

1. Financial Report Semantic Object Properties

This section provides the properties of report elements. See the section on the logical model report elements for a summary overview.

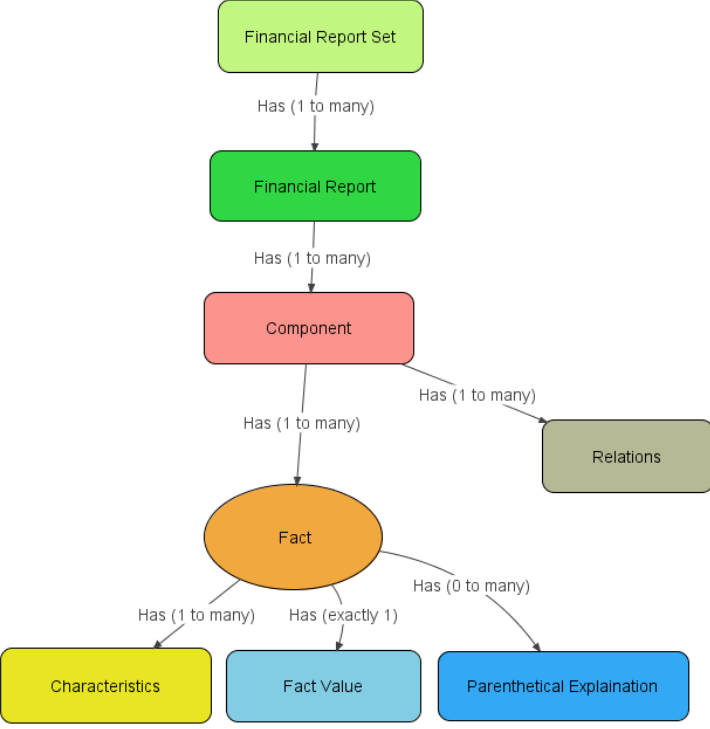
1.1. Reconciliation of financial report semantics terminology to XBRL Abstract Model 2.0 terminology:

Example	Financial Report Semantics and Dynamics Theory Object	XBRL Abstract Model 2.0 Object
<i>Financial statement portion of a 10-Q or 10-K; financial statement issued by a private entity</i>	Financial report – A financial statement plus supplementary financial information. Financial report can be broken down into components.	Document or Manifest
<i>See the examples from each rudimentary or primitive piece above</i>	Financial report rudiments – One of the primitive building blocks or objects of a financial report: financial report, component, characteristic, fact, parenthetical explanation, relation	Model Element
<i>Balance sheet, significant accounting policies, maturities of long-term debt</i>	Component – A portion of a financial report. Made up of facts which go together for some specific purpose and the relations between facts and relations between characteristics.	Cube, Cube Region
<i>Reporting entity with CIK number 1234567890; Legal entity of "consolidated entity"; Period of "2011-21-31"; Property, plant and equipment class of "Land"</i>	Characteristic – Describes a fact. Made up of a characteristic and the value of that characteristic.	Aspect
<i>Assets = Liabilities + Equity; Beginning cash + net cash flows = ending cash</i>	Relation – The relation from one object of a financial report to another object or objects.	Relation
<i>Value of 1000 for the concept "Cash and cash equivalents" for the legal entity "consolidated entity" for the period ended "December 31, 2010" expressed in US Dollars rounded to millions</i>	Fact – A single, observable, reported piece of information. Connection of characteristics, a value, traits of the value if numeric, and parenthetical information	Data Point
<i>Parenthetical explanation on the bottom of a page, a footnote to a financial fact</i>	Parenthetical explanation – provide additional descriptive information about a fact.	Footnote
<i>Roll up, roll forward, hierarchy</i>	Relation between concepts within the concept characteristic	Relation
<i>North America, United States, Canada</i>	Relations between values of a characteristic	Relation
<i>Balance sheet, then income statement, then statement of changes in equity, ...</i>	Relationship between components or the order or sequence of components	Relation
<i>Units, rounding, balance type, period type</i>	Property – Property or trait of an object.	Attribute

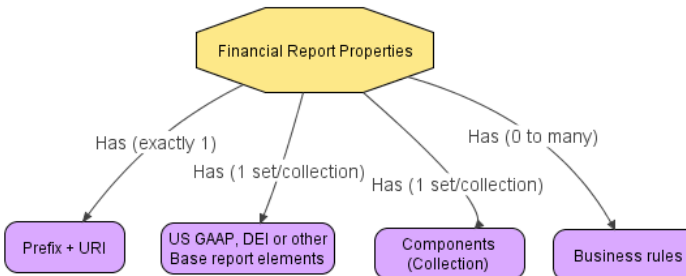
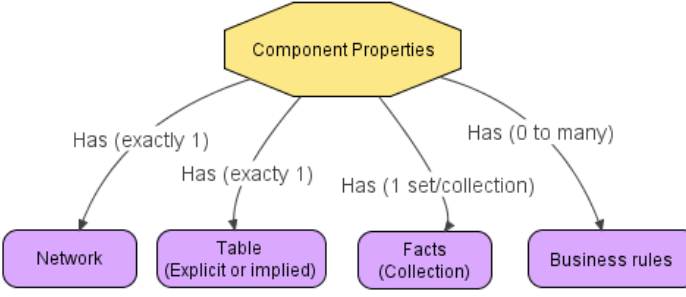
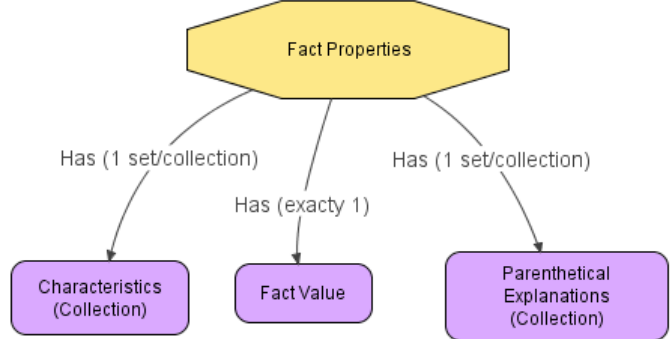
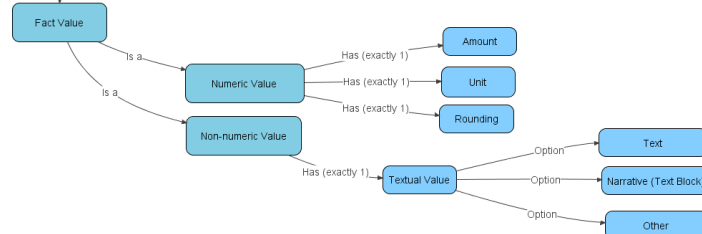


1.2. Semantic objects and their properties

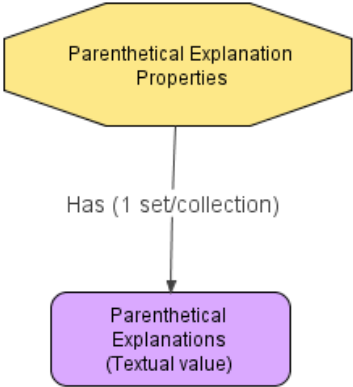
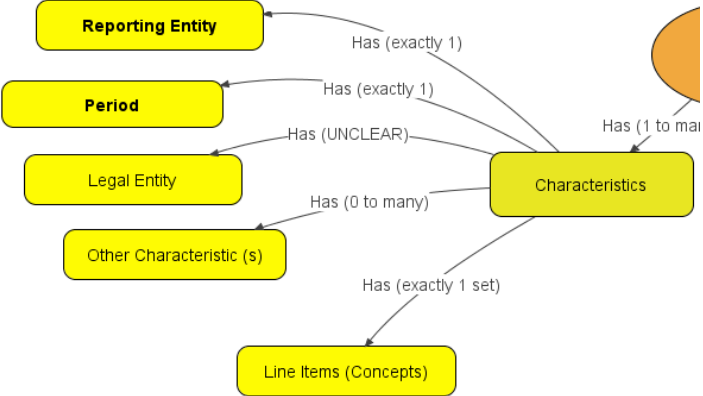
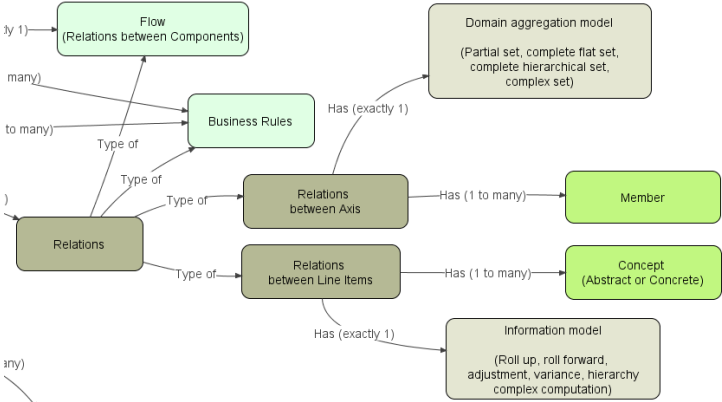
This section provides a more complete detailed explanation of the semantic objects of a financial report, including an SEC XBRL financial filing, the relations of those semantic objects, and the properties of those objects and relations. For a complete diagram of these semantics see [the PDF here.](#))

Semantic Object / Discussion	Graphical representation
<p>Overview of semantic objects: These are the fundamental or primitive building blocks of any financial report, no matter what the format (paper, HTML, PDF, Word, XBRL).</p> <p>A financial report set has 1 or more financial reports. For example, when you compare the financial information of one reporting entity to the financial information of one or more other reporting entities; the financial report set is that complete set of financial reports being compared.</p> <p>A financial report communicates facts.</p> <p>A component is a set of facts which goes together for some specific purpose.</p> <p>A fact is a single, observable, reportable piece of information. Facts have characteristics, a value, and they may have parenthetical explanations which further describe a fact.</p> <p>Characteristics describe facts.</p> <p>Facts and characteristics organized within a component can have relations.</p>	 <pre> graph TD A[Financial Report Set] -- "Has (1 to many)" --> B[Financial Report] B -- "Has (1 to many)" --> C[Component] C -- "Has (1 to many)" --> D((Fact)) C -- "Has (1 to many)" --> E[Relations] D -- "Has (1 to many)" --> F[Characteristics] D -- "Has (exactly 1)" --> G[Fact Value] D -- "Has (0 to many)" --> H[Parenthetical Explanation] </pre>




Semantic Object / Discussion	Graphical representation
<p>Financial Report: Financial reports communicate facts.</p> <p>A financial report is implemented as an XBRL instance and supporting XBRL taxonomies. The distinction between instance and taxonomy is a nature of XBRL, not a nature of a financial report.</p>	 <pre> graph TD FRP{{Financial Report Properties}} -- "Has (exactly 1)" --> PURI[Prefix + URI] FRP -- "Has (1 set/collection)" --> USGAAP[US GAAP, DEI or other Base report elements] FRP -- "Has (1 set/collection)" --> C[Components (Collection)] FRP -- "Has (0 to many)" --> BR[Business rules] </pre>
<p>Component: A component is a set of facts which go together for some specific purpose (defined by Financial Report Semantics and Dynamics Theory).</p> <p>A component is implemented as a network/table. Neither the US GAAP Taxonomy architecture nor the SEC defines precisely what a “network” or “table” is semantically.</p> <p>This is a notion rather than a physical thing.</p>	 <pre> graph TD CP{{Component Properties}} -- "Has (exactly 1)" --> N[Network] CP -- "Has (exactly 1)" --> T["Table (Explicit or implied)"] CP -- "Has (1 set/collection)" --> F[Facts (Collection)] CP -- "Has (0 to many)" --> BR[Business rules] </pre>
<p>Fact: A fact defines a single, observable, reportable piece of information contained within a financial report, or fact value, contextualized for unambiguous interpretation or analysis by one or more characteristics.</p> <p>Numeric fact values must also provide the additional traits “units” and “rounding” to enable appropriate interpretation of the numeric fact value. Facts may have zero or many parenthetical explanations which provide additional descriptive information related to the fact.</p> <p>Facts are implemented as XBRL simple facts. Compound facts (i.e. tuples) are not allowed per the US GAAP Taxonomy Architecture.</p>	 <pre> graph TD FP{{Fact Properties}} -- "Has (1 set/collection)" --> C["Characteristics (Collection)"] FP -- "Has (exactly 1)" --> FV[Fact Value] FP -- "Has (1 set/collection)" --> PE["Parenthetical Explanations (Collection)"] </pre>
<p>Fact Value: Facts have a value.</p>	 <pre> graph TD FV[Fact Value] -- "is a" --> NV[Numeric Value] FV -- "is a" --> NNV[Non-numeric Value] NV -- "Has (exactly 1)" --> A[Amount] NV -- "Has (exactly 1)" --> U[Unit] NV -- "Has (exactly 1)" --> R[Rounding] NNV -- "Has (exactly 1)" --> TV[Textual Value] TV -- "Option" --> T[Text] TV -- "Option" --> NB["Narrative (Text Block)"] TV -- "Option" --> O[Other] </pre>

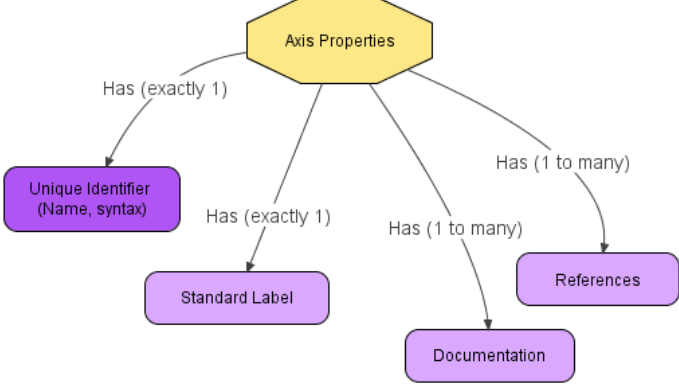
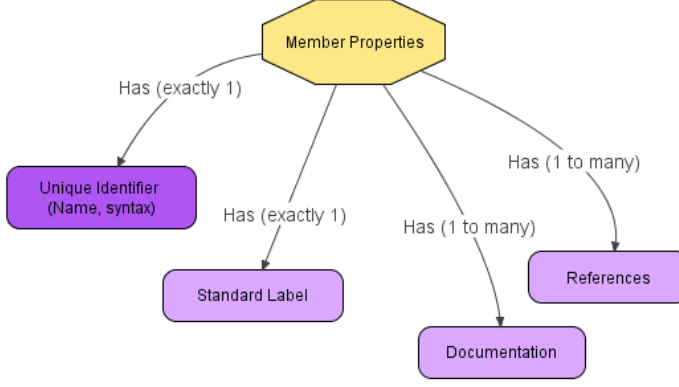
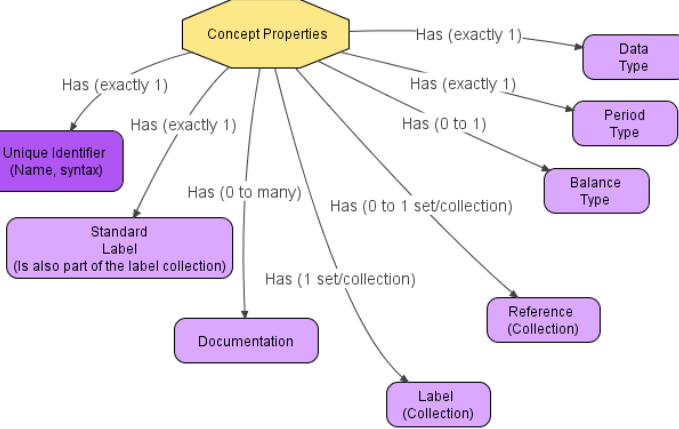


Semantic Object / Discussion	Graphical representation
<p>Parenthetical explanations: Financial facts have parenthetical explanations which provide additional descriptive information about the fact.</p> <p>Parenthetical explanations are implemented as XBRL footnotes.</p>	
<p>Characteristics: Facts have characteristics. Characteristics describe facts.</p> <p>Characteristics are implemented using several different technical syntax in XBRL; as axes (i.e. set of [Axis]), [Member]s, [Line Items]; reporting entity and period are part of the XBRL instance context element technical syntax, but these are clearly axis.</p>	
<p>Relations: Characteristics of a financial fact may be related. Facts may be related. Components may be related.</p> <p>Flow is the relationship between components.</p> <p>Member aggregation model (or domain aggregation model) is the relations between members of a domain for an [Axis].</p> <p>Information model is the relation between concepts within a set of [Line Items].</p> <p>Business rules are relations between facts and characteristics.</p>	

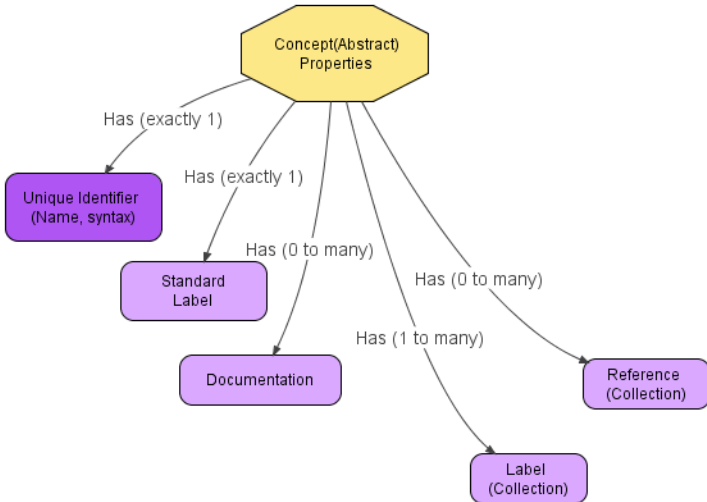
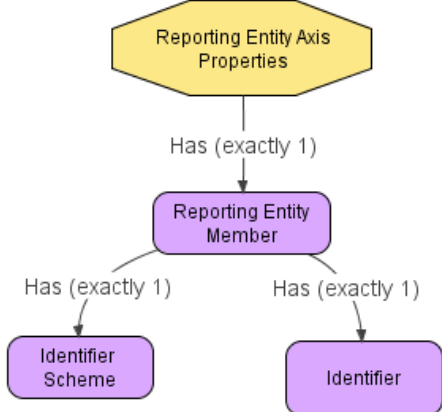
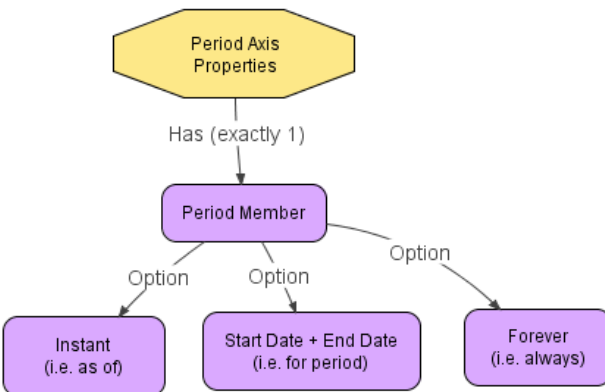


Semantic Object / Discussion	Graphical representation
<p>Relations: Relations have properties. A relation is between two report elements. A relation has a role.</p>	
<p>Network: Semantics of a network are undefined.</p> <p>Networks are implemented as XBRL networks.</p> 	
<p>Table: Semantics of a table are undefined.</p> <p><i>HINT:</i> While the semantics of a [Table] are clearly defined from a report logical model perspective, they are undefined from a domain perspective.</p> <p>Tables are implemented either explicitly as a [Table] or XBRL Dimensions hypercube or implicitly (i.e. if concepts are not associated with a hypercube) as the relations within a network.</p> <p>Said another way, the reporting entity characteristic and period characteristic are required, XBRL Dimensions can be used to create additional characteristics.</p>	

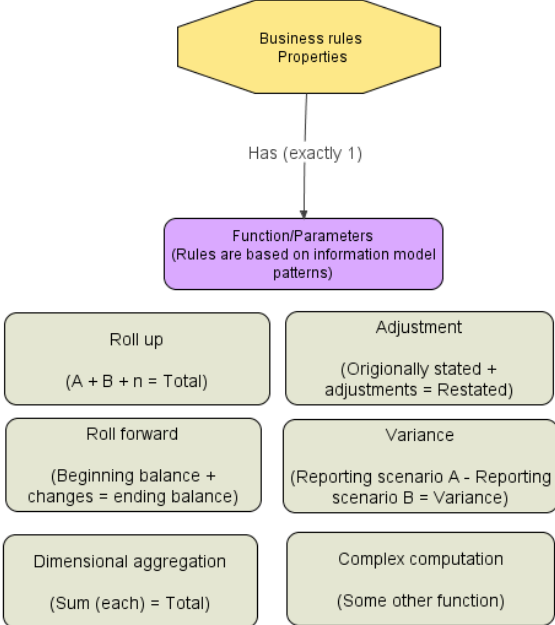
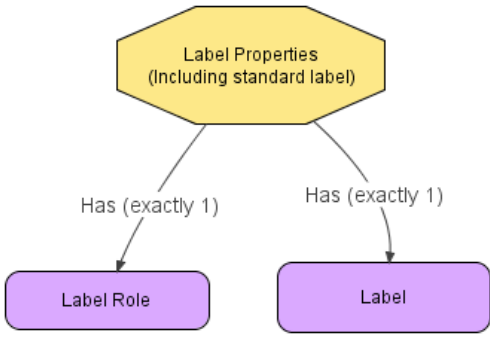
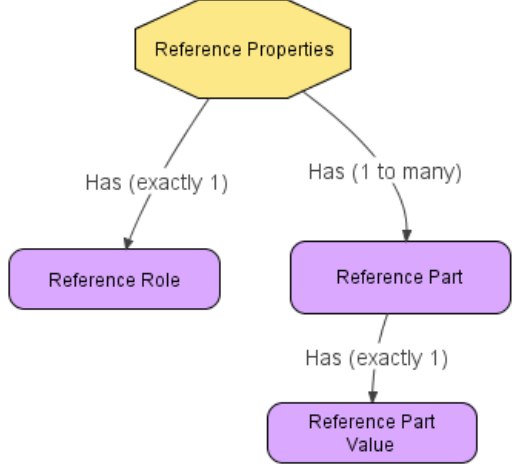


Semantic Object / Discussion	Graphical representation
<p>Axis: An [Axis] is used to articulate a characteristic.</p> <p>An [Axis] is abstract and therefore can never contain a value. Therefore the data type, period type, and balance have no semantic meaning. SEC EFM requires specific values for these attributes.</p> <p>There are multiple ways characteristics are implemented: as an [Axis], as a context entity identifier, and as a context period.</p>	 <pre> graph TD AP{{Axis Properties}} -- "Has (exactly 1)" --> UI[Unique Identifier (Name, syntax)] AP -- "Has (exactly 1)" --> SL[Standard Label] AP -- "Has (1 to many)" --> D[Documentation] AP -- "Has (1 to many)" --> R[References] </pre>
<p>Member: A [Member] is a possible value of an [Axis]; together they are used to articulate a characteristic.</p> <p>A [Member] is abstract and therefore can never contain a value. Therefore the data type, period type, and balance have no semantic meaning. SEC EFM requires specific values for these attributes.</p>	 <pre> graph TD MP{{Member Properties}} -- "Has (exactly 1)" --> UI[Unique Identifier (Name, syntax)] MP -- "Has (exactly 1)" --> SL[Standard Label] MP -- "Has (1 to many)" --> D[Documentation] MP -- "Has (1 to many)" --> R[References] </pre>
<p>Concepts: Concepts describe facts in such a way that they can contain values. As such, concepts therefore have a data type, period type, balance type are important.</p> <p>Concepts are implemented as (a) XBRL Dimensions primary items if they participate in a hypercube or if they do not participate in a hypercube (b) XBRL concepts.</p> <p><i>HINT:</i> It is recommended that all concepts be implemented as XBRL Dimensions primary items, mixing the two can cause problems.</p>	 <pre> graph TD CP{{Concept Properties}} -- "Has (exactly 1)" --> UI[Unique Identifier (Name, syntax)] CP -- "Has (exactly 1)" --> SL[Standard Label (Is also part of the label collection)] CP -- "Has (0 to many)" --> D[Documentation] CP -- "Has (1 set/collection)" --> L[Label (Collection)] CP -- "Has (0 to 1)" --> DT[Data Type] CP -- "Has (exactly 1)" --> PT[Period Type] CP -- "Has (0 to 1)" --> BT[Balance Type] CP -- "Has (0 to 1 set/collection)" --> RC[Reference (Collection)] </pre>



Semantic Object / Discussion	Graphical representation
<p>Abstract: [Line Items] which are abstract can never contain a value. Therefore the data type, period type, and balance have no semantic meaning. SEC EFM requires specific values for these attributes.</p> <p><i>HINT:</i> Abstract report elements are implemented similar to concepts, but have an attribute "abstract" whose value is "true". Note that the term "abstract" is not being used here to mean the value of the XML Schema abstract attribute.</p> <p><i>NOTE:</i> Documentation is optional for abstract concepts.</p> <p><i>HINT:</i> It is recommended that all concepts be implemented as XBRL Dimensions primary items, mixing the two can cause problems.</p>	 <pre> graph TD A{{Concept(Abtract) Properties}} -- "Has (exactly 1)" --> B[Unique Identifier (Name, syntax)] A -- "Has (exactly 1)" --> C[Standard Label] A -- "Has (0 to many)" --> D[Documentation] A -- "Has (1 to many)" --> E[Label (Collection)] A -- "Has (0 to many)" --> F[Reference (Collection)] </pre>
<p>Reporting Entity is a type of [Axis], just implemented as a different technical syntax.</p>	 <pre> graph TD A{{Reporting Entity Axis Properties}} -- "Has (exactly 1)" --> B[Reporting Entity Member] B -- "Has (exactly 1)" --> C[Identifier Scheme] B -- "Has (exactly 1)" --> D[Identifier] </pre>
<p>Period is a type of [Axis], just implemented using a different technical syntax.</p>	 <pre> graph TD A{{Period Axis Properties}} -- "Has (exactly 1)" --> B[Period Member] B -- "Option" --> C[Instant (i.e. as of)] B -- "Option" --> D[Start Date + End Date (i.e. for period)] B -- "Option" --> E[Forever (i.e. always)] </pre>



Semantic Object / Discussion	Graphical representation
<p>Business rules: A business rule is a type of relation.</p>	 <pre> graph TD BRP{{Business rules Properties}} -- "Has (exactly 1)" --> FP[Function/Parameters (Rules are based on information model patterns)] FP --- R1[Roll up (A + B + n = Total)] FP --- R2[Adjustment (Originally stated + adjustments = Restated)] FP --- R3[Roll forward (Beginning balance + changes = ending balance)] FP --- R4[Variance (Reporting scenario A - Reporting scenario B = Variance)] FP --- R5[Dimensional aggregation (Sum (each) = Total)] FP --- R6[Complex computation (Some other function)] </pre>
<p>Label: The lang="en-US" is required, therefore it never needs to be entered by the user.</p>	 <pre> graph TD LP{{Label Properties (Including standard label)}} -- "Has (exactly 1)" --> LR[Label Role] LP -- "Has (exactly 1)" --> L[Label] </pre>
<p>References: Users will never add references in their filer extension taxonomies; they are not allowed to by the SEC. References are only used by the base taxonomies.</p> <p>As such, the references themselves don't need to be reviewed; but they are used to review concepts which possess references.</p>	 <pre> graph TD RP{{Reference Properties}} -- "Has (exactly 1)" --> RR[Reference Role] RP -- "Has (1 to many)" --> RPart[Reference Part] RPart -- "Has (exactly 1)" --> RPartVal[Reference Part Value] </pre>

