

Terminology of a Financial Report (Things and relations between things which make up a financial report)

The following is a summary of the things and relations between things that exist in the domain of a financial report¹. The table is a summary of information about the semantics, dynamics, and mechanics articulated by the *Financial Report Semantics and Dynamics Theory*² and observed in XBRL-based public company financial filings to the SEC (set of 6,751 10-Ks submitted during 2014 reporting season). Both the FASB conceptual framework and common practice make up reporting practices (i.e. the FASB does not explicitly state every reporting rule, existing reports explicitly instantiate reporting rules and practices).

Axioms in Pseudo Human Readable Controlled Natural Language	Description	Empirical evidence from XBRL-based public company financial filings	First order logic	Category	SECXBRL.info API syntax
There exists the notion of Thing .	A thing is something that exists in the real world, in the problem domain or area of concern. "Nothing" is the opposite of thing.			TBox	
There exists the notion of Individual . (I think that all of these should be of the pattern Every Individual is a Thing.)	An individual is some specific item that exists in reality.			TBox	
There exists the notion of Class .	A class is a set of individuals that have one or more distinguishing features in common (are similar).			TBox	
There exists the notion of Property .	A property is a trait, quality, feature, attribute of an individual, for example the property of being male of a person, of being filed of a report, and so on.			TBox	
There exists the notion of Relation .	Relations hold true among universals and defined classes.			TBox	
Every Relation is a Property .	A relation is a type of property. All relations are properties. ??????			TBox	
Every Business Rule is a Relation .	A business rule is a type of relation.			TBox	
Every Key Financial Ratio is a Relation .	A key financial ratio is a type of business rule.			TBox	

¹ For more information see *Understanding the Mechanics of a Digital Financial Report*, <http://www.xbrlsite.com/2015/Library/UnderstandingTheMechanicsOfDigitalFinancialReport.pdf>

² For more information see the *Financial Report Semantics and Dynamics Theory*, <http://xbrl.squarespace.com/fin-report-sem-dyn-theory/>

Every Is_A is a Relation .	Relations that hold between classes is the “Is A” or “is a subtype of” relation. (Relations between universals)			TBox	
Every Part_Of is a Relation .	Relations that hold between individuals is the “part of” relation. A part-of relation is something composed of parts but the parts do not add up mathematically. (Relations between particulars)			TBox	
Every Part_Whole is a Relation .	Relations that hold between individuals is the “part of some whole” relation. A part-whole relation is something composed exactly of their parts and nothing else or more where the parts add up to that whole.			TBox	
Every Has_Property is a Relation .	Relations that hold between universals and particulars. (Relations between universals and particulars) ?????			TBox	
Every Has_Part is a Relation .	Relation that indicates that a thing is a required part of some other thing.	Not sure if this is necessary, this could be same as Has_Property. Part_Of states that something is part of (i.e. can be part of) something else; Has_Part states that the part is a REQUIRED part ?????		TBox	
Every Report is a Thing .	A report is about the financial position, financial condition, transactions, events, circumstances of an economic entity.	A set of 6,751 XBRL-based public company financial reports analyzed all of which are 10-K filings.		TBox	
Every Economic Entity is a Property .	Economic or accounting entity which provides a report.	6,751 had an economic entity articulated in two ways. First, by entity/identifier which was the CIK number of the filer. Second, the concept dei:EntityRegistrantName and dei:EntityCentralIndexKey existed within every report.		TBox	

Every Component is a Thing .	A report is made up of pieces. The pieces of a report are called a component. A component contains or groups a sets of facts. (An equivalent term for Component is Report Fragment)	497,294 components (good effort to measure, but there are some issues) existed within 6,751 reports. A component is identified a combination of the network identifier and table names within a network. Every fact that does not exist within an explicit table exists within an implied table.		TBox	
Every Fact is a Thing .	A fact is an abstract notion which represents a fact value and a set of characteristics which uniquely differentiate that fact value from any other reported fact value. A fact is reported and can be organized into components and described by characteristics.	8,816,913 facts exist within the 6,751 reports. Each is uniquely identifiable as a result of the facts characteristics.		TBox	
Every Characteristic is a Thing .	Characteristics describe and distinguish facts contained within a component from other facts. (An equivalent term for Characteristic is Aspect)	426,258 characteristics existed on 8,816,913 facts which existed in 6,751 reports. Every one of the 8,816,913 facts had three characteristics: Economic entity, Period, and concept. Other facts had additional characteristics expressed as an [Axis].		TBox	
Every Parenthetical Explanation is a Thing .	A parenthetical explanation provides additional descriptive information about a fact.	27,909 parenthetical explanations (XBRL footnotes) exist within the 6,751 reports. Every XBRL instance has some set of (0 to many) XBRL footnotes which is required to be connected to a fact.		TBox	
Every Block is a Thing .	A block is a subset of a component that has exactly one concept arrangement pattern. A block is a part of a component; a component is made up of one to many blocks. (An equivalent term for Block is Arrangement)	Not measured yet, but each of the 497,294 components can be located and broken down into blocks by using an algorithm to determine which pieces of the component is a roll up (i.e. XBRL calculations exist), a roll forward (i.e. a beginning and ending preferred label role exists in XBRL presentation relations), and so on.		TBox	

Every Slot is a Thing .	A slot is simply the idea of an allotted place in an block or arrangement where something can be logically and sensibly placed. ??????	A slot is an abstract notion, not observable. (A slot seems to be a lot like a what a programmer thinks of as a method)		TBox	
Every Report <i>Has_Property</i> Economic Entity .	An economic/accounting or reporting entity is created by creating a new instance of identifier. For example the CIK number of a public company which reports to the SEC.	6,751 had an economic entity articulated in two ways. First, by entity/identifier which was the CIK number of the filer. Second, the concept dei:EntityRegistrantName and dei:EntityCentralIndexKey existed within every report.		ABox	
Every Report <i>Has_Property</i> Components .	A report has the property of having some set of components.	497,294 components existed within 6,751 reports. A component is identified a combination of the network identifier and table names within a network. Every fact that does not exist within an explicit table exists within an implied table.		ABox	
Every Component <i>Has_Property</i> Facts .	A component has the property of having some set of facts.	What amounts to a table of facts (fact table) exists for every report in the set of 6,751.		ABox	
Every Fact <i>Has_Property</i> Characteristics .	A fact has the property of having some set of characteristics.	Each column of the fact table represent a characteristic (with the exception of the fact value and units and decimals for numeric fact values).		ABox	
Every Economic Entity <i>Is_A</i> Characteristic .	The economic entity (reporting entity) of a fact is a characteristic of the fact. (required by XBRL)	8,816,913 facts each had an economic entity (reporting entity) as a characteristic.		ABox	
Every Period <i>Is_A</i> Characteristic .	The period (calendar period) of a fact is a characteristic of the fact. (required by XBRL)	8,816,913 facts each had a period (calendar period) as a characteristic.		ABox	
Every Concept <i>Is_A</i> Characteristic .	The concept of a fact is a characteristic of the fact. (required by XBRL)	8,816,913 facts each had a concept as a characteristic.		ABox	
Every Characteristic <i>Is_A</i> Slot .	Other characteristics can be added to a fact as deemed appropriate	406,005 other characteristics were added to facts using US GAAP XBRL Taxonomy [Axis] or extension [Axis] create by reporting entity.		ABox	

Every FactValue is a Property .	A fact value is the numeric, nonnumeric, or prose which is the value of the fact.	8,816,913 facts exist within the 6,751 reports and every fact had exactly one fact value.		TBox	
Every NumericFactValue is a FactValue .	A numeric fact value is the numeric.	Not measured, but known to exist.		TBox	
Every NonnumericFactValue is a FactValue .	A fact value is the nonnumeric.	Not measured, but known to exist.		TBox	
Every ProseFactValue is a FactValue .	A fact value is the prose.	Not measured, but known to exist.		TBox	
Every Fact <i>Has_Property</i> FactValue .	A fact has the property of having exactly one fact value.	8,816,913 facts exist within the 6,751 reports and every fact had exactly one fact value.		ABox	
Every Units is a Property .	A fact value which is numeric has the property of units. ?????? (Is this a property or a thing? Normally things are singular. Some people would argue that units is an aspect/characteristic)	Not measured, but every numeric fact is required to have units per the XBRL specification.		TBox	
Every Decimals is a Property .	A fact value which is numeric has the property of decimals. ?????? (Is this a property or a thing? Normally things are singular.)	Not measured, but every numeric fact is required to have decimals per the XBRL specification.		TBox	
Every NumericFactValue <i>Has_Property</i> Units .	A fact value that is numeric is required to have the property of units which indicates the units of the numeric value.	Not measured, but XBRL validation requires numeric facts to have a units.		ABox	
Every NumericFactValue <i>Has_Property</i> Decimals .	A fact value that is numeric is required to have the property of units which indicates the units of the numeric value.	Not measured, but XBRL validation requires numeric facts to have a decimals.		ABox	
Every Fact <i>Has_Property</i> Parenthetical Explanations .	A fact has the property of having zero to many parenthetical explanations.	27,909 parenthetical explanations (XBRL footnotes) exist within the 6,751 reports and each is associated with a fact. Parenthetical explanations may be associated with 1 to many facts.		ABox	
Every Arrangement Pattern is a Thing .	An arrangement pattern is a property of a set of relations (Networks, Axis, Line Items)	In the process of being measured; but it has been observed that there are roll ups, roll forwards, adjustments, and hierarchies with reports observed.		TBox	

Every Concept Arrangement Pattern is an Arrangement Pattern .	Concept arrangement patterns are relations between the Concepts and Abstracts which make up a set of primary items (or [Line Items])	Arrangement patterns is broken into two groups: member arrangement patterns for [Axis] (dimensions) and concept arrangement patterns for [Line Items] (primary items).		TBox	
Every Member Arrangement Pattern is an Arrangement Pattern .	Member arrangement patterns are relations between the set of [Member]s of a dimension (or [Axis])	Arrangement patterns is broken into two groups: member arrangement patterns for [Axis] (dimensions) and concept arrangement patterns for [Line Items] (primary items).		TBox	
Every Component Arrangement Pattern is an Arrangement Pattern .	A network arrangement pattern is the sequence or order of the set of components which make up a report.	Measured 495,825 networks which contained 497,177 components (approximate) in set of 6,751; no approach is specified by SEC to sequence components however SEC does specify how to order networks.		TBox	
Every Text Block is a Concept Arrangement Pattern .	A [Text Block] is prose which is reported within one fact.	Measured by counting report elements with the nonnum:textBlockItemType data type; 410,908 text blocks in set of 6,751 reports (very accurate).		TBox	
Every Roll Up is a Concept Arrangement Pattern .	A roll up has the mathematical pattern: Concept A + Concept B + Concept N = Total	Measured by counting XBRL calculation relations, 122,274 roll ups in set of 6,751 reports (very accurate).		TBox	
Every Roll Forward is a Concept Arrangement Pattern .	A roll forward has the mathematical pattern: Beginning balance + Additions – Subtractions = Ending balance	Measured by counting [Roll Forward], beginning and ending preferred label role in XBRL presentation relations; 40,845 roll forwards in set of 6,751 reports (approximate).		TBox	
Every Adjustment is a Concept Arrangement Pattern .	A roll forward has the mathematical pattern: Originally stated balance + Adjustments = Restated balance	In the process of being measured; but it has been observed that there are adjustments within reports observed.		TBox	
Every Hierarchy is a Concept Arrangement Pattern .	A hierarchy has the mathematical pattern: No mathematical relationships (I don't like the term hierarchy, this might be better called "Set" or "Group" or "Collection") ??????	Measured by process of elimination; if a block is not a roll up, roll forward, adjustment, or text block; then it must be a hierarchy (or something else); 180,403 hierarchies in set of 6,751 reports (approximate).		TBox	

Every Roll Up <i>Has_Property</i> Total .	Every roll up has the part “total” which is the sum of the concepts which make up that total.	It has been observed that every roll up has a total which is the root concept in the XBRL calculation relations.		ABox	
Every Roll Forward <i>Has_Property</i> Beginning Balance .	Every roll forward has the part “Beginning Balance” which is an instant and the beginning part of the roll forward.	It has been observed that every roll forward has a preferred label role with a value of “period start label” on a concept which is of instant period type.		ABox	
Every Roll Forward <i>Has_Property</i> Ending Balance .	Every roll forward has the part “Ending Balance” which is an instant and the beginning part of the roll forward.	It has been observed that every roll forward has a preferred label role with a value of “period end label” on a concept which is of instant period type.		ABox	
Every Roll Forward <i>Has_Property</i> Change .	Every roll forward has the part “change” which is the mathematical difference between the ending and beginning balance.	While the total change is not reported generally (with one exception of the cash flow statement which reports net cash flow); the change in a roll forward can be detected by observing all the fact in the fact table which are of period type duration		ABox	
Every Adjustment <i>Has_Property</i> Originally Stated Balance .	Every adjustment has the part “originally stated balance” which is an instant and the beginning part of the adjustment.	Adjustments are relatively rare and almost universally represented incorrectly within XBRL-based public company filings. Should be an instant with a preferred label role indicating concept is originally stated balance.		ABox	
Every Adjustment <i>Has_Property</i> Restated Balance .	Every adjustment has the part “restated balance” which is an instant and the ending part of the adjustment.	Adjustments are relatively rare and almost universally represented incorrectly within XBRL-based public company filings. Should be an instant with a preferred label role indicating concept is restated balance.		ABox	
Every Adjustment <i>Has_Property</i> Adjustment .	Every adjustment has the part “adjustment” which is the mathematical difference between the restated and originally stated balance.	While the adjustment is not reported generally; the “adjustment” in an adjustment can be detected by observing all the fact in the fact table which are of period type duration		ABox	

US GAAP Based, SEC-style Financial Report

The following is a summary of the things and relations between things that extend the financial report and exist in an SEC-style financial report³.

Axioms in Pseudo Human Readable Controlled Natural Language	Description	Empirical evidence from XBRL-based public company financial filings	First order logic	Category	SECXBRL.info API syntax
Every Report <i>Has_Property</i> Document type .	Document type is a required property of a report.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Report <i>Has_Property</i> Document period end date .	Document period end date (i.e. the current balance sheet date) is a required property of a report.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Report <i>Has_Property</i> Amendment flag .	Amendment flag is a required property of a report.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Report <i>Has_Property</i> Report fiscal year focus .	Report fiscal year focus is a required property of a report.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Report <i>Has_Property</i> Report fiscal period focus .	Report fiscal period focus is a required property of a report.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Economic Entity <i>Has_Property</i> Entity registrant name .	Entity registrant name is a required property of an economic entity.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Economic Entity <i>Has_Property</i> Entity central index key .	Entity central index key is a required property of an economic entity.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	

³ For more information see *Understanding the Mechanics of an SEC-type XBRL-based Digital Financial Report*, <http://www.xbrlinfo.com/2015/Library/UnderstandingTheMechanicsOfAnSECTypeDigitalFinancialReport.pdf>

Every Economic Entity <i>Has_Property</i> Standard industry classification.	Standard industry classification is a required property.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Economic Entity <i>Has_Property</i> Current fiscal year end.	Current fiscal year end is a required property of an economic entity.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Economic Entity <i>Has_Property</i> Current reporting status.	Current reporting status is a required property of an economic entity.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Economic Entity <i>Has_Property</i> Voluntary filer status.	Voluntary filer status is a required property of an economic entity.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Economic Entity <i>Has_Property</i> Entity filer category.	Entity filer category is a required property of an economic entity.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Economic Entity <i>Has_Property</i> Well known seasoned issuer.	Well known seasoned issuer is a required property of an economic entity.	6,751 reports in the set of 6,751 are consistent with this. Required by EFM and enforced by SEC inbound validation.		ABox	
Every Level 1 Text Block is a Block.	Level 1 Text Blocks (note level text blocks) which contain information for each note follow immediately after each statement, one note per network.	The EFM specifies Level 1, Level 2, Level 3 text blocks and each of these types is made apparent in the US GAAP XBRL Taxonomy. As such, the different types can be distinguished, but I have not done so yet.		TBox	
Every Level 2 Text Block is a Block.	Level 2 Text Blocks (policy level text blocks) must follow immediately after the note text blocks.	The EFM specifies Level 1, Level 2, Level 3 text blocks and each of these types is made apparent in the US GAAP XBRL Taxonomy. As such, the different types can be distinguished, but I have not done so yet.		TBox	

Every Level 3 Text Block is a Block .	Level 3 Text Blocks (disclosures level text blocks) must follow immediately after the policy text blocks.	The EFM specifies Level 1, Level 2, Level 3 text blocks and each of these types is made apparent in the US GAAP XBRL Taxonomy. As such, the different types can be distinguished, but I have not done so yet.		TBox	
Every Level 4 Detail is a Block .	Level 4 Detail (disclosure detail level) must follow immediately after the disclosure level text blocks)	Essentially, anything that is not a type of text block is detail.		TBox	
Every Level 3 Text Block <i>Part_Of Level 1 Text Block</i>	A Level 3 text block conveys information which is also conveyed in some Level 1 text block which exists.	By induction and per EFM, every Level 3 text block must be part of some note represented by a Level 1 text block.		TBox	
Every Level 4 Detail <i>Part_Of Level 1 Text Block</i>	A Level 4 Detail disclosure conveys information which is also conveyed in some Level 1 text block which exists.	By induction and per EFM, every Level 4 detail must be part of some note represented by a Level 1 text block.		TBox	
Every Level 4 Detail <i>Equivalent_To Level 3 Text Block</i>	A Level 4 Detail disclosure conveys information which is also conveyed in some Level 3 text block which exists.	This seems logical, however this may not be a requirement of the EFM. This is unclear.		TBox	

US GAAP Based Financial Report⁴ (including SEC-style financial report and private company financial report)

The following is a summary of the things and relations between things that extend the SEC-style financial report (really, these are applicable to any US GAAP based financial report):

Axioms in Pseudo Human Readable Controlled Natural Language	Description	Empirical evidence from XBRL-based public company financial filings	First order logic	Category	SECXBRL.info API syntax
Every Disclosure is a Thing .	A disclosure is a set of one or more blocks which together make up something that is disclosed within a financial report.	The US GAAP XBRL Taxonomy can be broken down into approximately 1,000 specific disclosures using three approaches: Level 3 text blocks indicate disclosures, Level 4 detailed disclosures in public company filings indicate disclosures, the US GAAP XBRL Taxonomy itself can indicate disclosures. Names can be assigned to each identified disclosure.		TBox	
Every Topic is a Thing .	A topic can be used to organize disclosures (disclosures can be organized by topic): Because there are so many different disclosures; the notion of a topic was created as a way to organize or categorize disclosures into sensible groups.	The FASB publishes financial reporting standards which can be organized into approximately 120 topics.		TBox	
Every Exemplar is a Thing .	An exemplar ⁵ is a disclosure which has been made within some financial report which has been submitted to the SEC and serves as an example of what a disclosure might look like.	An exemplar is simply any disclosure from an report filed with the SEC that can be observed.		TBox	
Every Prototype is a Thing .	A prototype ⁶ describes a disclosure.	A prototype is something that anyone can make up as what they consider a good example of the pieces of a specific disclosure.		TBox	

⁴ See *Financial Report Semantics and Dynamics Theory*, <http://xbrl.squarespace.com/fin-report-sem-dyn-theory/>

⁵ See *Prototype Theory*, http://en.wikipedia.org/wiki/Prototype_theory#Categories

⁶ See *Prototype Theory*, http://en.wikipedia.org/wiki/Prototype_theory

Every Disclosure <i>Has_Property Topic</i> .	A disclosure can be organized within some topic.	Every disclosure can be organized into one of the 120 or so topics.		ABox	
Every Component <i>Has_Property Disclosure</i> .	A component is used to represent disclosures which are reported within a financial report.	Every component within every report can be identified as being a complete disclosure or some part of a disclosure.		ABox	
Every Primary Financial Statement is a Disclosure .	Primary financial statements are considered disclosures in this model; some people might call this by some other term.	For convenience.		TBox	
Every Balance sheet is a Primary Financial Statement .	A balance sheet or statement of financial position.	Defined by conceptual framework.		TBox	
Every Income Statement is a Primary Financial Statement .	An income statement or statement of financial condition.	Defined by conceptual framework.		TBox	
Every Statement of Comprehensive Income is a Primary Financial Statement .	A statement of comprehensive income.	Defined by conceptual framework.		TBox	
Every Cash flow Statement is a Primary Financial Statement .	A cash flow statement.	Defined by conceptual framework.		TBox	
Every Statement of Changes in Equity is a Primary Financial Statement .	A statement of changes in equity.	Defined by conceptual framework.		TBox	
Every Statement of Income and Comprehensive Income is a Primary Financial Statement .	A combined income statement and statement of comprehensive income.	Allowed by conceptual framework.		TBox	
Every Report <i>Has_Part Balance Sheet</i> .	A balance sheet is required	6,751 out of 6,751 reports examined have a balance sheet.		ABox	
Every Report <i>Has_Part Income Statement</i> .	An income statement is required.	6,751 out of 6,751 reports examined have an income statement or a combined income statement and statement of comprehensive income.		ABox	
Every Report <i>Has_Part Cash Flow Statement</i> .	A cash flow statement is required	6,751 out of 6,751 reports examined have a cash flow statement.		ABox	
Every Report <i>Has_Part Balance Sheet</i> .	A balance sheet is required	6,751 out of 6,751 reports examined have a balance sheet.		ABox	

Every Balance Sheet <i>Has_Part</i> Assets .	A balance sheet is required to report the concept Assets.	99.69% of entities explicitly reported Assets or the value of Assets could be unambiguously imputed using other reported information. The .3% was observed to be errors.		ABox	
Every Balance Sheet <i>Has_Part</i> Liabilities and Equity .	A balance sheet is required to report the concept Liabilities and equity.	99.69% of entities explicitly reported Liabilities and equity or the value of Liabilities and equity could be unambiguously imputed using other reported information. The .3% was observed to be errors.		ABox	
Every Equation (Assets = Liabilities and equity) <i>Is_A</i> Fundamental Accounting Relation .	A balance sheet is required to balance; Assets = Liabilities and Equity	99.69% of entities reported Assets, reported Liabilities and equity, and Assets = Liabilities and equity. The .3% was observed to be errors.		ABox	
Every Income Statement <i>Has_Part</i> Net Income (Loss) .	An income statement reports Net income (loss).	94.46% of entities explicitly reported Net income (loss) or Net income (loss) could be unambiguously imputed using other reported information. The 5.54% was observed to be errors.		ABox	
Every Cash Flow Statement <i>Has_Part</i> Net Cash Flow .	A cash flow statement reports Net Cash Flow.	95.15% of entities explicitly reported Net cash flow or Net cash flow could be unambiguously imputed using other reported information. The 4.85% was observed to be errors.		ABox	
Every Equation (Net Cash Flow = Net Cash Flow, Operating Activities + Net Cash Flow, Financing Activities + Net Cash Flow, Investing Activities + Exchange gains (losses)) <i>Is_A</i> Fundamental Accounting Relation .	Net cash flow is comprised of the parts from operating, financing, and investing activities plus exchange gains (losses).	95.15% of entities explicitly reported Net cash flow or Net cash flow could be unambiguously imputed using other reported information; and net cash flow from operating, financing, and investing activities plus exchange gains (losses) equaled net cash flow. The 4.85% was observed to be errors.		ABox	

Report Frames (US GAAP Based Financial Report)

The following is a summary of the things and relations between things that extend the SEC-style financial report (really, these are applicable to any US GAAP based financial report) for the notion of a report frame or reporting pallet. Different report frames have different types of relations, relations are universally true only for a specific report frame:

Axioms in Pseudo Human Readable Controlled Natural Language	Description	Empirical evidence from XBRL-based public company financial filings	First order logic	Category	SECXBRL.info API syntax
Every Report Frame is a Thing .	A report frame or reporting pallet is a set of properties which characterizes how an economic entity represents their primary financial statements.	Every report was found to fit within one of 101 identified report frames.		TBox	
Every Industry is a Thing .	An industry is the industry sector or accounting activity which is used by an entity when creating a financial report. Examples include commercial and industrial, interest based revenues, securities based revenues, insurance based revenues, etc.	Every report was found to be identifiable with one of approximately 450 industries and SIC codes.		TBox	
Every Balance Sheet Format is a Thing .	A balance sheet format is the style by which a balance sheet is presented within a financial report. Examples are classified balance sheet, unclassified balance sheet, liquidity based balance sheet.	6,751 reports of 6,751 had a balance sheet whose format was either “classified” or “unclassified”.		TBox	
Every Income Statement Format is a Thing .	An income statement format is the style by which an income statement is presented within a financial report. Examples are single-step and multi-step.	6,751 reports of 6,751 had an income statement format which was either “single-step” (did not include gross profit) or “multi-step” (included gross profit).		TBox	
Every Cash Flow Statement Format is a Thing .	A cash flow statement format is the style by which a cash flow statement is presented within a financial report. The two styles are to include exchange gains within net cash flow and to include net cash flow as part of the roll forward of cash and cash equivalents.	Every one of the 6,751 reports had a cash flow statement.		TBox	

Every Income From Equity Method Investments Placement is a Thing .	An income from equity method investments placement describes the location of the line item income from equity method investments on the income statement. Examples include, within revenues, part of taxes, within special reporting items, etc.			TBox	
Every Operating income (loss) Reported is a Thing .	Operating income (loss) reported describes whether the line item operating income (loss) is or is not reported within the income statement. Examples include YES and NO.			TBox	
Every Report Frame Has_Part Industry .	A report frame has the part industry.			ABox	
Every Report Frame Has_Part Balance Sheet Format .	A report frame has the part balance sheet format.			ABox	
Every Report Frame Has_Part Income Statement Format .	A report frame has the part income statement format.			ABox	
Every Report Frame Has_Part Cash Flow Statement Format .	A report frame has the part cash flow statement format.			ABox	
Every Report Frame Has_Part Income From Equity Method Investments Placement .	A report frame has the part income from equity method investments placement.			ABox	
Every Report Frame Has_Part Operating income (loss) Reported .	A report frame has the part operating income (loss) reported.			ABox	
Every Fundamental Accounting Concept is a Thing .	The notion of a fundamental accounting concept exists. An examples of fundamental accounting concepts include <i>Assets, Liabilities, Current assets, Equity, Net income (loss)</i> , etc.			TBox	
Every Fundamental Accounting Concept Relation is a Business Rule .	A fundamental accounting concept relation is a business rule that is universally applicable to every financial report which has a specific report frame. The value of the business rule is always true.			TBox	

Every Equation (<i>Assets = Current assets + Noncurrent assets</i>) is a Fundamental Accounting Concept Relation <i>WHERE</i> (Balance Sheet Format = Classified).	????????				
Every Equation (<i>Liabilities = Current liabilities + Noncurrent liabilities</i>) is a Fundamental Accounting Concept Relation <i>WHERE</i> (Balance Sheet Format = Classified).	????????				