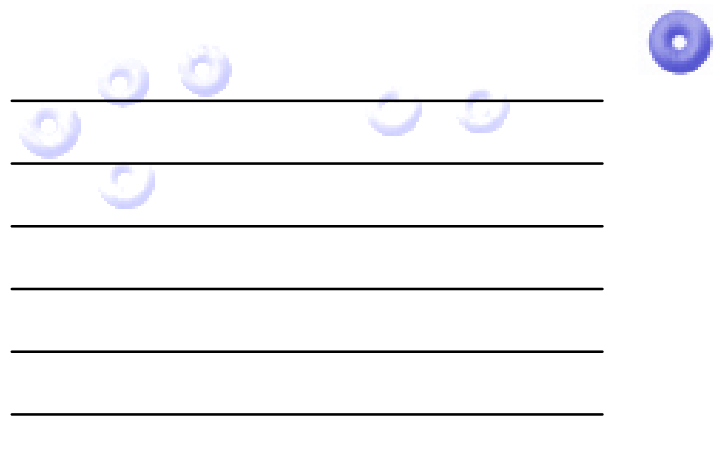
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References—Alternatives

- ID, IDRef
- XPointer
- Binding Declarations
- XPath

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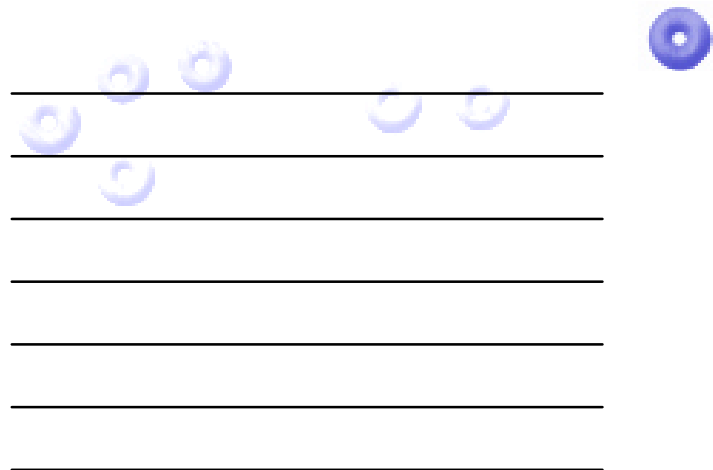
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Summary

- Briefly described FpML (what, why, who)
- Elaborated on XML-issues (Objects, Composition, Validation, References)
- Transition from document centric use of XML to data centric use is part of XML-evolution, and it's not easy...

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For More Info ...

- Check out www.FpML.org
- Contact:

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