Introduction to XBRL-based Digital Financial Reporting

By Charles Hoffman, CPA (June 10, 2020)[1]

Background

XBRL (eXtensible Business Reporting Language) is a machine-readable information format that can be used for serialized data transfer that allows for error checking and between-system asynchronous communications with an underlying logic structure that can be consistent with a set of financial rules.

Motivation

This document helps provide professional accountants and auditors a hands-on introduction to XBRL-based digital financial reporting that serves as a foundation for expanding their knowledge about XBRL-based accounting, reporting, auditing, and analysis.

We will use two fundamental financial reporting artifacts to provide you with a solid big picture and the critically important details of XBRL-based financial reporting: the **accounting equation** and SFAC 6's *Elements of Financial Statements*.

But first, let us quickly introduce a handful of important jargon we need in order to communicate financial information efficiently.

Jargon

The user-defined axioms of the *logical theory* underlying XBRL are derived from a set of *models*, *structures*, *terms*, *associations*, *rules*, and *facts*:

- ✦ **Logical theory**: A *logical theory* is a set of models that are consistent with and permissible per that logical theory.
- ✦ **Model**: A *model* is a set of structures that are consistent with and permissible interpretations of that model.
- ✦ **Structure**: A *structure* is a set of logical statements which describe the structure.
- ✦ **Logical Statement**: A logical statement is a proposition, claim, assertion, belief, idea, or fact about or related to the area of knowledge to which the logical theory relates. There are four broad categories of logical statements:
- ✦ **Terms**: Terms are logical statements that define ideas used by the logical theory such as "assets", "liabilities", "equity", and "balance sheet".
- ✦ **Associations**: Associations are logical statements that describe permissible interrelationships between the terms such as "assets is part-of the balance sheet" or "operating expenses is a type-of expense" or "an asset is a 'debit' and is 'as of' a specific point in time and is always a monetary numeric value".

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[1] Thank you to Adam Booker, PhD, Associate professor in the School of Accountancy at the Daniels College of Business for his input to this tutorial.

- ✦ **Rules**: Rules are logical statements that describe what is permissible per the logical system and other constraints. For example, "Assets = Liabilities + Equity" is an example of a consistency type rule.
- ✦ **Facts**: Facts are logical statements about the numbers and words that are provided by an economic entity2 within a business report. For example, the financial report might state "assets for the consolidated legal entity Microsoft as of June 20, 2017 was $241,086,000,000 expressed in US dollars and rounded to the nearest millions of dollars.

Fundamentally, a logical theory is a set of logical statements. Those logical statements can be represented in human-readable form or they could be expressed in machine-readable form. Once in machine-readable form, those logical statements can be interrogated using software applications. To the extent that this can be done effectively; software tools can assist professional accountants, financial analysts, and others working with those logical statements.

A logical theory can be used to describe a logical system. A logical system is said to be **consistent** with a logical theory if there are no contradictions with respect to the logical statements made by the logical theory that describes the logical system.

A logical theory can have high to low **precision** and high to low **coverage** with respect to describing a logical system.

Precision is a measure of how precisely the information within a logical theory has been represented as contrast to reality of the logical system for the area of knowledge. *Coverage* is a measure of how completely information in a logical theory has been represented relative to the reality of the logical system for the area of knowledge.

When a logical system is consistent and it has high precision and high coverage the logical system can be considered a **properly functioning logical system**.

An XBRL-based financial report is a machine-readable version of what has historically been represented on paper. Humans can interpret that paper, computers cannot. A logical theory can be used to break up the pieces of a financial report into ideas that can be explained to humans (to see if they agree with the theory) and to computers (to see if they understand the financial report).

Don't worry about any more of an explanation about logical theories for now; we will get to that in later documentation (i.e. not here). For now, please focus on the **mechanical aspects** of the tasks you are performing. We will enhance the conceptual understanding later.

The more a logical theory passes the test of use; the more seriously the logical theory can be taken over time. Or, the logical theory can be improved to make that logical theory better.

Accounting Equation Representation

The double-entry bookkeeping model and the accounting equation provide the very foundation of financial reporting. There are many different sources for the accounting equation, but I will use Wikipedia's version[2], of the accounting equation:

$$\textbf{Assets = Liabilities + Equity}$$

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[2] Wikipedia, Accounting Equation, https://en.wikipedia.org/wiki/Accounting_equation

As Wikipedia points out, that fundamental accounting equation, also called the balance sheet equation, represents the relationship between the line items "assets", "liabilities", and "equity" of an economic entity. It is the foundation for the double-entry bookkeeping system. For each transaction, the total debits equal the total credits.

So, breaking the accounting equation down, what do we see? Well, we see the following:

- We have three **terms**: Assets, Liabilities, Equity.

- Those terms work together within a **structure**, the Balance Sheet.

- Those terms within that structure are associated with one another to form a logical model.

- We have a **rule** which explains the mathematical association between the three terms: "Assets = Liabilities + Equity".

- Economic entities use the terms (Assets, Liabilities, Equity), the structure (Balance Sheet), and rule (Assets = Liabilities + Equity) to report **facts** about their particular economic entity.

- The *terms*, *structure*, *rule*, and *facts* work together to provide a financial **model** of the economic entity.

- That model is effectively used to represent a set of **logical statements** about the assets, liabilities, and equity of an economic entity at some point in time.

In the past, these logical statements about the financial information of some economic entity were represented on clay tablets, papyrus, paper. Now, in the information age, we can represent that same information in a computer readable form with the help of the XBRL-structured format. The really good thing is that you do not need to that XBRL technical format. Why? Because properly created software applications hides the technical details of XBRL from you so that you can focus on the logic of representing financial information.

If you want to better understand accounting, I would suggest the chapter IV. Accounting Basics of Robert J. Bloomfield's book *What Counts and What Gets Counted*[3].

To understand how all this works, we will use a free, very basic software application to create a complete XBRL-based report for the accounting equation. We will be walking you through this using the software application called **Luca** which is part of the **Auditchain Suite**[4]. You can use whatever software you might desire to use.

We are trying to keep this tutorial as simple as possible. We encourage you to follow each step exactly in order to get the most out of this tutorial. Remember, for now we are simply focused on the mechanical steps that you are taking. We will build on this foundation in further tutorials that increase in complexity.
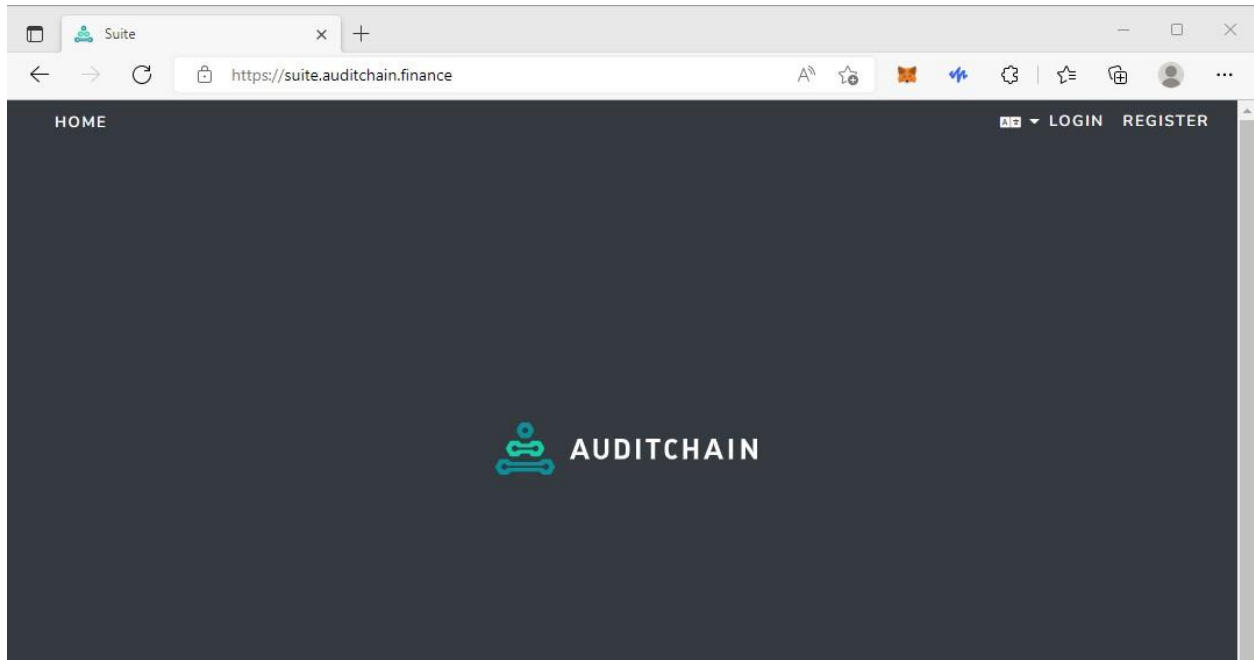
Here we go!

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[3] SSRN, *What Counts and What Gets Counted*, page 75,
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2427106
[4] Auditchain Suite, https://suite.auditchain.finance/

Step 1: Log in to Auditchain Suite.

Go to the Auditchain Suite main form which is: https://suite.auditchain.finance/. In the upper righthand side click on LOGIN.

This takes you to the login page. You have multiple login alternatives and even more will be added. For now, either install Metamask or select "Register" from the menu ribbon at the top.
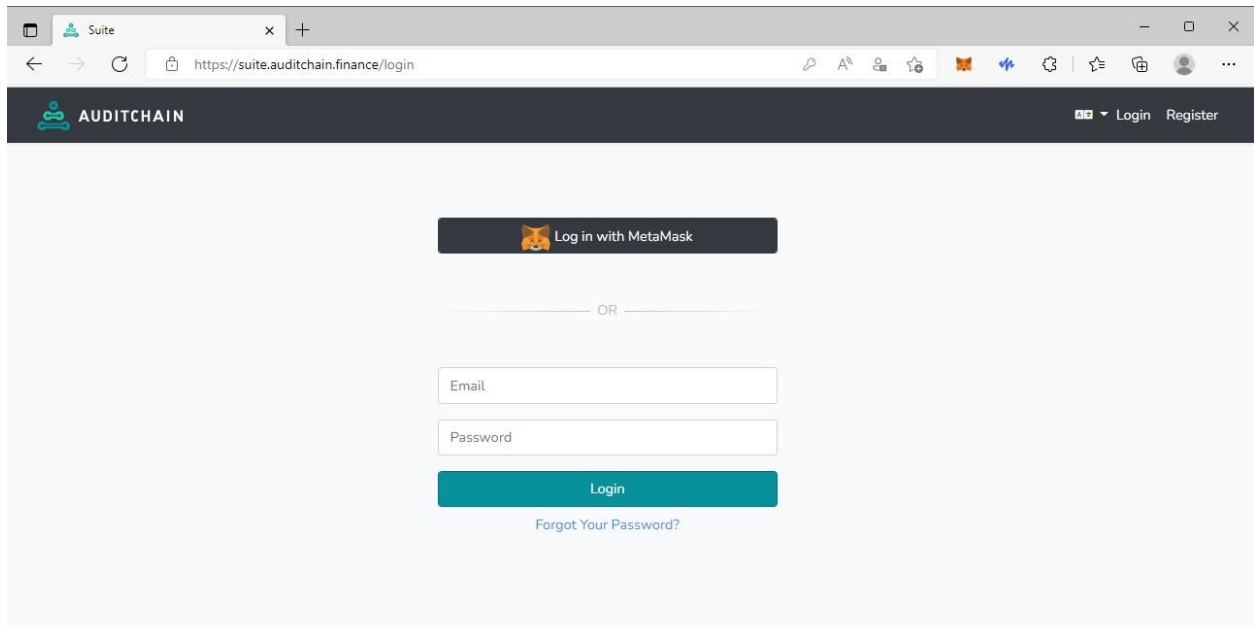
If you selected use MetaMask, you do not need to Register. If do not want to use MetaMask, you will be taken to a registration form:

Fill in the information above, press the blue "Register" button, and you will be logged in.

This will take you to the main menu of the Auditchain Suite. From this main menu, please click on LUCA from the menu ribbon:
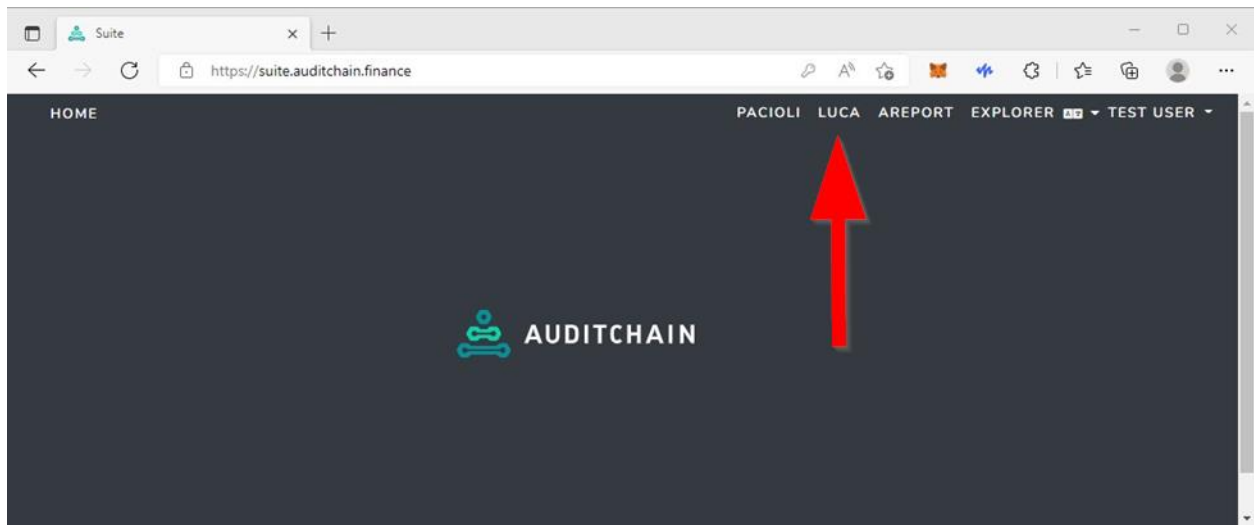
That will take you to the Luca main menu:
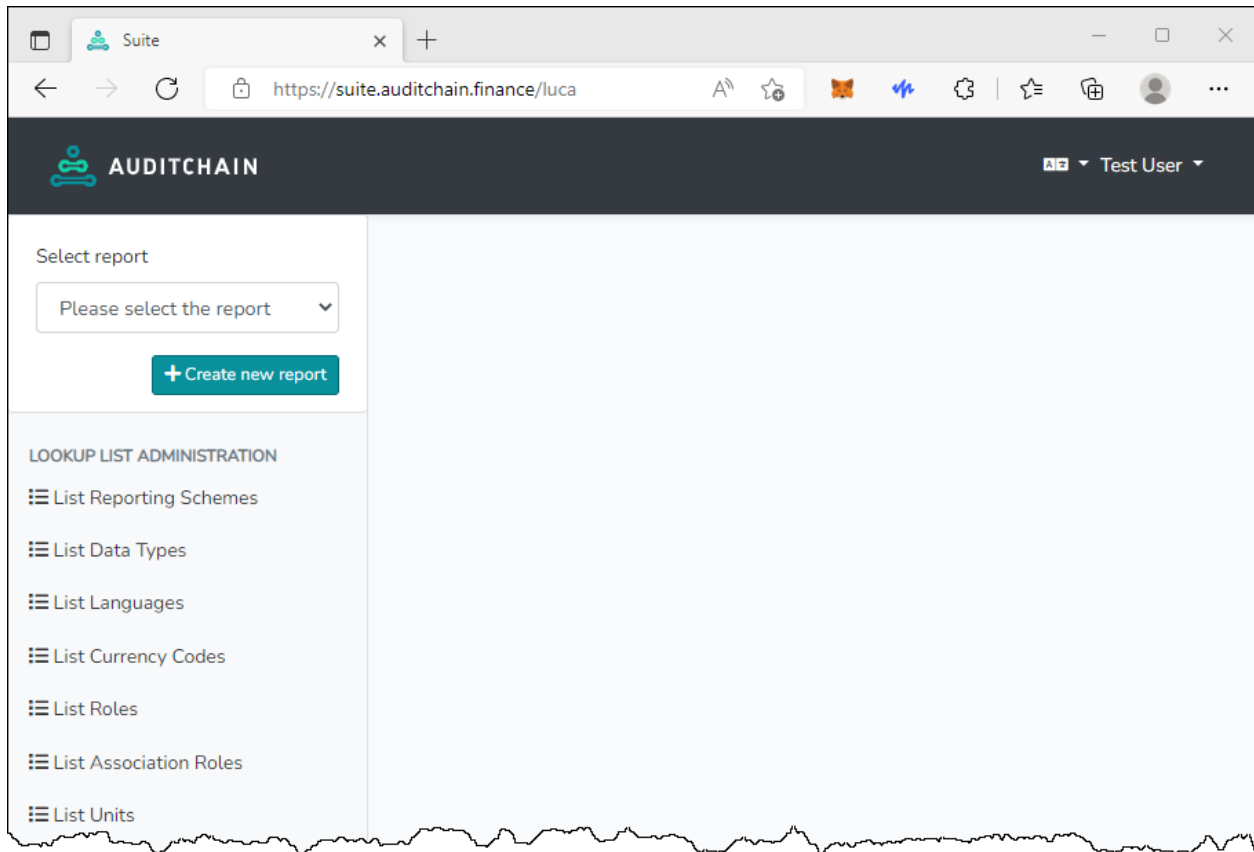
To create a new report, please click on the "Create new report" button to bring up a form which will let you enter the name of the report that you want to create.

Enter "Accounting Equation" in the Report name field of the form.
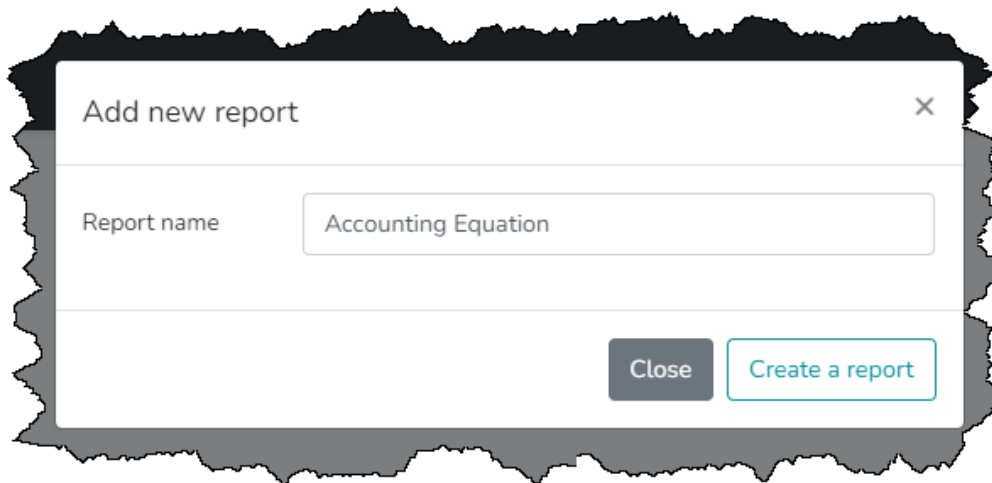
After you enter the report name for the report you want to create, press the "Create a report". You are taken back to the main form. You now see the report information that needs to be entered under the "Enter report information" section on the left side.

Step 2: Enter base information.

Next, select the "Base Information" button on the left side of the screen.[5]
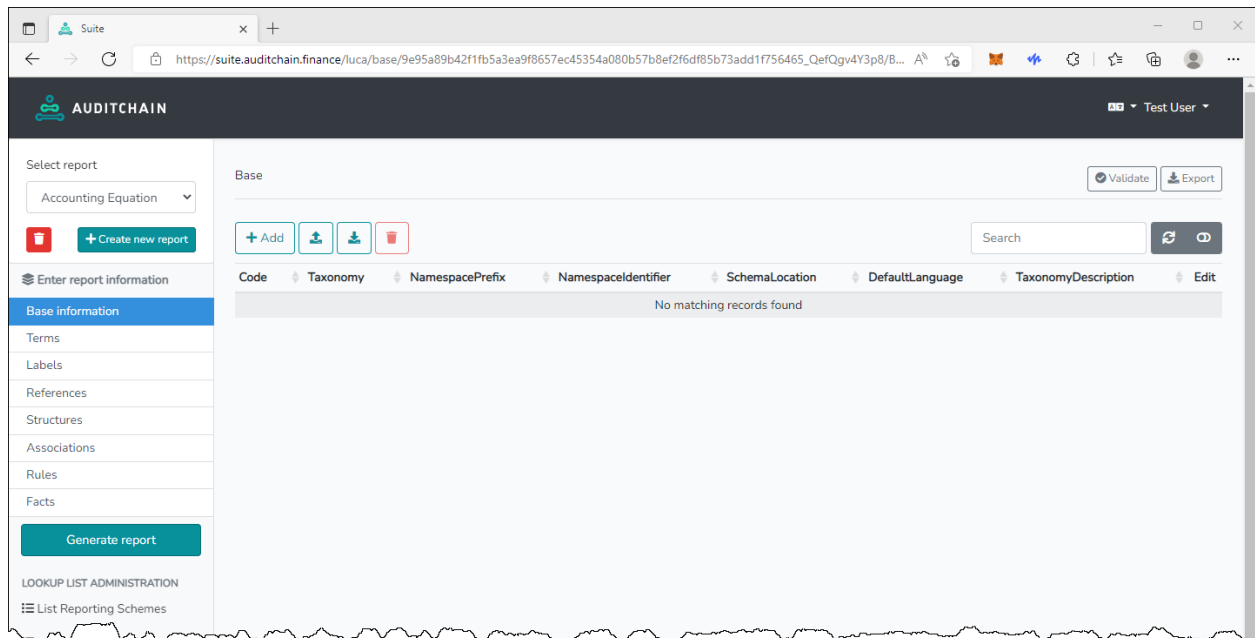
The accounting equation is the starting point real-world financial statements as well – from this fundamental equation, additional precision can be added. There are eight groups of information that need to be entered to define a digital financial report: Base Information, Terms, Labels, References, Structures, Associations, Rules, and Facts. To better understand the underlying logical structures of XBRL, we will create a simple report for the accounting equation by entering this information one step at a time. All financial reports have an underlying and generally unseen logic that aggregates economic events and can therefore be explained using XBRL axioms. We will enter the information for the following menu options: Structures, Associations, Rules, and Facts.

In the Base Information tab, click on the "+ Add" button. That opens the Base information entry form. The base information includes the few technical oriented details that you need to represent information digitally using XBRL such as the name of the file and information that identifies the XBRL file.

Please enter the following information into the Base information form. (Remember, we are focused on the mechanical steps used for creating a report at this point; don't worry, we will explain the details later but for now stay focused on the mechanical steps of entering the information into the form)

Your form should look like this after you have entered information for each field:

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[5] **IMPORTANT NOTE! Understand that Luca is a work in progress and the GUI/UX that exists currently is NOT THE FINAL GUI/UX that will be provided. The current GUI/UX is provided simply as a basic way to enter report information and to help test the API features and Excel import features of Luca. The ultimate GUI/UX will be far more usable to accountants creating reports. While the current GUI/UX can be used for creating reports, the current state is more for testing and training by the software engineers creating the software. So, don't worry!**

Add row ✕

Code	Local ⌄
Taxonomy	Local (only ONE in report) ⌄
NamespacePrefix	ae
NamespaceIdentifier	http://mysite.com/ae
SchemaLocation	report.xsd
DefaultLanguage	English ⌄
TaxonomyDescription	My first report.

Close   Save

Click the save button and you can now see the information that you have entered on the main form:

AUDITCHAIN   Test User ▾

Select report
Accounting Equation ▾

🗑 + Create new report

⊜ Enter report information
Base information
Terms
Labels
References
Structures
Associations
Rules
Facts

Generate report

Base   ✅Validate ⬇Export

Successfully added!   ✕

+ Add ⬆ ⬇ 🗑   Search ↻ 👁

Code	Taxonomy	NamespacePrefix	NamespaceIdentifier	SchemaLocation	DefaultLanguage	TaxonomyDescription	Edit
Local	Local	ae	http://mysite.com/ae	report.xsd	en	My first report.	☑ ⊖

You have now entered all the base information you need to create your first XBRL report.

Step 3: Enter term information.

Now click on "Terms" under the Enter report information section on the left side of the web page. You see the same sort of "+ Add" button. Click on that and let's enter the terms for the accounting equation. Enter the information for the concept "Assets" which should look as follows when you are complete:

Now, enter the same information for Liabilities and Equity noting that the only difference between Assets and Liabilities and Equity is that Assets is a DEBIT, and Liabilities and Equity are both CREDITS.

To create our model, we need to create one additional term to "hang" the concepts assets, liabilities, and equity on in our model. By hang we mean the this; report models tend to be visualized using a representation that looks like a tree:

So, create the following term:

Note that this final term is a bit different than the first three. Again, focus on the mechanics of what you are doing, we will help you understand the details later.

After you have finished entering your terms for the accounting equation report model, your term information should look like this:

ReportElementCategory	Prefix	StandardLabel	ReportElementName	Datatype	BalanceType	CalendarPeriodType	Edit
Concept	ae	Assets	Assets	Monetary	Debit	Instant	✎ ⊖
Concept	ae	Liabilities	Liabilities	Monetary	Credit	Instant	✎ ⊖
Concept	ae	Equity	Equity	Monetary	Credit	Instant	✎ ⊖
Abstract	ae	Balance Sheet [Arithmetic]	BalanceSheetArithmetic	None	None	None	✎ ⊖

Step 4: Enter label information.

Select "Labels" from the Enter report information section. The Labels summary form will appear. We already entered the labels we need when we entered the terms above, note the "Standard Label" which is always required. We do not need any additional labels for our report. So, we will skip entering any additional labels and move on.

ReportElementName	Language	LabelRole	Label	Edit
		No matching records found		

Step 5: Enter references information.

Select "References" from the Enter report information section. The References summary form will appear. We want to keep this example as simple as possible, so we will skip entering references. Just know that references can be associational with any term in a report model.

ReportElementName	ReferenceRole	Publisher	Name	Paragraph	URI	URIDate	Edit
			No matching records found				

Step 6: Enter structure information.

Select "Structures" from the Enter report information section. We have only one structure, please enter the information for the balance sheet structure that you see below:

After you have finished entering your structures for the accounting equation report model, your structure information should look like this:

StructureIdentifier	StructureTitle	Sequence	Edit
BalanceSheet	Balance Sheet	1	✎ ⊖

Step 7: Enter associations information.

Select "Associations" from the Enter report information section. We have three associations to enter.

Enter the information that you see below to enter the first of the three:

Similarly, enter the information for liabilities and equity and then after you add those two your associations should look like what you see below:

StructureType	NetworkIdentifier	AssociationFromName	AssociationRole	AssociationToName	CalculationPolarity	PreferredLabelRole	Sequenc
Presentation	BalanceSheet	ae:BalanceSheetArithmetic	Parent-Child	ae:Assets	-	-	1
Presentation	BalanceSheet	ae:BalanceSheetArithmetic	Parent-Child	ae:Liabilities	-	-	2
Presentation	BalanceSheet	ae:BalanceSheetArithmetic	Parent-Child	ae:Equity	-	-	3

Step 8: Enter rules information.

Select "Rules" from the Enter report information section. We have just one rule to enter. Enter the information that you see below:

After you have finished entering your rule for the accounting equation report model, your rule information should look like this:

RuleType	RuleCode	Rule	Concept	Structure	Dimension	Commentary	Edit
ConsistencyRule	BS1	$Assets = $Liabilities + $Equity	ae:Assets	BalanceSheet	-	This is commentary which I added.	✎ ⊖

Step 9: Entering facts

Select "Facts" from the Enter report information section. We have six facts to enter. Enter the information that you see below to enter the first of the six:

Add row

ReportingEntityAspe	MYID | http://mysite.com/myscheme ⬍
CalendarPeriodAspe	2020-12-31 ⬍
Concept	ae:Assets ⌄
FactValue	0
Units	iso4217:USD ⌄
Rounding	INF ⬍
FactID	FACT1
Sequence	1

[Add dimensions] [Add parentheticals]

[Close] [Save]

After you have finished entering your facts for the accounting equation report, your facts information in your accounting equation REPORT should look like this:

ReportingEntityAspect	CalendarPeriodAspect	Concept	FactValue	Units	Rounding	FactID	Sequence	Edit
MYID | http://mysite.com/myscheme	2020-12-31	ae:Assets	0	iso4217:USD	INF	FACT1	1	✎ ⊖
MYID | http://mysite.com/myscheme	2020-12-31	ae:Liabilities	0	iso4217:USD	INF	FACT2	2	✎ ⊖
MYID | http://mysite.com/myscheme	2020-12-31	ae:Equity	0	iso4217:USD	INF	FACT3	3	✎ ⊖
MYID | http://mysite.com/myscheme	2021-12-31	ae:Assets	1000	iso4217:USD	INF	FACT4	4	✎ ⊖
MYID | http://mysite.com/myscheme	2021-12-31	ae:Liabilities	500	iso4217:USD	INF	FACT5	5	✎ ⊖
MYID | http://mysite.com/myscheme	2021-12-31	ae:Equity	500	iso4217:USD	INF	FACT6	6	✎ ⊖

Step 10: Generate report

You have entered all the report model information and the facts for the report; now it is time to generate the report. Currently, Luca only supports generating global standard XBRL output. Eventually, other formats will be added.

From the main form, press the green "Generate report" button and the following form opens:
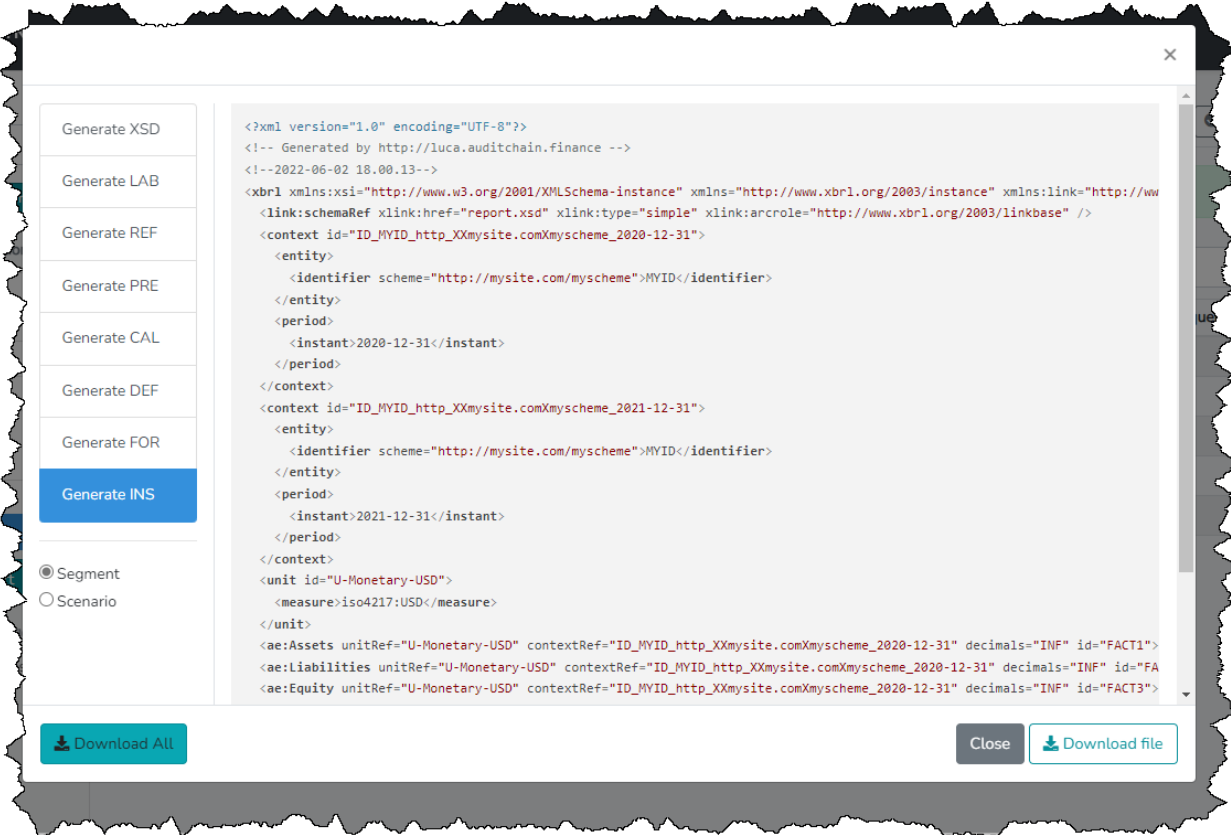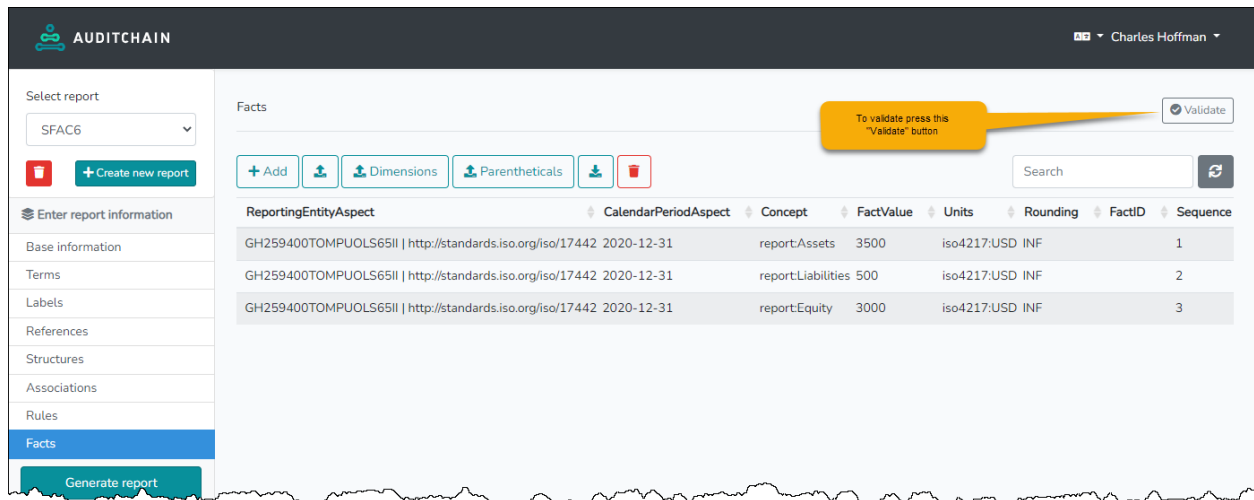
Press the "Download All" button and you can download the XBRL-based report model and report which was generated. Download the file, open up the ZIP archive you are provided that contains all the files, and what you see should look something like the following:

Step 11: Verify your XBRL files
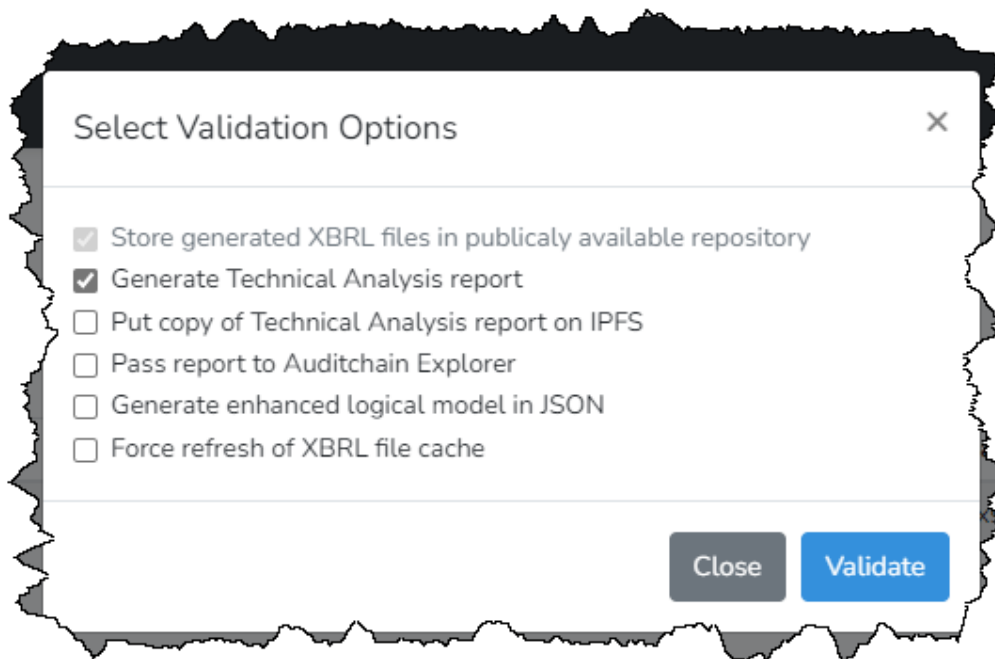
Finally, we will want to verify that the XBRL taxonomy and XBRL instance are correctly created. From the main form of Luca, press the "Validate" button on the upper left-hand side of the form:

You will be presented with a form to select the validation options. Just accept the defaults for now and then press the blue "Validate" button in the lower right-hand side of the form:

The validation process takes a few moments. When the validation process is complete you will be presented with a summary of the validation results that looks something like what you see below:

Any verification errors will be indicated in RED and within the list of messages that you see at the bottom of the validation page. We will not go into further detail at this point.

Step 12: Examining the End Result.

If you click on the "Technical Analysis" button in the upper part of the verification results page you will be taken to a web page that has additional details related to the report and report model verification results and the report information itself. The Technical Analysis is the output generated by a logic engine that verifies that the XBRL-based digital financial report is functioning properly. The Technical analysis is fairly straight forward; look around and you will find the following sorts of information:

Rendering of report information:

Model structure information:

Model Structure	
Network	**01-Balance Sheet** *(http://www.xbrlsite.com/report/role/BalanceSheet)*
Table	(implied)

#	Label	Report Element Class	Period Type	Balance	Name
1	Balance Sheet [Set]	Abstract			report:BalanceSheetSet
2	Assets	Concept (Monetary)	instant	debit	report:Assets
3	Liabilities	Concept (Monetary)	instant	credit	report:Liabilities
4	Equity	Concept (Monetary)	instant	credit	report:Equity

Facts reported:

Fact Table	
Network	**01-Balance Sheet** *(http://www.xbrlsite.com/report/role/BalanceSheet)*
Table	(implied)

#	Block	Reporting Entity [Aspect]	Period [Aspect]	Concept [Aspect]	Fact Value	Unit	Rounding	Parenthetical Explanations	Origin
1	Assets [Arithmetic]	MYID (http://mysite.com/myscheme)	2020-12-31	Assets	0	iso4217:USD	INF		Reported
2	Assets [Arithmetic]	MYID (http://mysite.com/myscheme)	2021-12-31	Assets	1000	iso4217:USD	INF		Reported
3	Assets [Arithmetic]	MYID (http://mysite.com/myscheme)	2020-12-31	Liabilities	0	iso4217:USD	INF		Reported
4	Assets [Arithmetic]	MYID (http://mysite.com/myscheme)	2021-12-31	Liabilities	500	iso4217:USD	INF		Reported
5	Assets [Arithmetic]	MYID (http://mysite.com/myscheme)	2020-12-31	Equity	0	iso4217:USD	INF		Reported
6	Assets [Arithmetic]	MYID (http://mysite.com/myscheme)	2021-12-31	Equity	500	iso4217:USD	INF		Reported

Rule verification result:

Value Assertions

#	Type	Name	Rule Expression
1	valueAssertion	BS1 • ok:2 • failed:0	Assets=Liabilities+Equity *2 instances:* report:Assets[0] = report:Liabilities[0] + report:Equity[0] report:Assets[1,000] = report:Liabilities[500] + report:Equity[500]

SFAC 6 Elements of Financial Statements Representation

We are going to add a bit more complexity to our report model and report by moving onto a slightly more complex model which is the FASB's SFAC 6[6] *Elements of Financial Statements* which we will represent. On page 12 of SFAC 6 you see the 10 elements that serve as the building blocks of financial statements:

- Assets,
- Liabilities,
- Equity (or Net Assets),
- Revenues,
- Expenses,
- Gains,
- Losses,
- Investments by Owners,
- Distributions to Owners, and
- Comprehensive Income.

These are effectively the terms that we need to define. In addition, three **Rules** are explicitly or implicitly defined interrelationships between the above terms:

- Assets = Liabilities + Equity
- Comprehensive Income = Revenues - Expenses + Gains - Losses
- Ending Equity = Beginning Equity + Comprehensive Income + Investments by Owners - Distributions to Owners

Finally, three **Structures** are explicitly or implicitly defined and are used to represent sets of the terms, those three structures are:

- Balance sheet
- Income statement
- Statement of Changes in Equity

The final result you are working toward in the creation of this SFAC 6 representation in XBRL. Again, we will use Auditchian's Suite and specifically the Luca application within that Suite to create this representation.

We will do one thing slightly differently to both build on your understanding of digital financial reports but also to make your life just a bit simpler. Rather than keying in information for the report model and report; we will import all of that information using the Excel import functionality provided by Luca.

So, log in to the Auditchain Suite as you did before and find your way to the main page. You should see the form shown in the following screenshot:

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[6] FASB, *Statement of Financial Accounting Concepts No. 6*, page 12, https://www.fasb.org/pdf/con6.pdf
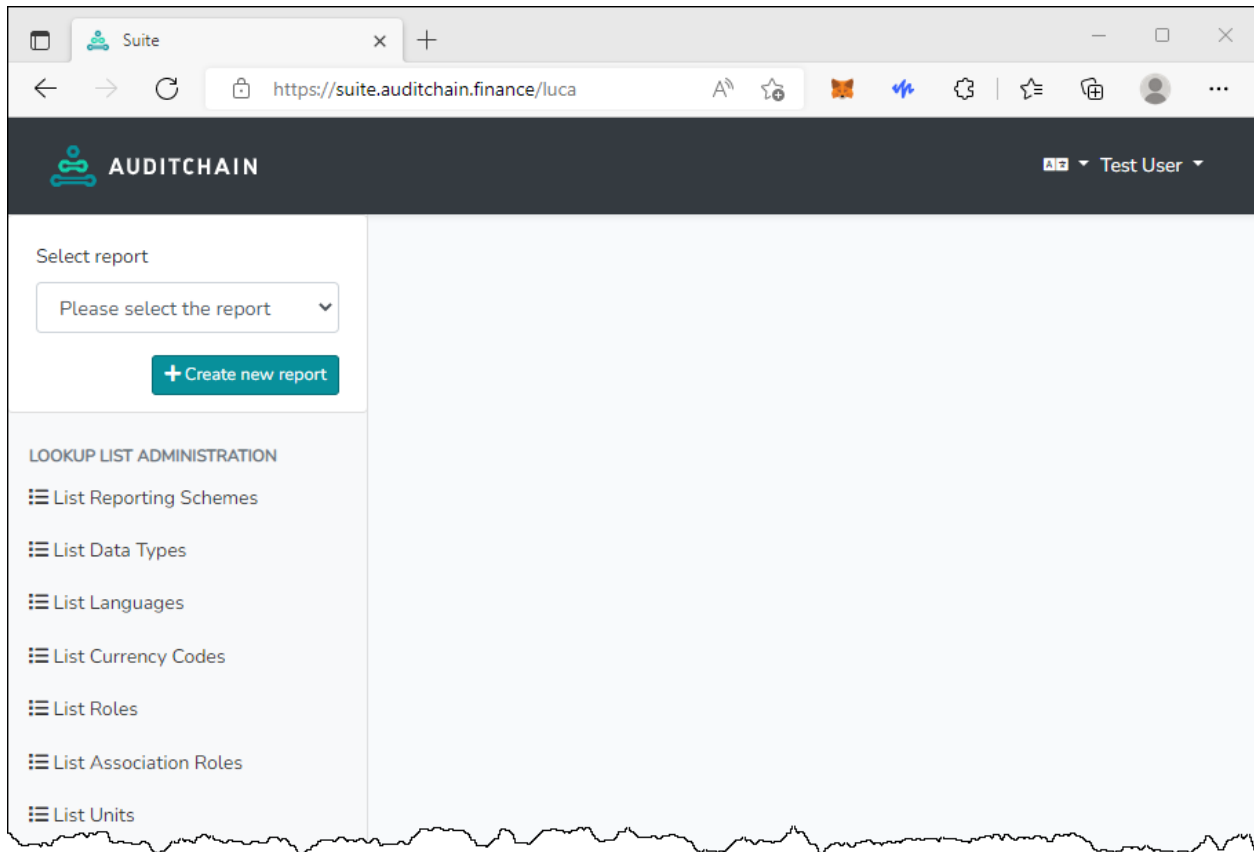
Next, click the "+ Create new report" button. Enter the name of the report we will create into the form as you see below:
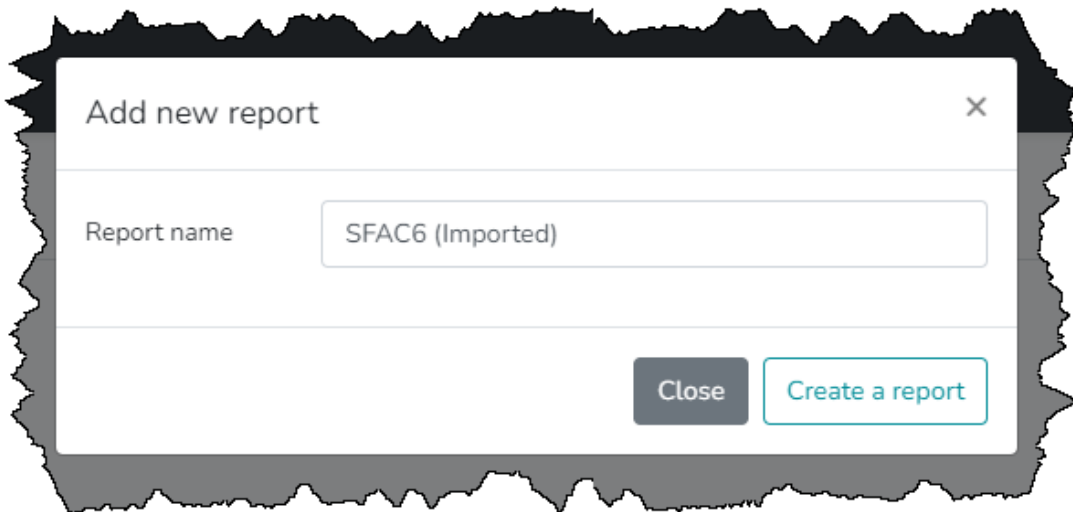
Now we will walk you through the steps of importing the information for the report model and report.

But first, you need to download the Excel file that we have created that you will use for this import process. You can find a ZIP archive that has that file here:

http://accounting.auditchain.finance/resources/suite/sfac6-all-in-one-workbook-import.zip

The contents of the ZIP file look like the following:

Name	Type	Compressed size	Password ...	Size	Ratio	Date modified
sfac6-all-in-one-workbook-import.xlsx	Microsoft Excel Worksheet	17 KB	No	21 KB	23%	6/3/2022 1:15 PM

Have a look at that Excel workbook. It contains nine spreadsheets that contain the information for the report model and report that we will import.

ALTERNATIVE IMPORT FILE (Optional)

Keep in mind that you can ALTERNATIVELY import information one table at a time using individual Excel spreadsheets. You can grab a ZIP archive that has those Excel spreadsheets here:

http://accounting.auditchain.finance/resources/suite/sfac6-import.zip

Download that file, put the file somewhere you can access it on your local hard drive, and unzip the file. What you should see is a set of Excel spreadsheets that look like the following:

| Name	Type	Compressed size	Password ...	Size	Ratio	Date modified
sfac6-associations.xlsx	Microsoft Excel Worksheet	8 KB	No	10 KB	25%	9/28/2021 4:34 PM
sfac6-baseinformation.xlsx	Microsoft Excel Worksheet	8 KB	No	10 KB	27%	10/4/2021 10:30 AM
sfac6-facts.xlsx	Microsoft Excel Worksheet	8 KB	No	10 KB	26%	11/16/2021 6:07 PM
sfac6-labels.xlsx	Microsoft Excel Worksheet	7 KB	No	9 KB	27%	9/28/2021 4:34 PM
sfac6-references.xlsx	Microsoft Excel Worksheet	8 KB	No	10 KB	27%	8/31/2021 2:12 PM
sfac6-rules-consistency.xlsx	Microsoft Excel Worksheet	7 KB	No	10 KB	27%	11/24/2021 9:46 AM
sfac6-rules-rollforward.xlsx	Microsoft Excel Worksheet	7 KB	No	10 KB	27%	11/24/2021 9:46 AM
sfac6-structures.xlsx	Microsoft Excel Worksheet	7 KB	No	9 KB	27%	8/30/2021 9:22 AM
sfac6-terms.xlsx	Microsoft Excel Worksheet	8 KB	No	10 KB	26%	9/28/2021 4:36 PM

Those are the files you will use to import the SFAC6 report model and report information. Use either the single file or the multiple files.

Let's get going!

Step 1: Import report model and report information.

Select "Base information" from the "Enter report information" section. Next, click on the "Upload date from *.xlsx" button that you see on that form, it looks like this:
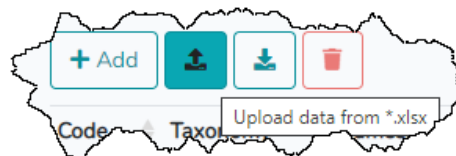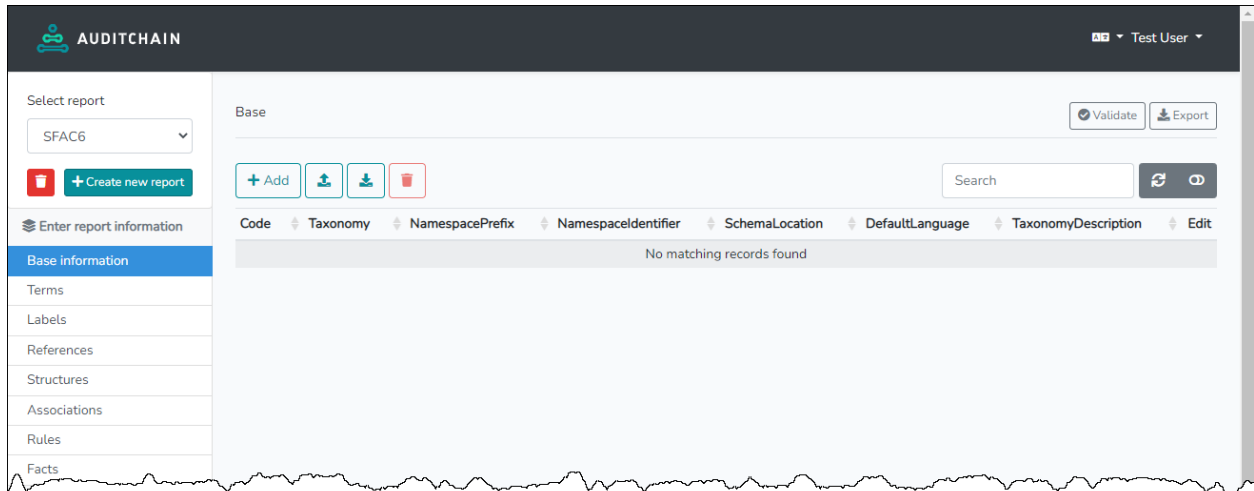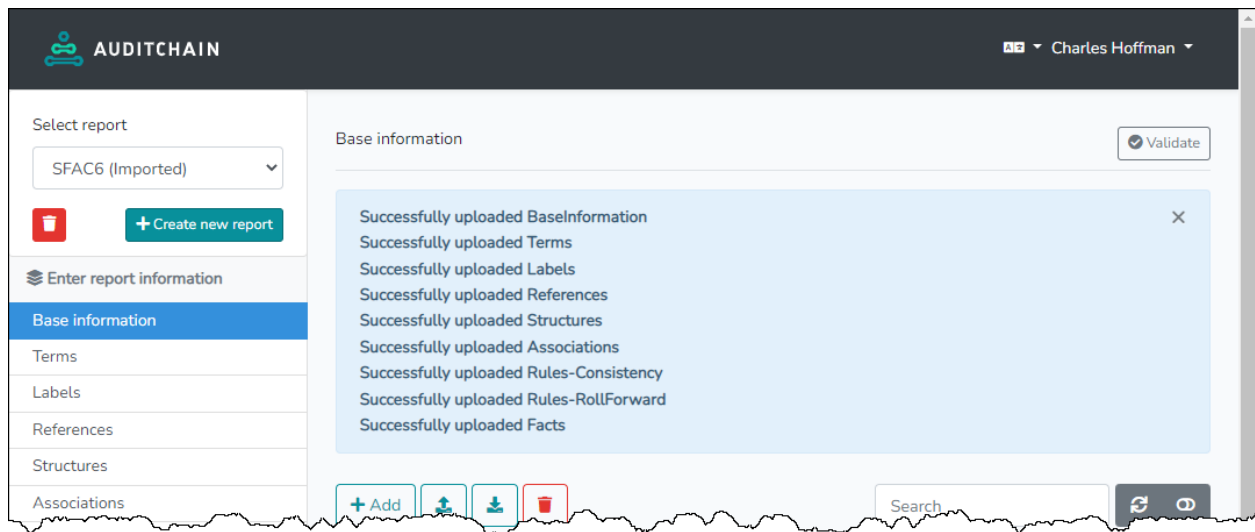
Press that button and a form will appear. Use that form to select the file "sfac6-all-in-one-workbookimport.xlsx" which you put on your hard drive. Select the file and what you see should look like the following:
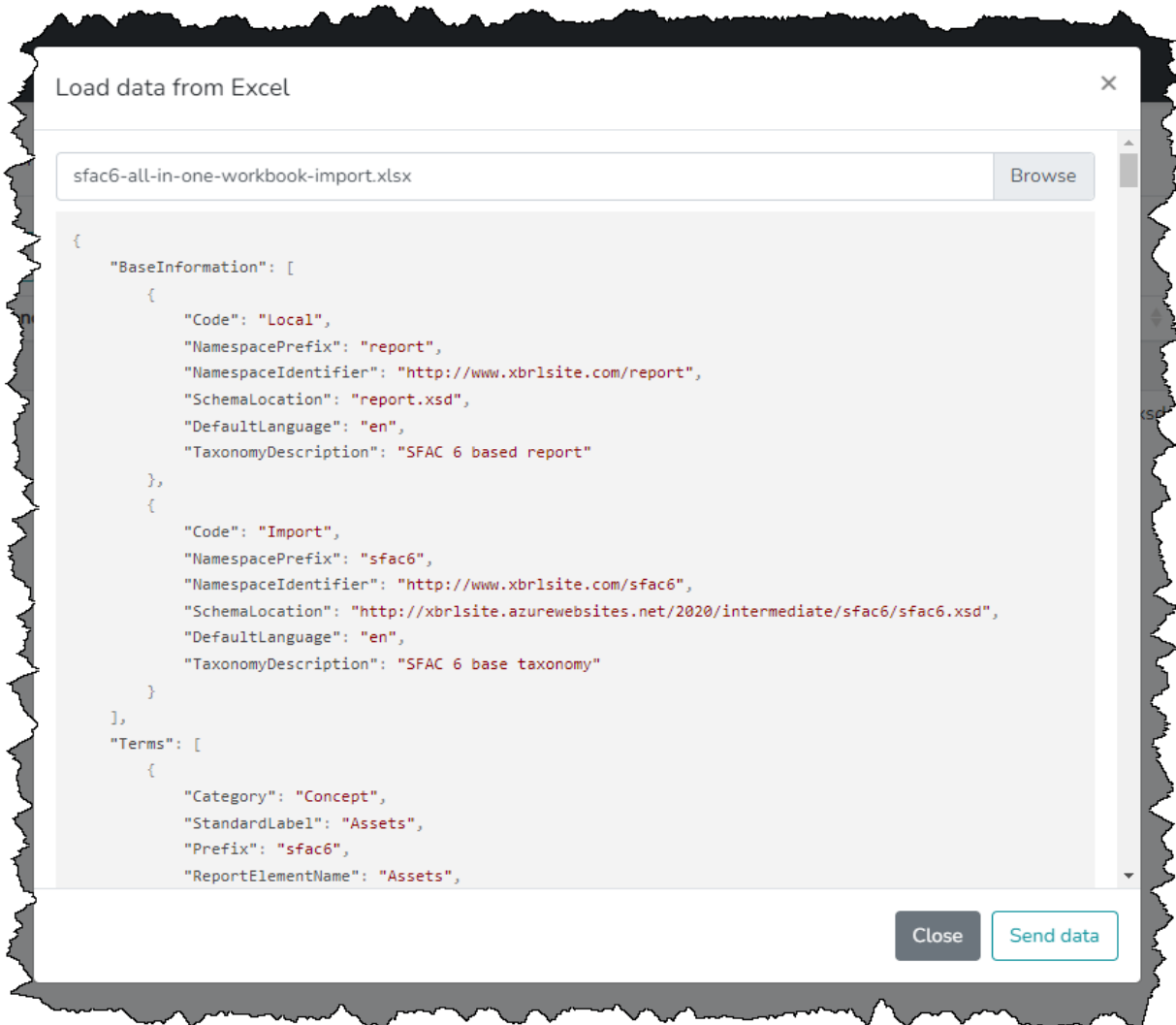
Press the "Send data" button. You will receive several messages indicating that the information in the file has been imported:

The information from the Excel file(s) will be imported into the Luca application and then your "Base information" summary page should look like what you see here:

Code	Taxonomy	NamespacePrefix	NamespaceIdentifier	SchemaLocation	DefaultLanguage	TaxonomyDescription	Edit
Local		report	http://www.xbrlsite.com/report	report.xsd	en	SFAC 6 based report	☑ ⊖
Import		sfac6	http://www.xbrlsite.com/sfac6	http://xbrlsite.azurewebsites.net/2020/intermediate/sfac6/sfac6.xsd	en	SFAC 6 base taxonomy	☑ ⊖

If you click on the different "Enter report information" categories you will see the information that has been imported. It really is that simple. Click on the other categories of report information (i.e. Terms, Labels, References, Structures, Associations, Rules, Facts) if you want to see that information.

If you want to import individual spreadsheets, just grab the spreadsheet you want for each of the categories of report information. You will repeat this process to import all of the other information needed for the SFAC6 report model and report.

Step 2: Generate your XBRL-based report.

After all the information has been imported either using that one single Excel workbook or the individual Excel workbooks; press the "Generate report" button. A form will open which looks as follows:
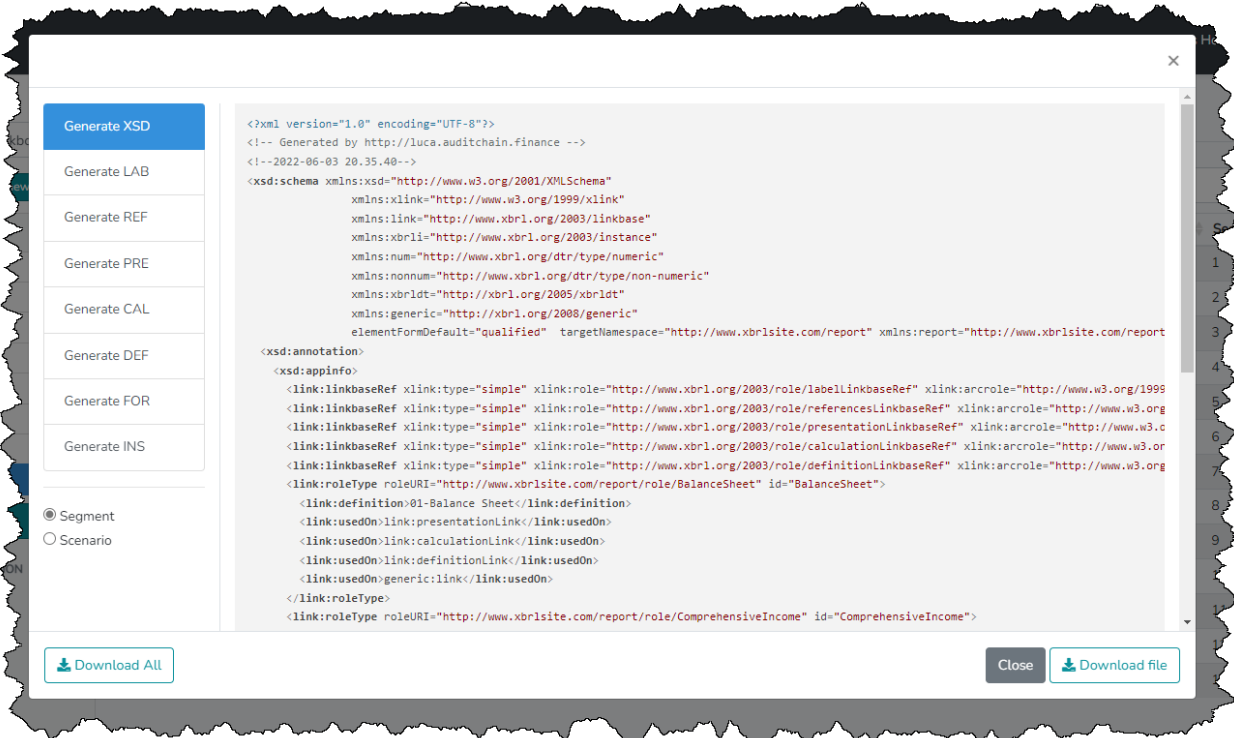
Press the "Download All" button in the lower left hand corner of the form. Your browser will show you the downloaded file, here is what it looks like per Microsoft Edge Browser:


You now have the XBRL files that were generated which you can run through any verification processes that you may want. Or, Luca can verify that your report and report model are correct and even publish your report on the internet.

Step 3: Publishing Report and Verify that your XBRL is correct.

Next, to publish your report and report model and verify that your XBRL technical syntax is correct we will validate the XBRL that was generated to make sure it is consistent with the XBRL technical specification and all the mathematical rules that are represented within your report.

To do this, press the "Validate" button in the upper right hand part of the form:
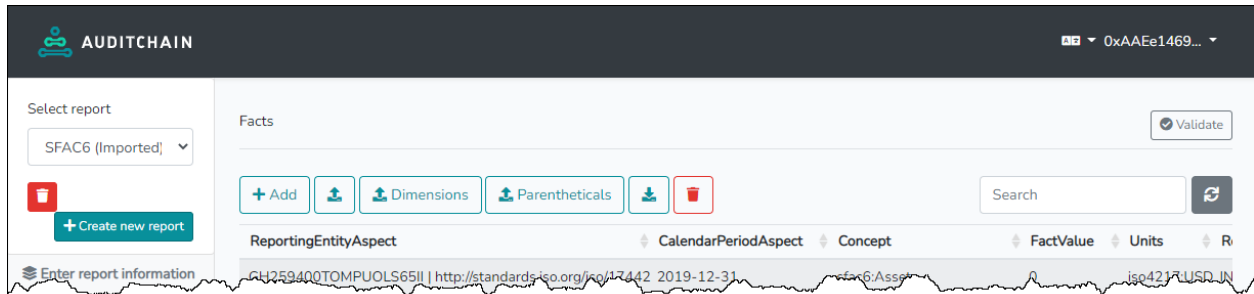
You will then see a "Select Validation Options" form appear:
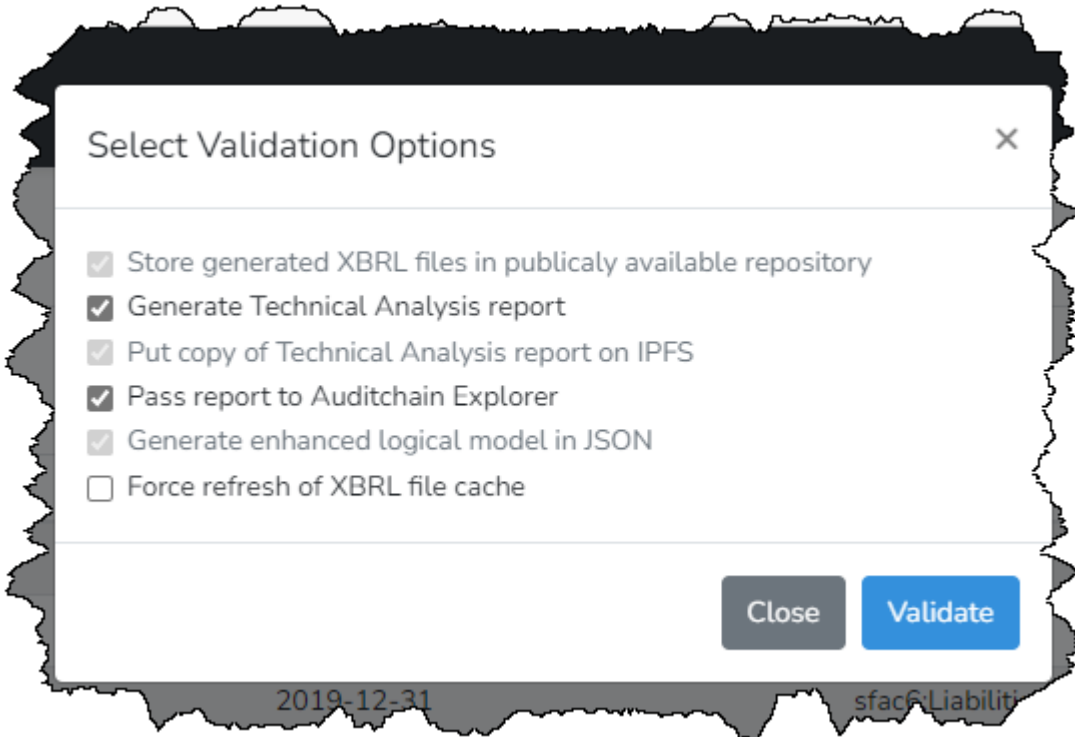
Just accept the default options for now and then press the blue "Validate" button on the lower right hand side of the form. Also select the option "Pass report to Auditchain Explorer".

After a few moments a summary of the verification results will be shown within Luca that looks something like the following:

Back

Analysis of:	Report for GH259400TOMPUOLS65II on 2020-12-31
Analysis ID:	197e72fb2fc3fc2d1e5cbaf859d5d38f84430423
Verification result details	Technical analysis
Verification result details on IPFS	Technical analysis on IPFS
Link to Auditchain Explorer	Auditchain Explorer

Validate options you selected:

☑ cacheValidity(3600)   ☑ saveToIPFS   ☑ extendedJSON   ☑ auditchainTestUI

#	Verification Category	Result
1	XBRL Technical Syntax Verification	✓
2	Report Mathematical Computations Verification (XBRL Calculations)	✓
3	Report Mathematical Computations Verification (XBRL formulas)	✓
4	Report Model Structure Verification	
5	Fundamental Accounting Concept Consistency Crosschecks Verification	
6	Type-subtype (wider-narrower) Associations Verification	
7	Disclosure Mechanics Verification	
8	Report Disclosure Checklist Verification	
9	Other	✓

Messages

#	Type	Stage	Message
1	info	xbrlValidation(done)	"XBRL syntax was verified"

Green means that everything is OK. What you don't want to see is RED anywhere. If you press on the "Technical analysis" button in the upper center of the validation results, you can see details related to the verification of your report and report model. You can also see human readable information about the facts provided by your report.

Dynamic rendering of report information that is human readable:

Block Pivots (one per detected block)

Network	03-Comprehensive Income (http://www.xbrlsite.com/report/role/ComprehensiveIncome)
Table	(implied)

Concept arrangement pattern: **Comprehensive Income [RollUp]** calculation(http://www.xbrlsite.com/report/role/ComprehensiveIncome,sfac6:ComprehensiveIncome)
Entity: GH259400TOMPUOLS65II (http://standards.iso.org/iso/17442)
Unit: iso4217:USD

Concept	Period 2020-01-01 to 2020-12-31
Comprehensive Income [Roll Up]	
Revenues	7,000
Expenses	3,000
Gains	1,000
Losses	2,000
Comprehensive Income	3,000

(below we rearranged the information, pivoting it)

Block Pivots (one per detected block)

Network	03-Comprehensive Income (http://www.xbrlsite.com/report/role/ComprehensiveIncome)
Table	(implied)

Concept arrangement pattern: **Comprehensive Income [RollUp]** calculation(http://www.xbrlsite.com/report/role/ComprehensiveIncome,sfac6:ComprehensiveIncome)
Entity: GH259400TOMPUOLS65II (http://standards.iso.org/iso/17442)
Unit: iso4217:USD

Period	Comprehensive Income [Roll Up]	Revenues	Expenses	Gains	Losses	Comprehensive Income
2020-01-01 to 2020-12-31		7,000	3,000	1,000	2,000	3,000

Model structure:

Model Structure

Network	03-Comprehensive Income (http://www.xbrlsite.com/report/role/ComprehensiveIncome)
Table	(implied)

#	Label	Report Element Class	Period Type	Balance	Name
1	Comprehensive Income [Roll Up]	Abstract			sfac6:ComprehensiveIncomeRollUp
2	Revenues	Concept (Monetary)	duration	credit	sfac6:Revenues
3	Expenses	Concept (Monetary)	duration	debit	sfac6:Expenses
4	Gains	Concept (Monetary)	duration	credit	sfac6:Gains
5	Losses	Concept (Monetary)	duration	debit	sfac6:Losses
6	Comprehensive Income	Concept (Monetary)	duration	credit	sfac6:ComprehensiveIncome

Reported Facts:

Fact Table

Network	03-Comprehensive Income (http://www.xbrlsite.com/report/role/ComprehensiveIncome)
Table	(implied)

#	Block	Reporting Entity [Aspect]	Period [Aspect]	Concept [Aspect]	Fact Value	Unit	Rounding	Parenthetical Explanations	Origin
1	Comprehensive Income [RollUp]	GH259400TOMPUOLS65II (http://standards.iso.org/iso/17442)	2020-01-01 to 2020-12-31	Revenues	7000	iso4217:USD	INF		Reported
2	Comprehensive Income [RollUp]	GH259400TOMPUOLS65II (http://standards.iso.org/iso/17442)	2020-01-01 to 2020-12-31	Expenses	3000	iso4217:USD	INF		Reported
3	Comprehensive Income [RollUp]	GH259400TOMPUOLS65II (http://standards.iso.org/iso/17442)	2020-01-01 to 2020-12-31	Gains	1000	iso4217:USD	INF		Reported
4	Comprehensive Income [RollUp]	GH259400TOMPUOLS65II (http://standards.iso.org/iso/17442)	2020-01-01 to 2020-12-31	Losses	2000	iso4217:USD	INF		Reported
5	Comprehensive Income [RollUp]	GH259400TOMPUOLS65II (http://standards.iso.org/iso/17442)	2020-01-01 to 2020-12-31	Comprehensive Income	3000	iso4217:USD	INF		Reported

Report mathematical relations checks:

Calculations

#	Type	Name	Rule Expression
1	calculation	sfac6:ComprehensiveIncome (in ComprehensiveIncome) • ok:1 • failed:0	total=Revenues_4+(-Expenses_3+(Gains_2+ -Losses_1)) *1 instance:* sfac6:ComprehensiveIncome[3,000] = sfac6:Revenues[7,000] + - sfac6:Expenses[3,000] + sfac6:Gains[1,000] + - sfac6:Losses[2,000]

Value Assertions

#	Type	Name	Rule Expression
1	valueAssertion	BS1 • ok:2 • failed:0	Assets=Liabilities+Equity *2 instances:* sfac6:Assets[0] = sfac6:Liabilities[0] + sfac6:Equity[0] sfac6:Assets[3,500] = sfac6:Liabilities[0] + sfac6:Equity[3,500]
2	valueAssertion	IS1 • ok:1 • failed:0	ComprehensiveIncome=Revenues-Expenses+Gains-Losses *1 instance:* sfac6:ComprehensiveIncome[3,000] = sfac6:Revenues[7,000] - sfac6:Expenses[3,000] + sfac6:Gains[1,000] - sfac6:Losses[2,000]
3	valueAssertion	SHE1 • ok:1 • failed:0	Equity_BalanceStart+ComprehensiveIncome+InvestmentsByOwners-DistributionsToOwners=Equity_BalanceEnd *1 instance:* sfac6:Equity[0] + sfac6:ComprehensiveIncome[3,000] + sfac6:InvestmentsByOwners[1,000] - sfac6:DistributionsToOwners[500] = sfac6:Equity[3,500]

Step 4: Viewing Published Report.

The publishing and verification process sent the XBRL of the published report and that report information was loaded into the Web3 XBRL-based report viewer Auditchain Explorer. You can get to that version of the report information by clicking on the "Auditchain Explorer" button on the validation results summary which was generated because you selected the validation option to do so.

AUDITCHAIN

Analysis of Report for GH259400TOMPUOLS65II on 2020-12-31
Report URL: https://suite.auditchain.finance/storage//rLgMJrAod/instance.xml
Analysis ID: QmZno9b9khpz6nzvYJPk3qLpWNwb3ZRqQ8WwzRyna4NfSi
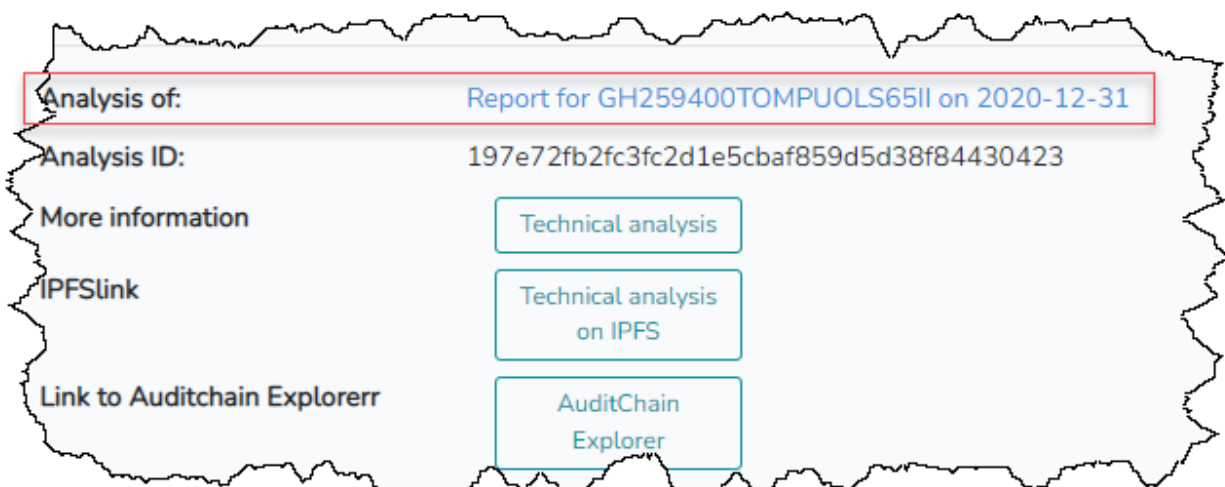
DASHBOARD   EXTENDED ANALYSIS

# Verification Category	Result
1 XBRL Technical Syntax Verification	♒
2 Report Mathematical Computations Verification (XBRL Calculations)	♒
3 Report Mathematical Computations Verification (XBRL formulas)	♒
4 Report Model Structure Verification	♒
5 Fundamental Accounting Concept Consistency Crosschecks Verification	♒
6 Type-subtype (wider-narrower) Associations Verification	♒
7 Disclosure Mechanics Verification	♒
8 Report Disclosure Checklist Verification	♒

Step 5: Machine Readable Version of Published Report.

In addition to the human readable versions of the report that were generated for verification purposes and for the purposes of humans reading the reports, a machine-readable version of the report and report model were published into the Auditchain Repository which is another serviced offered by the Auditchain Suite.

On the verification results page, simply click on the "Analysis of" link which will take you to the XBRL instance document generated by Luca. From that XBRL instance you can navigate to all the report model files connected to the XBRL instance, the Discoverable Taxonomy Set or "DTS" as it is referred to in XBRL jargon.

Analysis of:	Report for GH259400TOMPUOLS65II on 2020-12-31
Analysis ID:	197e72fb2fc3fc2d1e5cbaf859d5d38f84430423
More information	Technical analysis
IPFSlink	Technical analysis on IPFS
Link to Auditchain Explorerr	AuditChain Explorer