RR Taxonomy Architecture

Document RRT-003, Revision 006

6 May 2007

1. Goals

The goal of this document is to define the logical models, design rules, patterns and physical models of the Risk/Return ("RR") taxonomies. The document also explains the design rationale and how the architecture satisfies the RR taxonomy requirements.

It is a goal of this architecture (though not a requirement) that filers creating XBRL documents should never *need* to create an accompanying taxonomy extension, and that filers should rarely *want* to.
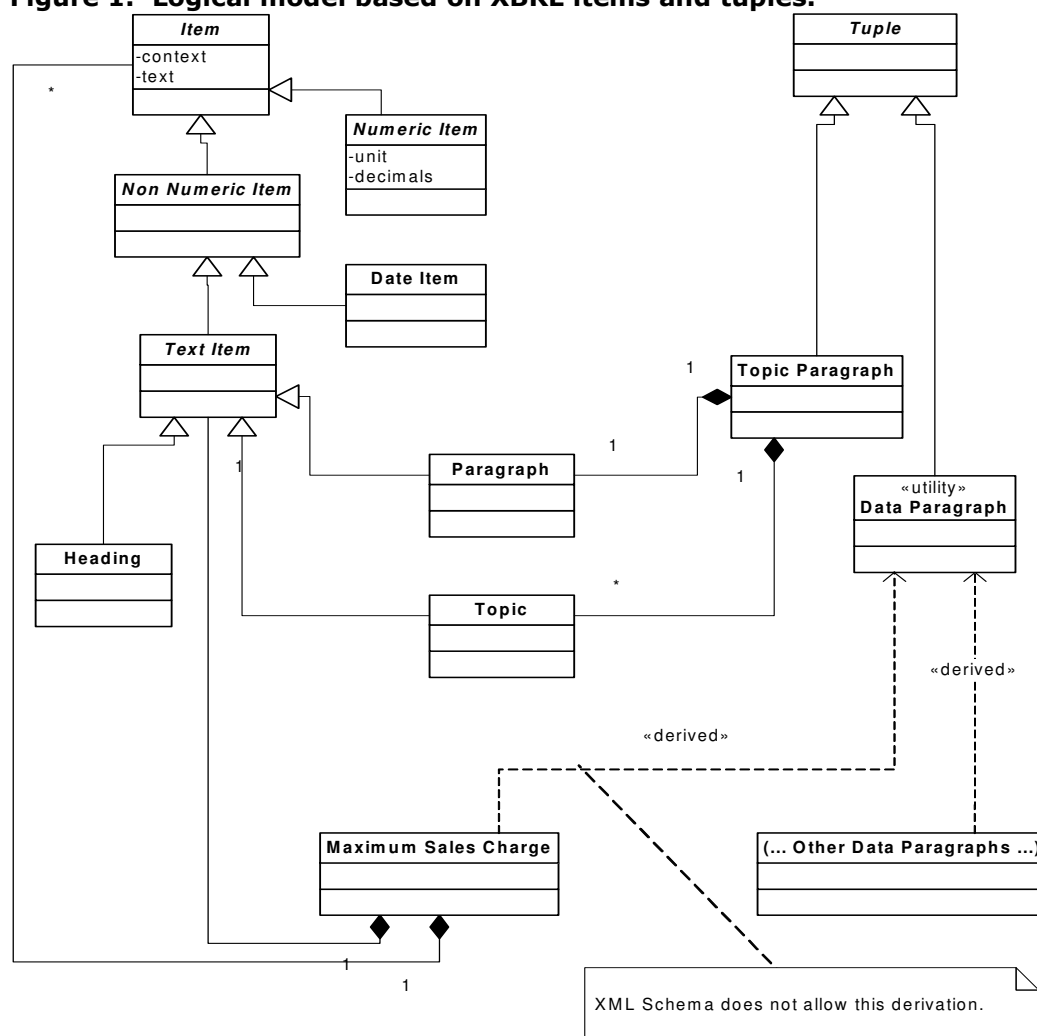
Another goal (also not a requirement) is that software developers responsible for applications that produce or consume instances should be able to successfully use their existing development tools that leverage XML Schema alone.

The intended audience of this document is a technical user familiar with XBRL, XML Schema and XSL Stylesheets.

2. Logical Models

The logical model of a prospectus is an extension of the logical model of an XBRL document. In that sense the key logical modeling decision concerns the treatment of patterns of disclosures such as paragraphs of free text, paragraphs of text that contain specific named disclosures required by the Form N-1A instructions (the "Instructions"), and tables of figures with headings that convey details of meaning. Higher level patterns such as a paragraph with sub-paragraphs, or a section consisting of a heading and other components, follow from these modeling decisions.

Figure 1. Logical model based on XBRL items and tuples.

Item
-context
-text

Tuple

Numeric Item
-unit
-decimals

Non Numeric Item

Date Item

Text Item

Topic Paragraph

Paragraph

«utility»
Data Paragraph

Heading

Topic

Maximum Sales Charge

(... Other Data Paragraphs ...)

«derived»

«derived»

XML Schema does not allow this derivation.

2.1 Concepts have names, labels and references

Concepts modeled in the taxonomy will have a set of default *labels* and *references*. The labels for each concept will include:

1. Standard label. This is a label that is a "human readable" version of the underlying concept name. For example, concept `Distribution12b1Fees` would have a standard label "Distribution (12b-1) Fees".

2. Terse label (optional). This is a widely used abbreviation for the concept. For example, although the full name of a concept might be "Distribution Fees (as a Percentage of Net Asset Value)" the terse label might simply be "Distribution Fees".

3. Instruction reference (required). This will name the specific section (and paragraph, if relevant) of the Instructions where the concept is explained[1].

2.2 Labels are not disclosures

Labels and default labels of text items do not themselves constitute a disclosure. For example, the concept "`ExpenseExampleAssumptionReturn`" may have a label of "Expense Example Assumption, Return" but the content of the disclosure in a

particular prospectus might be the text "Your investment has a 5% return each year and dividends and other distributions are reinvested.".

The two most critical classes for the R/R Taxonomy are the *Topic* and *Data* paragraphs:

1. Topic Paragraph. An example of a "topic" is "Fund may invest in any type of fixed income securities". This may be thought of as a discrete, yes-or-no "checklist" sort of concept that either does or does not appear in the prospectus. Of course, many different wordings could be used to convey this fact, and it could be a full paragraph or just part of one. A "topic paragraph" therefore is a discrete paragraph of text in a filing, a paragraph that makes disclosures on one or more topics required or mentioned in the Instructions. The taxonomy then provides a small base vocabulary of "standard" topics—including only the topics required by the instructions. Users may choose to publish their own topic vocabulary using XBRL's extension mechanisms. Sample topic taxonomies covering fund categories, objectives, strategies and risks are available as models.

2. Data Paragraph. An example of a "data paragraph" would be a single line in a filing that showed "Distribution (12b-1) Fees", along with four different percentages for four different share classes. The data paragraph differs from the Topic Paragraph only in that the "text paragraph" is usually a single phrase or line of text that describes the other data points thus grouped together. For technical reasons, the data paragraph is a "utility class" that is not referred to by the many specific data paragraphs.

2.3 Appearance and Ordering

The Instructions specify:

- What concepts must appear;

- Who must provide which concepts; and

- What the required ordering is for some concepts.

The taxonomy will enforce these on any particular prospectus instance where possible, although where the Instructions allow free narrative, the taxonomy can only suggest without enforcing. Therefore, a distinction must be made between those portions of the logical model that will be represented in XBRL versus those which will be represented by separate deliverables such as style sheets.

The taxonomy will contain:

- A complete set of every discrete concept, disclosure and section heading mentioned in Form N1-A items 2 and 3. Where a disclosure requires only text, or requires text and other data points, a *topic* or *data* paragraph must be used.

- For information that is meaningless (for example, negative Management Fees) or combinations of information that are meaningless (for example, a Fund Name in a context where only the Series is known), validation constraints preventing that combination.

- Tuple nesting that reflects the order in which topics are covered in the instructions. Where paragraphs of text *may* treat any number of different topics individually (e.g., in the paragraphs that describe investment objectives), the ordering of possible topics will be alphabetical or use some other conventional ordering.

- A presentation ordering that corresponds to the contents of tuples, which in turn reflect common practices.

A separate set of deliverables will provide stylesheets or a similar "rules" syntax that will illustrate how software could process a specific prospectus so as to:

- Detect syntax violations that XBRL itself cannot detect, such as the format of a CIK or the correspondence between the context dates and the anticipated effective date of the prospectus.

- Detect whether the type of fund described is consistent with the disclosures provided, and whether the arithmetic relationships are consistent;

- A standardized, fixed (though not necessarily attractive) rendering for any prospectus using the R/R Taxonomy.

2.4 Series, Class and Master-Feeder

There are two ways of modeling data dimensions in XBRL; "typed" dimensions are potentially infinite, while "explicit" dimensions require the list of possible values to be fixed. Explicit dimensions are used, for example, to name the subsidiaries of a company in a 10-K filing.

The CIK is used as the XBRL identifier of a context. It must be a string of length 10 matching the pattern "`[0-9]*`", however XBRL by itself cannot enforce this.

The series identifier will be modeled using XBRL "explicit dimensions". The type is a string of length 10 matching the pattern "S[0-9]*".

The class identifier will also be modeled using explicit dimensions. The type is a string of length 10 matching the pattern "C[0-9]*".

The "explicit dimension" feature of the XBRL Dimensional Specification requires filers to enumerate all the series and class identifiers, and allows them to group these identifiers in hierarchies of their own choosing.

The master-feeder relationship does not at this time appear to require dimensional modeling; a feeder fund can simply have a concept "master fund" with a value that names another fund, like any other data point. This assumes that a given fund could only ever have one master.

3. Design Rules

The logical models shown above and the examples provided below explain how different phenomena in the instructions and samples are to be mapped into the models. Therefore these design rules cover both the taxonomy itself as well as instances built with the taxonomy.

No element will have a type that is directly dependent on XBRL's own built-in types; rather, a set of prospectus-specific types (e.g. `TextItemType`, `NonnegativeMonetaryItemType`) will be used in all cases where XML Schema type derivation rules allow it. This provides a layer of abstraction useful if subsequent mass changes or design rules must be enforced. Where it is possible to anticipate other uses of the same taxonomy elements, types will be chosen that do not presume that the element can only appear in the Risk/Return Summary.

Non-numeric elements will have a period type of 'instant', since they are all facts contained in a prospectus effective as of a point in time. Numeric elements will have period type of 'instant' as well, except in those rare cases where the fact could be reported within a single instance over several periods of time all ending on the same date.

Each prospectus-specific type will have an abstract element to stand as the head of a substitution group for that type (e.g. `TextHead` with type `TextType` is an abstract element).

There will be no abstract elements other than "Head" elements and elements used to organize data into dimensions for analysis.

Only abstract elements may have the XBRL item element as its substitution group; all others must use a prospectus-specific item head.

All "heading" concepts will be concrete elements in the `HeadingHead` substitution group so that the prospectus author can assign the appropriate text to use for that element, and assign a footnote or footnotes to it if needed.

The taxonomy may depend on USFR-IME *elements*, but not IMR (the taxonomy that contains the relationships among the elements). This is because the IMR relationships bear little resemblance to the needs for Form N-1A. Note also that planned changes in the US GAAP taxonomies for 2007 will change USFR-IME element names.

Naming conventions:

- All types will end with the suffix "`Type`".

- "Type" is a reserved word that will only be used in element names when referring to a data type.

- All items that are ratios of any kind must not be modeled as percentages because of the ambiguity this creates. They must have a name indicating both the numerator and denominator separated by "Over" and have a numeric type indicating whether they can ever be positive (or negative). Thus, `FeeReductionOverAssets` means "Fee Reduction as a fraction of Assets", has the type `NonpositivePureItemType`, so that "(.25%)" would appear in an instance as "-.0025" with decimals="4".

- Captions and Headings are defined as tuples with the suffix 'Caption' or 'Heading' as appropriate, and the footnote mark children have the suffix '_mrk'.

Tuple Name	Text item	Footnote mark item
StrategyCaption	Caption	StrategyCaption_mrk
AnnualReturnCaption	Caption	AnnualReturnCaption_mrk
BarChartHeading	Heading	BarChartHeading_mrk

- All topics meant to appear in a Topic Paragraph will begin with a prefix that indicates which tuple they are part of. Conversely, no two tuples may employ the same prefix in this way. The table below shows examples.

Tuple Name	Prefix	Sample item child
StrategyNarrativeParagraph	Strategy	StrategyEmergingMarkets
RiskNarrativeParagraph	Risk	RiskHedgingRisk
ObjectiveNarrativeParagraph	Objective	ObjectiveIsTotalReturn

- All items meant to appear in a Data Paragraph must begin with a prefix that is exactly the same as the name of the tuple they are part of, and must have a suffix that indicates their type. The table below shows examples.

Tuple Name	Text item child	Numeric (pure) item child
MaximumAccountFeeOverOther	MaximumAccountFeeOverOther_txt	MaximumAccountFeeOverOther_num
OtherExpensesOverAssets	OtherExpensesOverAssets_txt	OtherExpensesOverAssets_num
FeeReductionOverAssets	FeeReductionOverAssets_txt	FeeReductionOverAssets_num

- If the length of element names begins to routinely exceed 50 characters as the taxonomy develops, a consistent set of abbreviations will be chosen.
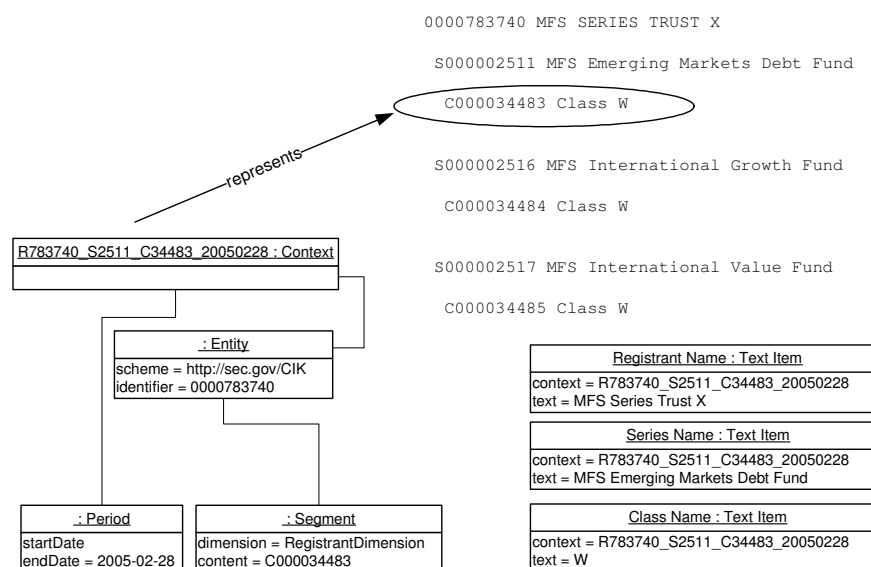
4. Patterns

4.1 Registrant, series and share classes

A registrant and its relationships to its individual series and their share classes are modeled as shown in the example below. The text is an extract from a 485BPOS filing, followed by a hierarchy as shown on the SEC EDGAR web site. In the example MFS Series Trust X is the name of the investment company and is the entity registered with the SEC. Each fund within the Trust (e.g., Emerging Markets Debt Fund, International Growth Fund, etc. is a "series". Each series offers multiple classes of shares (e.g., Class W, Class A, Class B, etc.) The UML diagram below that shows how one particular context, which may be thought of as "The context of data about share class W of the MFS Emerging Markets fund of registrant MFS Series Trust X as of 28 February 2005", is modeled in a combination of objects. In XBRL, each context needs a unique id that has no intrinsic meaning; in this example we have adopted the convention that context id "R783740_S2511_C34483_20050228" is used for the context of registrant 0000783740, series S000002511, class C000034483, as of 28 Feb 2005."

Figure 2. An example of a context with class, series and registrant.

```
This Post-Effective Amendment No. 60 to the registration statement of MFS Series
Trust X (the "Trust") on Form N-1A (File Nos. 33-1657) is being filed to
register Class W shares of the MFS Emerging Markets Debt Fund, MFS International
Growth Fund and MFS International Value Fund, each an existing series of the
Trust. This amendment does not affect the currently effective prospectuses or
statements of additional information for other series and classes of the Trust's
shares.
```

```
                              0000783740 MFS SERIES TRUST X

                            S000002511 MFS Emerging Markets Debt Fund

                              C000034483 Class W

                            S000002516 MFS International Growth Fund

                              C000034484 Class W

                            S000002517 MFS International Value Fund

                              C000034485 Class W
```


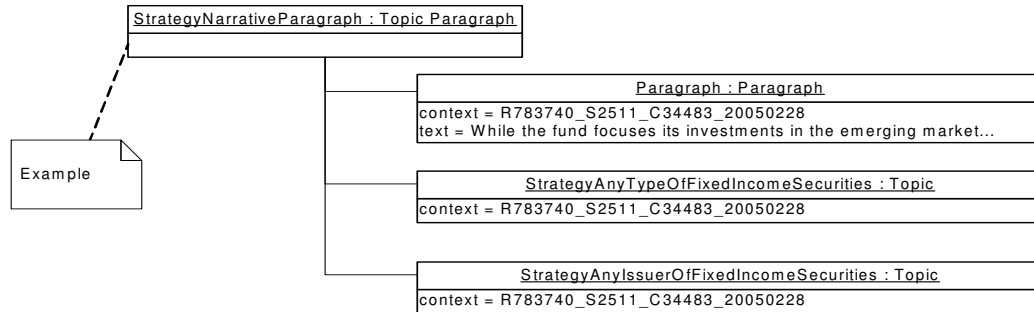Contexts for a prospectus will all have a period type of 'instant' and will refer to the presumptive effective date of the prospectus, not the filing date. The filing date and the anticipated effective date are both available as normal facts within the prospectus.

4.2 A text disclosure

A text disclosure consists of a paragraph of text along with a set of "topic" tags.
Figure 3. A sample paragraph with two "topic" tags.

```
        While the fund focuses its investments in the emerging market fixed
income securities described above, the fund may also invest in all types of
fixed income securities and in fixed income securities issued by all types
of issuers.
```
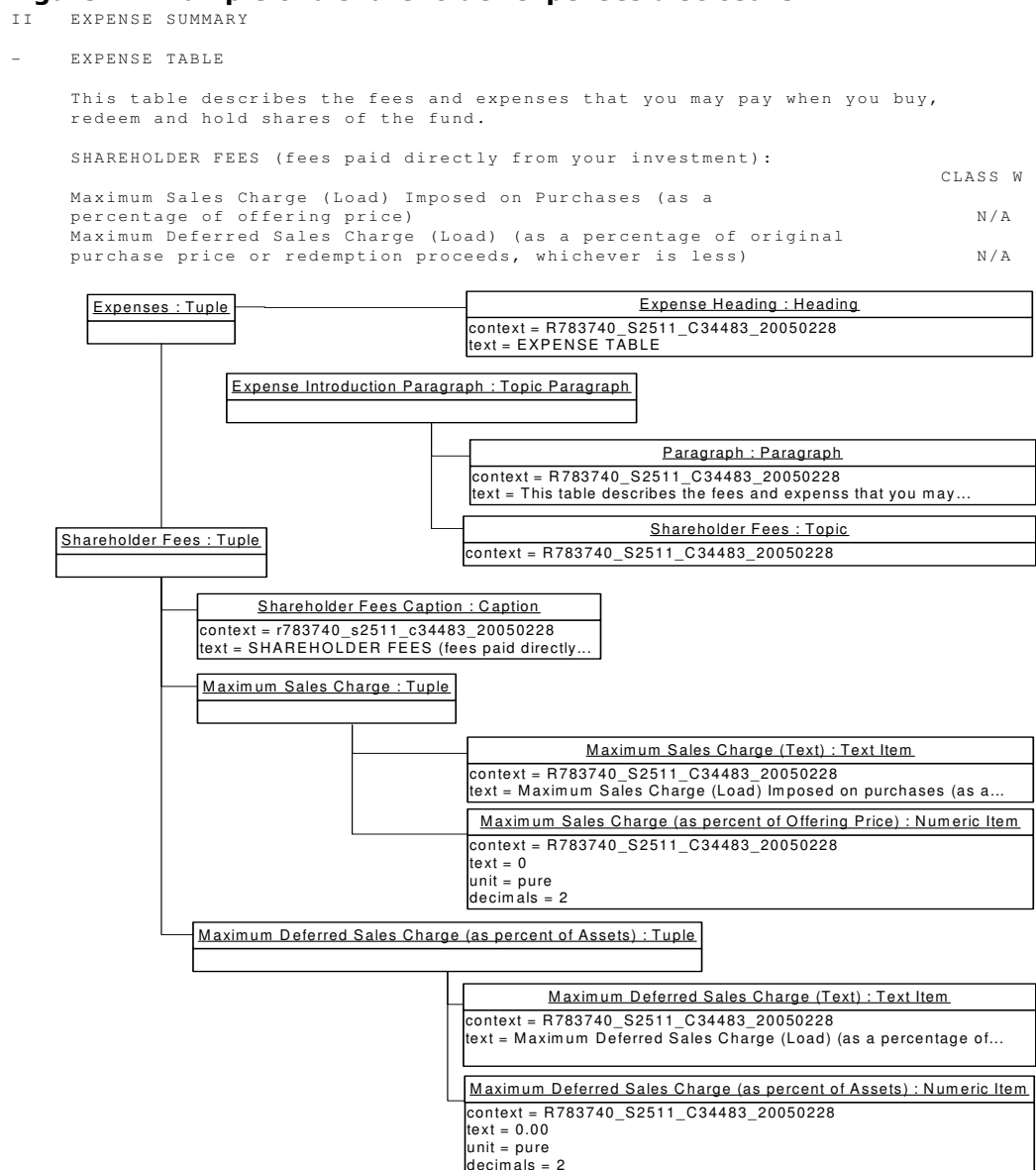
```
┌─────────────────────────────────────────────┐
│ StrategyNarrativeParagraph : Topic Paragraph │
└─────────────────────────────────────────────┘

                              ┌──────────────────────────────────────────────────────────┐
                              │            Paragraph : Paragraph                           │
                              ├──────────────────────────────────────────────────────────┤
                              │ context = R783740_S2511_C34483_20050228                    │
┌──────────┐                  │ text = While the fund focuses its investments in the       │
│          │                  │ emerging market...                                         │
│ Example  │                  └──────────────────────────────────────────────────────────┘
│          │
└──────────┘                  ┌──────────────────────────────────────────────────────────┐
                              │       StrategyAnyTypeOfFixedIncomeSecurities : Topic       │
                              ├──────────────────────────────────────────────────────────┤
                              │ context = R783740_S2511_C34483_20050228                    │
                              └──────────────────────────────────────────────────────────┘

                              ┌──────────────────────────────────────────────────────────┐
                              │      StrategyAnyIssuerOfFixedIncomeSecurities : Topic      │
                              ├──────────────────────────────────────────────────────────┤
                              │ context = R783740_S2511_C34483_20050228                    │
                              └──────────────────────────────────────────────────────────┘
```

This is an XBRL tuple containing a single `TextItemHead` followed by any number of `TopicItemHead` elements.

4.3 Mixed text and table

Several Form N-1A disclosures require both text (even specific words and sentences) and tables of figures in specified order. The example below shows how a shareholder expenses disclosure is modeled. Note that the "N/A" is indicated by a value of "0" in the relevant elements. Note also that the preparer has the flexibility to decide what text to use to convey the underlying concept. The taxonomy concept "MaximumSalesChargeOverOfferingPrice" for example here has the text content "Maximum Sales Charge (Load) Imposed on Purchases (as a percentage of offering price)".

Figure 4. Example of a shareholder expenses disclosure.

```
II   EXPENSE SUMMARY

–    EXPENSE TABLE

     This table describes the fees and expenses that you may pay when you buy,
     redeem and hold shares of the fund.

     SHAREHOLDER FEES (fees paid directly from your investment):
                                                                      CLASS W

     Maximum Sales Charge (Load) Imposed on Purchases (as a
     percentage of offering price)                                      N/A
     Maximum Deferred Sales Charge (Load) (as a percentage of original
     purchase price or redemption proceeds, whichever is less)          N/A
```

Expenses : Tuple

Expense Heading : Heading
context = R783740_S2511_C34483_20050228
text = EXPENSE TABLE

Expense Introduction Paragraph : Topic Paragraph

Paragraph : Paragraph
context = R783740_S2511_C34483_20050228
text = This table describes the fees and expenss that you may...

Shareholder Fees : Topic
context = R783740_S2511_C34483_20050228

Shareholder Fees : Tuple

Shareholder Fees Caption : Caption
context = r783740_s2511_c34483_20050228
text = SHAREHOLDER FEES (fees paid directly...

Maximum Sales Charge : Tuple

Maximum Sales Charge (Text) : Text Item
context = R783740_S2511_C34483_20050228
text = Maximum Sales Charge (Load) Imposed on purchases (as a...

Maximum Sales Charge (as percent of Offering Price) : Numeric Item
context = R783740_S2511_C34483_20050228
text = 0
unit = pure
decimals = 2

Maximum Deferred Sales Charge (as percent of Assets) : Tuple

Maximum Deferred Sales Charge (Text) : Text Item
context = R783740_S2511_C34483_20050228
text = Maximum Deferred Sales Charge (Load) (as a percentage of...

Maximum Deferred Sales Charge (as percent of Assets) : Numeric Item
context = R783740_S2511_C34483_20050228
text = 0.00
unit = pure
decimals = 2

4.4 Topic hierarchy

A hierarchy of topics has been established, as shown in the figure below. The implication of this hierarchy is that some paragraphs of a prospectus may deal with strategies, objectives or both, but it is not possible to restrict a paragraph to deal only with (say) Strategy and Risk.

Figure 5. Substitution hierarchy of topics
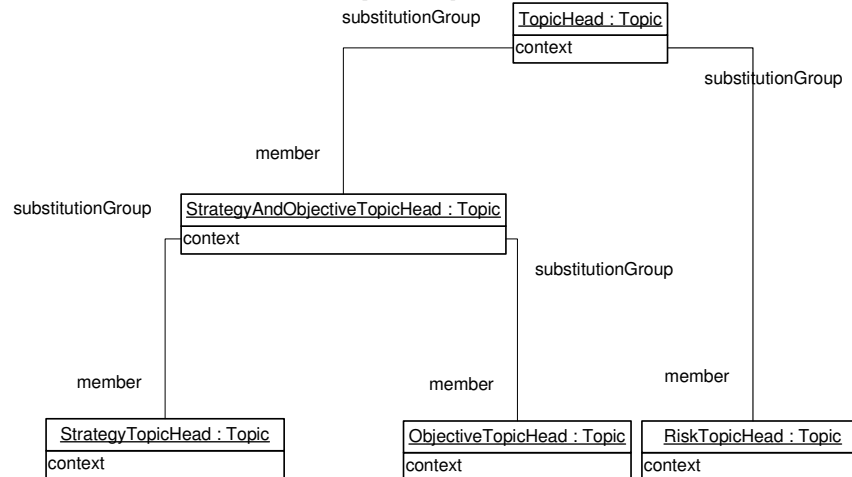
4.5 Registrant, Series and Class hierarchy

Every fact in a prospectus is associated with an XBRL context which specifies its scope, which may be one or more classes, often all of the series in a class. Filers use the XBRL dimensional taxonomy "domain-member" relationship in the XBRL definition linkbase, as illustrated below, to define required relationships (Registrant, Series and Class) as well as intermediate groupings ("Equity Funds" or "Class A Shares").

Figure 6. Sample Hierarchy of Registrant, Series and Class
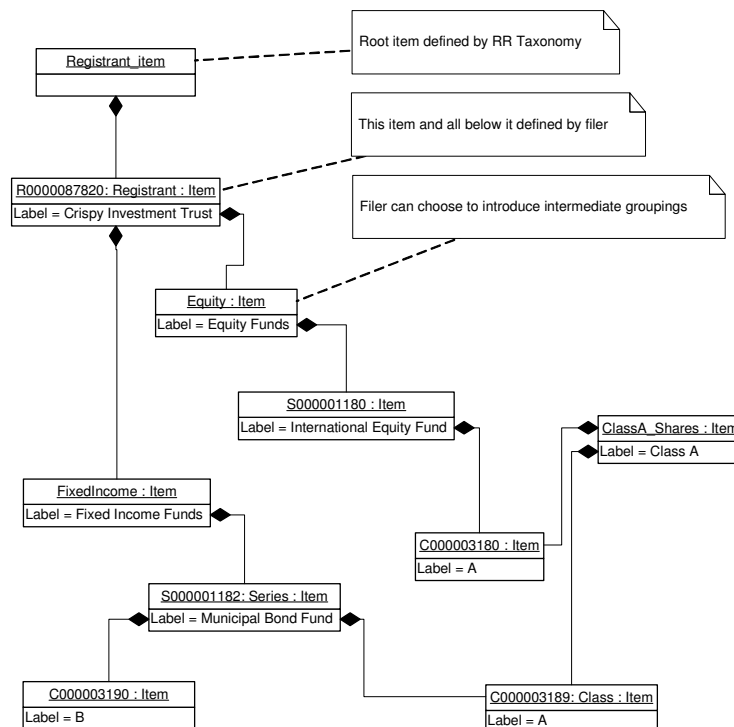
The RRT taxonomy also has domain-member relationships for the topics, paragraphs, and other objects in the taxonomy. A technical detail is that XBRL Dimensions 1.0 does not allow the domain-member relationship to contain tuple elements. Therefore, not all of the multidimensional analysis that might potentially be done can actually be enabled at this time in off-the-shelf XBRL tools.

Nevertheless, to aid interim development, every tuple has a companion item with the suffix "_item"; this allows hierarchical displays like the left column of the figure below.

Figure 7. Domain elements enable 2-D grid displays

Item	c:C000003173	c:C000003179	ici RegistrantDomain	s:S000001179
Prospectus	-			
Risk Return				
Risk Return Heading	-	-	-	-
Bar Chart and Performance Table				
Bar Chart and Performance T...	-	Performance Information	-	-
Performance Introduction Par...				
Paragraph	-	The bar chart and the performance table below provide an indication of the risks of investing in the Fund by showing changes in the performance of the Fund's Class A Shares from year to year and by showing how the average annual returns of the Fund's Class A and Class C Shares compare with those of a broad measure of market performance. All returns include the reinvestment of dividends and distributions. The bar chart shows changes in the performance of the Fund's Class A Shares and does not reflect the deduction of any applicable sales charges. If sales charges had been reflected, the returns for Class A Shares would be less than those shown below. Average annual return calculations reflect the deduction of applicable sales charges. The performance of Class C Shares will differ due to differences in expenses. As with all mutual funds, the Fund's past performance (before and after taxes) does not predict the Fund's future performance.	-	-
Bar Chart Section				
Bar Chart Heading	-	Calendar Year Total Returns	-	-
Annual Return Row				
Annual Return Row	-	1998	-	-
Annual Return Row	-	19.53%	-	-
Annual Return Row				
Annual Return Row	-	1999	-	-
Annual Return Row	-	49.71%	-	-
Annual Return Row				
Annual Return Row	-	2000	-	-
Annual Return Row	-	-17.09%	-	-
Annual Return Row				
Annual Return Row	-	2001	-	-
Annual Return Row	-	-25.52%	-	-
Risk Return				
Risk Return Heading	-	-	-	Large Cap Core Equity Fund
Bar Chart and Performance Table				
Bar Chart and Performance Par	Performance Information	-	-	-
Performance Introduction Par				
Paragraph	The bar chart and the performance table below provide an indication of the risks of investing in the Fund by showing changes in the performance of the Fund's Class A Shares from year to year and by showing how the average annual returns of the Fund's Class A and Class C Shares compare with those of a broad measure of market performance. All returns include the reinvestment of dividends and distributions. The bar chart shows changes in the performance of the Fund's Class A Shares and does not reflect the deduction of any applicable sales charges. If sales charges had been reflected, the returns for Class A Shares would be less than those shown below. Average annual return calculations reflect the deduction of applicable sales charges. The performance of Class C Shares will differ due to differences in expenses. As with all mutual funds, the Fund's past performance (before and after taxes) does not predict the Fund's future performance.	-	-	-
Bar Chart Section				
Bar Chart Heading	Calendar Year Total Returns	-	-	-
Annual Return Row	1998	-	-	-
Annual Return Row	31.99%	-	-	-
Annual Return Row				
Annual Return Row	1999	-	-	-
Annual Return Row	19.72%	-	-	-
Annual Return Row				
Annual Return Row	2000	-	-	-
Annual Return Row	1.42%	-	-	-
Annual Return Row				
Annual Return Row	2001	-	-	-
Annual Return Row	-14.49%	-	-	-
Scope				
Registrant Name	-	-	Advantage Fund	-
Series Name	Large Cap Core Equity Fund	International Equity Fund	-	Large Cap Core Equity Fund
Class Name	A	A	-	-
Filing Date	-	-	2006-07-28	-

5. Alternatives considered

The rationale for the design decisions taken in this architecture takes into account not only the stated requirements, but also the impact on manual authoring of instances, automated data production, naïve consumers of the files, and on automated data extraction. The two primary decisions concern the treatment of text and the treatment of tabular displays as required by the Instructions.

5.1 Text

There are two approaches to handling text:

1. Basic: the text required by disclosures must appear in the instance with a context. Information in labels is supplemental, and no styling information can be provided.

    a. Pluses: Works with existing XBRL products and all information can be provided by the document author.

    b. Minuses: Displays redundant text (the labels) in many cases.

2. Linkbase text: the text paragraphs would be attached to the concepts (not the facts in the instance).

    a. Pluses: appears considerably better when rendered with today's XBRL enabled products.

    b. Minuses: extremely hard to manipulate when there are multiple variations of the same text in a given file. This is a situation very common in a prospectus filing. Authoring would also require a very

specialized tool so as to switch back and forth between the instance and the linkbases and maintain a fully XBRL valid result.

The first of these approaches was taken in the expectation that redundancy is a less severe problem (and a short term one) relative to the problems presented when authoring is made overly complex.

5.2 Tables

There were three approaches to handling tables, or, more precisely, documents in which a variety of different tables with differing layouts would be required.

1. No tuples.

    a. Pluses: Easy to extract data, and easy to put multiple prospectus data into a single instance.

    b. Minuses: Today's off-the-shelf XBRL viewing tools require user to be familiar with the concept of a Pivot table. Moreover, authoring tools do not yet support the interaction of multiple dimensions needed to handle this.

2. Tuples (for low-level grouping of data elements).

    a. Pluses: It is possible to define the tables required in the form, and create repeating rows of data, with nested elements. The use of dimensional modeling can be restricted to an obvious hierarchy (registrant, series and class).

    b. Minuses: The formatting of sets of tables (e.g., tables for different funds within the same prospectus) requires that the order of elements appearing within the instance be preserved by software applications and not all XBRL applications yet do so.

3. Table formatting tags (i.e., HTML-like markup) accompanied by a standard stylesheet.

    a. Pluses: Resulting file is very accessible to naïve end users, and the data is still available for analysis. Could be made compatible (though not required) with the base taxonomy.

    b. Minuses: Extremely difficult for generic XBRL enabled tools to render well. Standard stylesheet would become complex. Requires XPATH 2.0 to be fully robust with respect to namespaces.

All three styles were prototyped with data from the Form N-1A and option 2 is used, and appears in the form of the "Topic paragraph" and "Data paragraph" conventions.

5.3 Topics

Working from any reasonable sample of prospectuses, it is obvious from their tables of contents that disclosure documents differ as to how different topics required by the Instructions are grouped into sections and paragraphs. Two alternative modeling approaches are to use either XML Schema "choice" constructs or "substitution group" constructs.

1. Choice constructs. For example, the initial section of the Risk/Return Summary could allow either a sequence of a "Strategy" section followed by an "Objectives" section, *or* a single "Strategy or Objectives" section in which the individual paragraphs could be either "Strategy" *or* "Objective" topic paragraphs.

    a. Pluses: Only one set of topic paragraph types.

      b. Minuses: Does not allow for a single paragraph to cover different topics that are, in principle, meant for different sections of the document. Some widely used XBRL applications do not completely support the 'choice' construct.

2. A hierarchy of substitution groups. For example, there would be one group for "Objectives" that can only appear in "Objective" topic paragraphs, but another group of "Objectives and Strategies" topics that can appear in such paragraphs.

      a. Pluses: software applications that need to present prospectuses to users will be somewhat simpler, and document authors will have more freedom to treat different topics in individual paragraphs.

      b. Minuses: a strict hierarchy of topic groupings must be imposed, which will make the most common styles of disclosure easier than others.

Both styles were prototyped and the hierarchy of substitution groups approach was chosen. Prospectuses appear to mix strategy and risk discussions also when referring to objectives; therefore there should be no practical impact from limitation 2(b).

6. Physical Models

The figure below shows a physical model of the files (highlighted below) that would comprise the R/R taxonomy itself and how these would relate to other published files (from XBRL International, Inc.) and other optional parts of a given prospectus filing.

In the vast majority of cases neither the schema shown in the diagram as "FHR" nor its associated linkbases would be necessary; such files would contain FHR-specific topic tags and other extensions.

Figure 8. Example of files used for hypothetical filings.
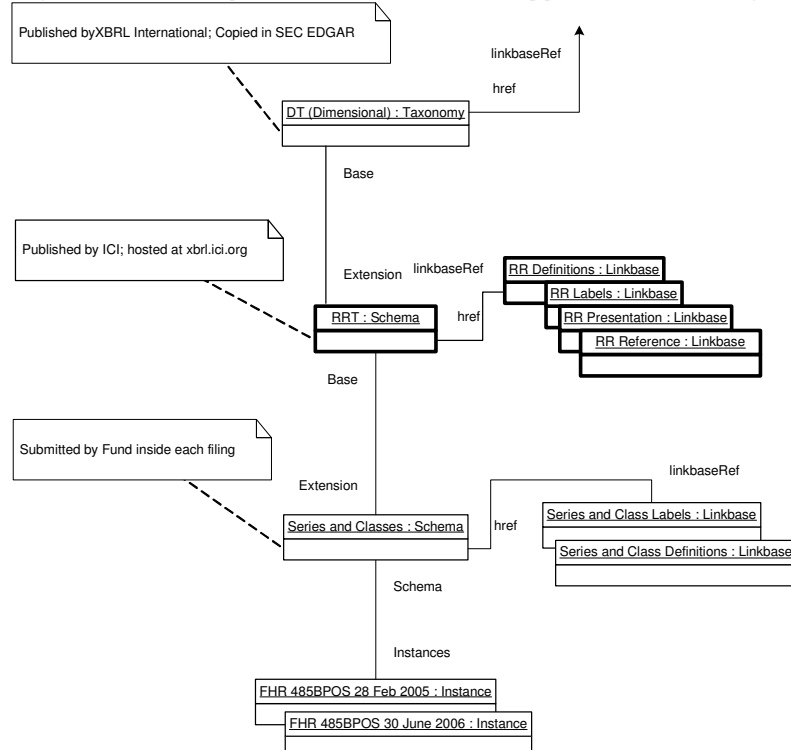
7. Requirements Trace

This table recapitulates the RRT Requirements and explains how an implementation of this architecture will satisfy them.

#	Requirement	How Architecture Satisfies
01	There MUST be exactly one tag or combination of tags for each numeric figure to be reported in SEC Form N-1A instructions for sections 1, 2 and 3.	Each section of the Instructions requiring a number has been identified and reference links will support every numeric item described there.
02	There MUST be at least one tag or combination of tags for each textual topic, heading, or textual explanation required by the instructions.	Each section of the Instructions requiring a disclosure has been identified and reference links will support each numeric item described there.
03	The tags MUST allow different levels and multiple paragraphs of textual detail to be reported by different funds, to the extent that the instructions permit.	Headings and Paragraphs are arranged in a hierarchy.
04	Any disclosures indicated by the instructions as potentially having footnotes MUST be actual XBRL text or number items, and not "abstract" headings.	Enforced in section 3 (Design Rules).
05	The taxonomies MUST allow the detection of whether the presentation ordering of disclosures is consistent with the ordering required by the instructions.	Where the ordering is rigid the architecture nests tuples that enforce ordering.
06	Tags appearing in the June 2005 US GAAP Investment Management extension taxonomy[2] MUST be considered for inclusion if their definitions are consistent and the tags in question are unlikely to be changed in the early 2007 release of the US taxonomies.	The dependence of taxonomy concepts in this architecture on typed definitions that differ from those available in the US GAAP IM taxonomy mean that the overlap will be quite small, and likely to be achieved through XBRL 'definition' links if at all.
07	The text (narrative) tags SHOULD allow different content for different Risk Return Summaries while retaining commonality of topic; for example, "currency risk narrative" is a common topic and therefore should be a tag, even though different funds will express their currency risk differently as text within that tag. The text (narrative) tags SHOULD cover 100% of the narrative disclosure elements required by Items 1, 2 and 3 of Form N-1A and over 90% of the distinct concepts reported in response to these narrative disclosure elements in a sizable sample of prospectuses.	The Topic and Topic Paragraph structure allows for any number of occurrences of topics (concepts) to be grouped with a heading or paragraph of explanation. The Data Paragraph structure allows for any number of occurrences of a numeric concept to be grouped with a heading or explanation paragraph. An initial sample of 22 prospectuses from 12 different registrants is being analyzed at this time.

#	Requirement	How Architecture Satisfies
08	The taxonomies MUST provide sufficient presentation oriented detail that widely available software applications yield a readable display of a valid instance document to knowledgeable users within no more than five mouse clicks.	The topic and paragraph structure allows for a flexible rendering that does not depend on the label linkbase (see section 2.2, "Labels are not disclosures"). The presentation hierarchy orders and nests the instance facts, but the author of the instance controls the order of presentation of everything inside of a data paragraph.
09	SEC review comments on the June 2005 US GAAP Investment Management extension taxonomy SHOULD be addressed where similar topics are addressed.	SEC review comments focused mainly on the completeness and coverage of the disclosures; requirements 01 and 02 above assume the use of a structured data set representing the Instructions.
10	The taxonomies or supporting materials MUST provide sufficient validation oriented detail to allow compliance review of completeness and consistency to be supported by automation.	The nested structure of topic and data paragraphs make XBRL calculation links ineffectual, but supporting stylesheets can perform similar validations.
11	The taxonomies MUST provide tags usable in related IM related reports and not force redundant concepts and other material to be produced to meet other needs.	Other taxonomies that adhere to the same architecture using the topic and data paragraph types will be able to reuse the same tags.
12	The taxonomies MUST enforce a consistent convention to be used across all filers for CIK, Series and Class identification of reports.	XBRL Dimensions are used to model the series and class identifiers; a supporting stylesheet provides a reference implementation for verifying CIK.
13	The taxonomies MUST enforce a consistent convention to be used across all filers for identifying master-feeder (each feeder having only one master) and fund of funds (many-to-many) relationships among different series identifiers.	See section 2.4 (Series, Class and Master-Feeder) for coverage.
14	The licensing terms of the published taxonomies MUST grant royalty-free use while preserving copyright ownership on all published files.	N/A
15	An EDGAR filing, with its RR instance and supporting taxonomy extensions, SHOULD NOT require more than twenty file attachments *before* the taxonomy is copied by the SEC into its own infrastructure.	There are 6 files comprising the RR Taxonomy, and each filing requires a registrant extension of three files, for a total of 10 files; see Figure 8.

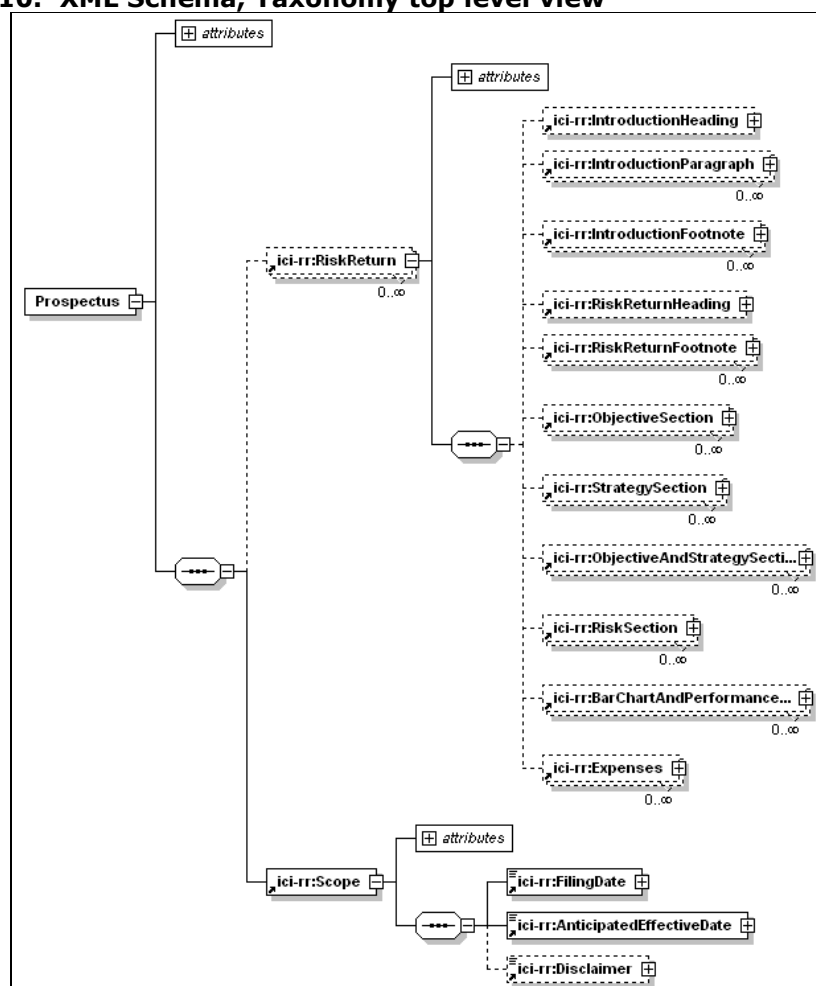| #	Requirement	How Architecture Satisfies
16	An EDGAR filing, with its instance and supporting taxonomy extensions, SHOULD NOT require more than ten separate file attachments *after* the taxonomies have been published at a stable location and copied by the SEC into its own infrastructure.	A single schema with presentation linkbase along with the instance (3 files total) will ordinarily be sufficient, because of the reduced need for special labels.
17	The taxonomies MUST be fully XBRL 2.1 compliant.	Implicit in the model of Figure 1.
18	The taxonomies MUST be valid according to the XBRL software implementation current at the SEC, even if this is more restrictive than XBRL 2.1 itself.	Sample instances and taxonomy fragments using this architecture have successfully been tested with these products. Incompatibilities occur mainly with calculation links, which play a limited role in this taxonomy.
19	Even though a fund prospectus is not a "financial report" within the definition of the XBRL International Financial Reporting Taxonomies Architecture (FRTA) 1.0, the taxonomies MUST comply with all mandatory rules in FRTA 1.0 except for named, justifiable and documented exceptions. Significant rules of this type concern documentation requirements, orderly and consistent use of links, careful attention to sign, debit and credit conventions.	Section 2.1 covers the majority of commonly encountered issues.
20	The taxonomies SHOULD comply with all recommended rules in FRTA 1.0 except for named and justified exceptions.	Section 2.1 covers these cases.

A XBRL taxonomy with this architecture, comprising 482 elements covering portions of items 2, and 3, was constructed as a prototype. In the figure, the orange "t" indicates a tuple, while a green "i" indicates a base level data item. This figure also shows part of a registrant's series and class hierarchy.

Figure 9. Fragment of sample taxonomy
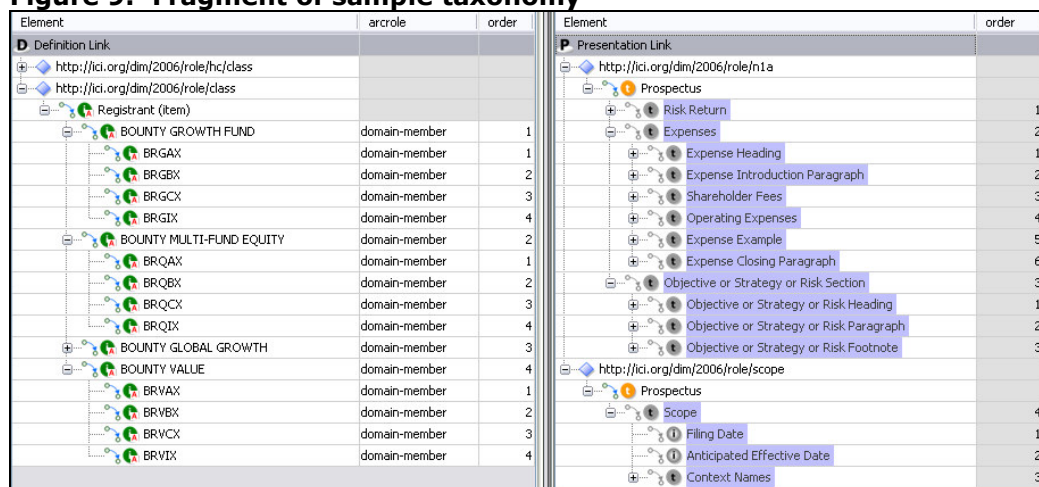
Developers familiar with XML Schema will recognize in the figure below that the major sections of the document, and their required subcomponents, appear as complex types consisting of a sequence of other elements.

Figure 10. XML Schema, Taxonomy top level view

8. References

Term	Reference
EDGAR	www.sec.gov/edgar.shtml
FRTA 1.0	www.xbrl.org/TaxonomyGuidance
SEC XBRL	www.sec.gov/spotlight/xbrl.htm
UML	www.vinci.org/uml/usecase.html
US GAAP IM Taxonomy	www.xbrl.org/us/fr/gaap/im/2005-06-28/us-gaap-im%20Summary%20Page.htm
XBRL 2.1	www.xbrl.org/Specification/XBRL-RECOMMENDATION-2003-12-31+Corrected-Errata-2005-11-07.rtf
XBRL Dimensions 1.0	www.xbrl.org/Specification/XDT-REC-2006-09-18.rtf
RRT Requirements	RR Taxonomy Requirements, RRT-001, Revision 004.

9. Document History

CCYY-MM-DD	Editor	Description
2006-07-17	Hamscher	Revision 000 for distribution to staff.
2006-07-18	Hamscher	Revision 001, addition of design rules for contexts and naming conventions.
2006-07-26	Hamscher	Revision 002, incorporating edits from Greg Smith, clarifying convention on context naming, and providing more detail on nested tuple structure.
2006-08-07	Hamscher	Revision 003, added implicit design goals to introductory paragraph. Clarified naming conventions on topic components, and included more detail on patterns of tuple and substitution group usage. Added a top-level diagram showing only an XML Schema viewpoint.
2006-11-13	Hamscher	Revision 004. Changed representation of the registrant / series / class hierarchy to use XBRL Dimensions 1.0. Introduced the Scope element and its children, ContextNames, to complement the dimensional model. Expanded the set of children to allow more flexible prospectus structure; this included the introduction of the Category elements in the Risk Return element. Added footnote marks to all headings and captions, and introduced Heading and Caption items.
2007-01-04	Hamscher	Revision 005 for distribution with taxonomy.
2007-05-06	Hamscher	Revision 006 with adjustments to diagrams so as to more closely correspond to final distribution.

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[1] For the development of the taxonomy, the entire text of the N-1A instructions has been analyzed into individually identifiable text fragments, and could itself be published as an XBRL linkbase to facilitate hyper-links.

[2] There are 9 concepts in the current US-GAAP Taxonomies' "Shareholder Expense Example" section, five of which might appear in N-1A Section 3. There are 34 concepts in the "General Fund Information" section, which appear throughout Form N-1A. Printouts are attached.