

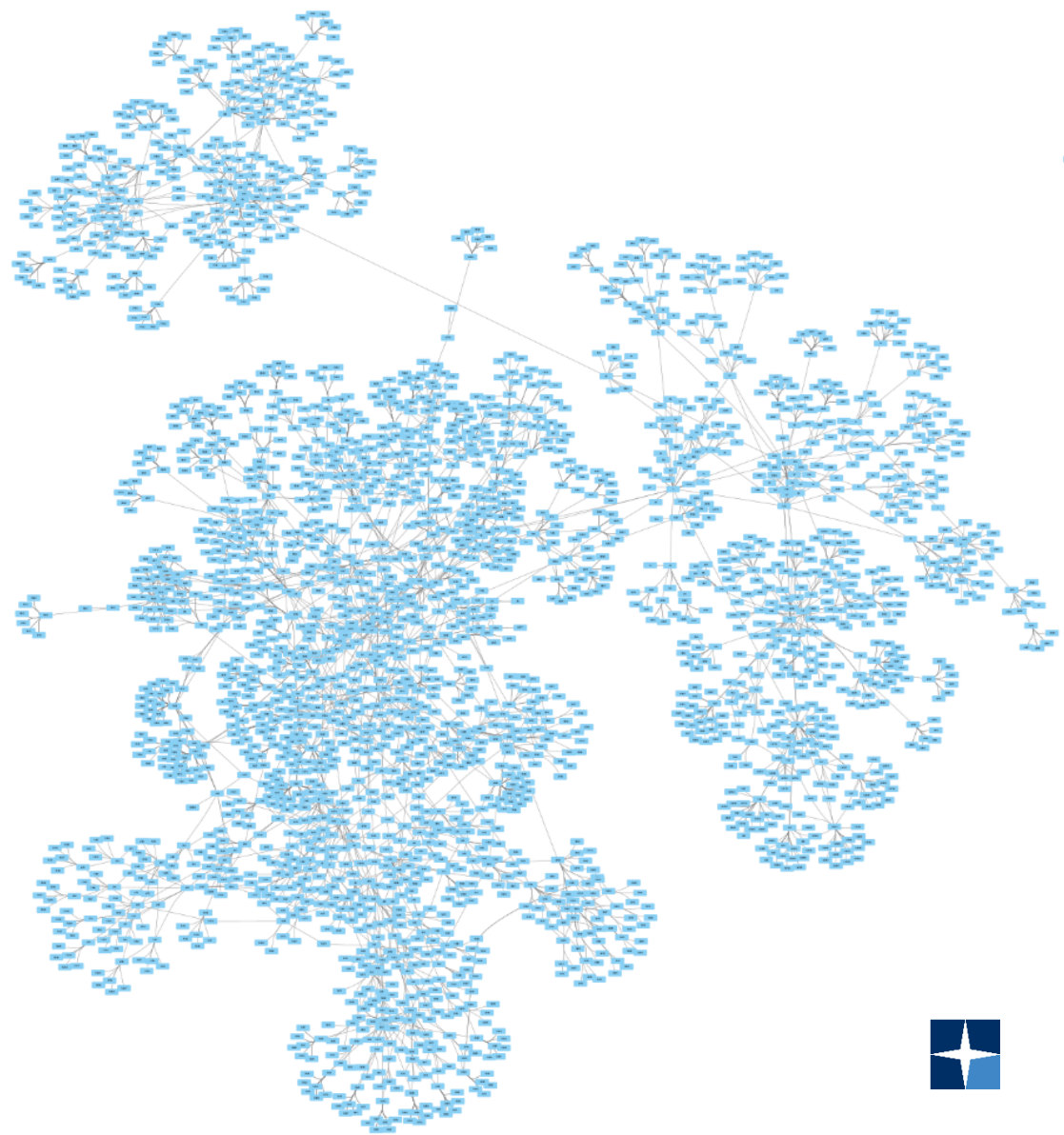
Taxonomy data generator

Eurofiling conference

June 2023

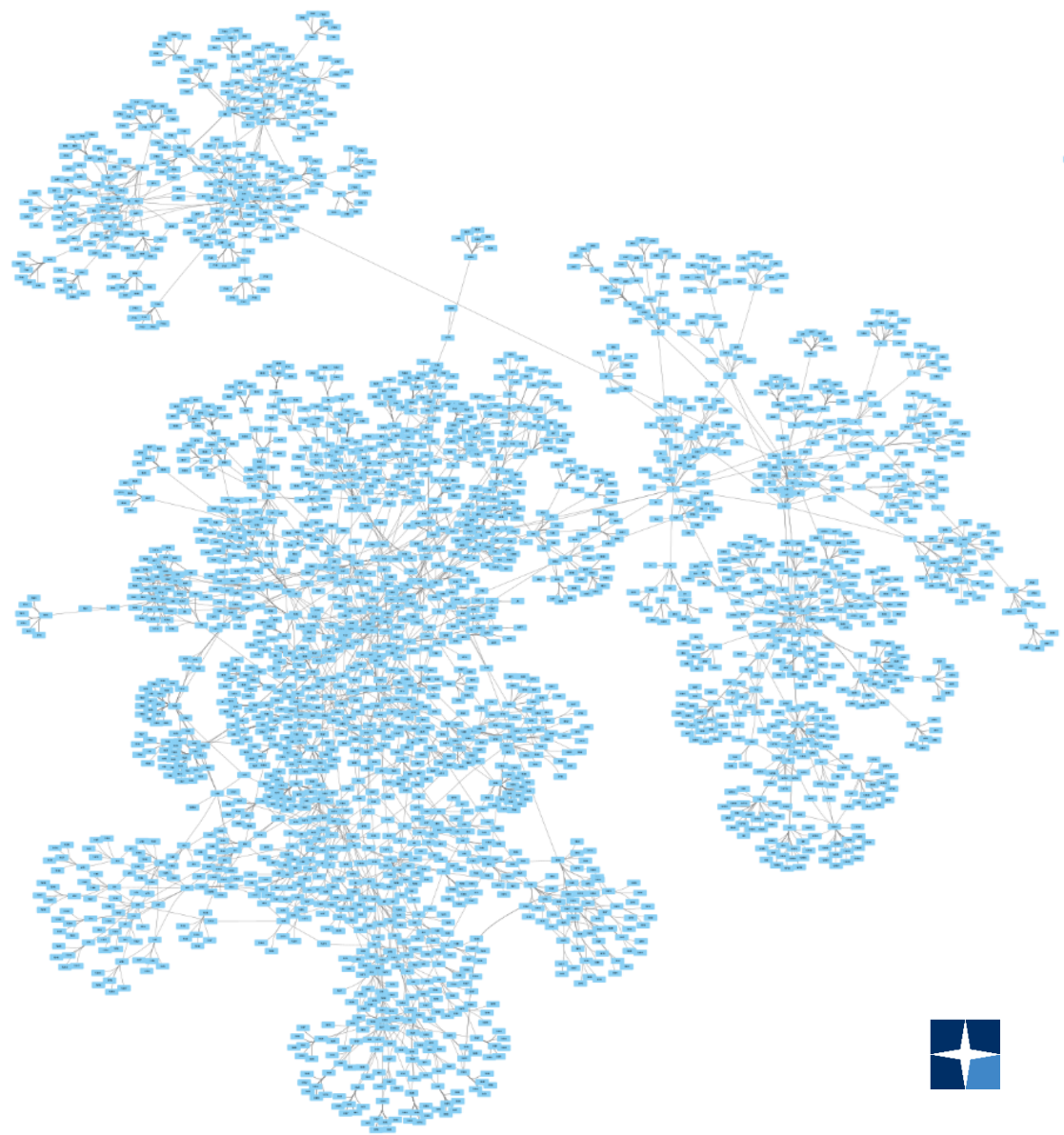
Problem

- Lots of validation rules improve data quality
- 100's or 1,000's rules
- 10,000's of data points
- Impossible to create test data that support best practice development



Opportunity

- Lots of validation rules improve data quality
- 100's or 1,000's rules
- 10,000's of data points
- XBRL Formula network has all the information required to create test data (and more...)



DEMO

[Request demo](#)

[View on LinkedIn](#)



Test data generator

Package: bank-of-england-banking-351-cflv1.0.zip

Taxonomy: Leverage ratio

Real-time updates: Open in Beacon

OPTIMAL in 0.007s

Select all tables

LV40.00.00.01(LR1) Alternative treatment of the exposure measure

	0010	0020	0070	00
0010	95,728	1,000,000	1,000,000	
0020	2,388	3,624	62,978	3
0030			45,361	
0040			17,617	
0050	43,405	43,405	896,726	2
0060	49,935	952,971	40,296	
0071	20,242	1,000,000		
0090	39,427	1,000,000		
0095			1,631	
0210		49,436		
0220		41,813		
0230		22,877		
0240		40,217		

Assertion ID	Tables	Expression	Generator status
+ boe_boe_v10247_h	LV40.00.00.01	iaf:numeric-equ...	OK
+ boe_boe_v10262_s	LV40.00.00.01	\$v0 >= 0	OK
+ boe_boe_v10261_s	LV40.00.00.01	\$v0 >= 0	OK
+ boe_boe_b0003	LV40.00.00.01	\$v0 >= 0	OK
+ boe_boe_b0002	LV40.00.00.01	\$v0 >= 0	OK
+ boe_boe_b0001	LV40.00.00.01	\$v0 >= 0	OK
+ boe_boe_v10098_m	LV40.00.00.01	\$v0 <= \$v1	OK
+ boe_boe_v10244_h	LV40.00.00.01	iaf:numeric-equ...	OK
+ boe_boe_v10097_m	LV40.00.00.01	iaf:numeric-equ...	OK
+ boe_boe_v10095_m	LV40.00.00.01	\$v1 >= \$v0	OK
+ boe_boe_b0027	LV47.00.00.01	iaf:numeric-equ...	OK
+ boe_boe_b0026	LV47.00.00.01	iaf:numeric-equ...	OK
+ boe_boe_b0025	LV47.00.00.01	iaf:numeric-equ...	OK
+ boe_boe_b0024	LV47.00.00.01	iaf:numeric-equ...	OK

Generator UI: Table explorer on left, validation explorer on right. Selecting the table generates valid data.



0 hit
Show

	Accounting balance sheet value		Accounting value assuming no netting or other CRM		Notional amount/ nominal value	Capped notice
	0010	0020	0020	0020	0070	0075
Derivatives	0010	£85,734.00		£1,000,000.00	£500,123.00	
Credit derivatives (protection sold)	0020	£24,753.00		£43,387.00	£48,858.00	
Credit derivatives (protection sold), which are subject to a close out clause	0030				£127.00	
Credit derivatives (protection sold), which are not subject to a close out cla...	0040				£48,731.00	
Credit derivatives (protection bought)	0050	£44,353.00		£44,353.00	£434,331.00	
Financial derivatives	0060	£16,628.00		£912,260.00	£16,934.00	
Security Financing Transactions	0071	£28,251.00		£1,000,000.00		
Other assets	0090	£23,798.00		£1,000,000.00		
Off-balance sheet items	0095				£8,708.00	
Cash collateral received in derivatives transactions	0210			£23,721.00		
Receivables for cash collateral posted in derivatives transactions	0220			£39,654.00		
Securities received in a SFT that are recognised as an asset	0230			£36,675.00		
SFT cash conduit lending (cash receivables)	0240			£15,814.00		
Central bank exposures	0380	£4,551.00				
Total assets	0410	£17,076.00				

Certified XBRL validation, document management and data export from the True North Data Platform



Test data generator

Package: bank-of-england-banking-351-clv1.0.zip

Taxonomy: Leverage ratio

Real-time updates: Open in Beacon

OPTIMAL in 0.005s

Assertion ID	Tables	Expression	Generator status																																			
- boe_boe_v10247_h	LV40.00.00.01	iaf:numeric-equal(\$v0,iaf:sum(\$v1))	OK																																			
<table border="1"> <thead> <tr> <th>Index</th> <th>XBRL result</th> <th>Matching table set</th> <th>Test setting</th> <th>Active</th> </tr> </thead> <tbody> <tr> <td>- boe_boe_v10247_h_0</td> <td></td> <td>LV40.00.00.01</td> <td>Fail</td> <td></td> </tr> <tr> <th>Variable name</th> <th>RC Codes</th> <th>Data Point</th> <th>Value</th> <td></td> </tr> <tr> <td>v0</td> <td>LV40.00.00.01:0010:0070</td> <td></td> <td>500123</td> <td></td> </tr> <tr> <td>v1</td> <td>LV40.00.00.01:0020:0070</td> <td></td> <td>51174</td> <td></td> </tr> <tr> <td>v1</td> <td>LV40.00.00.01:0050:0070</td> <td></td> <td>29587</td> <td></td> </tr> <tr> <td>v1</td> <td>LV40.00.00.01:0060:0070</td> <td></td> <td>4069</td> <td></td> </tr> </tbody> </table>				Index	XBRL result	Matching table set	Test setting	Active	- boe_boe_v10247_h_0		LV40.00.00.01	Fail		Variable name	RC Codes	Data Point	Value		v0	LV40.00.00.01:0010:0070		500123		v1	LV40.00.00.01:0020:0070		51174		v1	LV40.00.00.01:0050:0070		29587		v1	LV40.00.00.01:0060:0070		4069	
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+ boe_boe_b0001	LV40.00.00.01	\$v0 >= 0	OK																																			
+ boe_boe_v10098_m	LV40.00.00.01	\$v0 <= \$v1	OK																																			

Using settings in the assertion explorer to generate a fail case for an individual assertion.



Solution

- Idea is easy

Constraint
 $a = b + c$

Pass
 $2 = 1 + 1$

Fail
 $3 = 1 + 1$

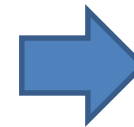
- Logic/math non-trivial

xBRL™
THE BUSINESS REPORTING STANDARD

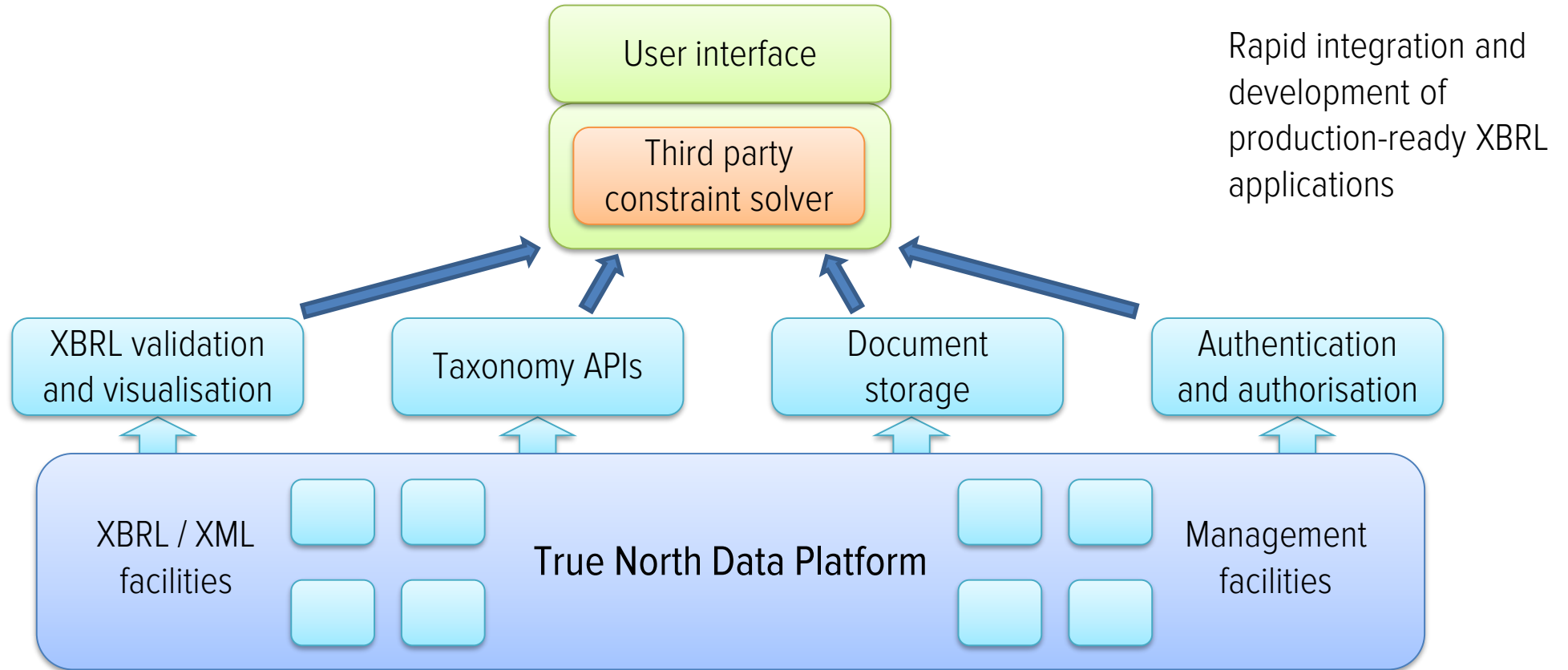
Formula 1.0

$$+ x_{i,j}^{k,m'} + \sum_{j \in J, k \in K} y_j^{k,m} \leq z_i^{m,m'} \quad \forall i \in I, \forall m, m' \in M \quad m \neq m'$$

- Useful software harder



Platform strategic innovation



THANK YOU

Any questions?

[Find out more](#)

