Learnings from project implementations
(surprises, landmines)

Joanna Starczewska

RQS, Advisory Business Solutions Manager, Insurance

Project complexity drivers

There are various types of **factors** which may strongly **impact the** amount of work within the project.

Architecture, volumes

- Scope of implementation
- Centralized vs decentralized
- Number and complexity of entities
- Number and complexity of source systems
- Number of data packages to be handled
- Number of UoA and their subgroups

Data

- Quality of input data
- Number and complexity of validation rules
- Number of different data sets required by actuarial tools and complexity of their content
- Number of data sets generated by actuarial tools, validation rules to be run on them, amount of further processing
- Number and complexity of data to be generated for accounting system.

Methodology

- Different approaches used (BBA, PAA, VFA)
- Level of detail of calculations (lob, cohort, contract, unit of exposure)
- Complexity of grouping algorithm
- Complexity of approach to calculation of RA, CSM, LC
- Complexity of approach to reinsurance held
- Number and complexity of posting rules
- Number and complexity of reconciliation rules
- Complexity of approach for transition period

Process

- Number and complexity of processes to be handled
- Running the proces on the subset of the whole portfolio
- Performance requirements
- Level of traceability and auditability required

Reporting

- Number and complexity of reports changed within IFRS 17 (solo for all entities and for group)
- List of external reports (if any) defined as required (solo for all entities and for group)
- Number and complexity of reports within „internal reporting”

Scope and approach to implementation

Actuarial, modeling tools

1. Gather detailed data
2. Generate expected cashflows on the level of contracts
3. Prepare actual cashflows on the level of Unit of Account

IFRS17 specific calculations, postings and reporting

RA_init Calculations

IFRS 17 Grouping

Assignment of contracts into groups for which CSM/LC is calculated

IFRS 17 Calculation

Calculations of IFRS17 specific measures

Generation of IFRS17 accounting events,

Incl RA Calculations

IFRS17 Subledger

Generate posting entries related to reserves.

Run trial balance and other validation rules.

DATA MANAGEMENT + WORKFLOW + REPORTING

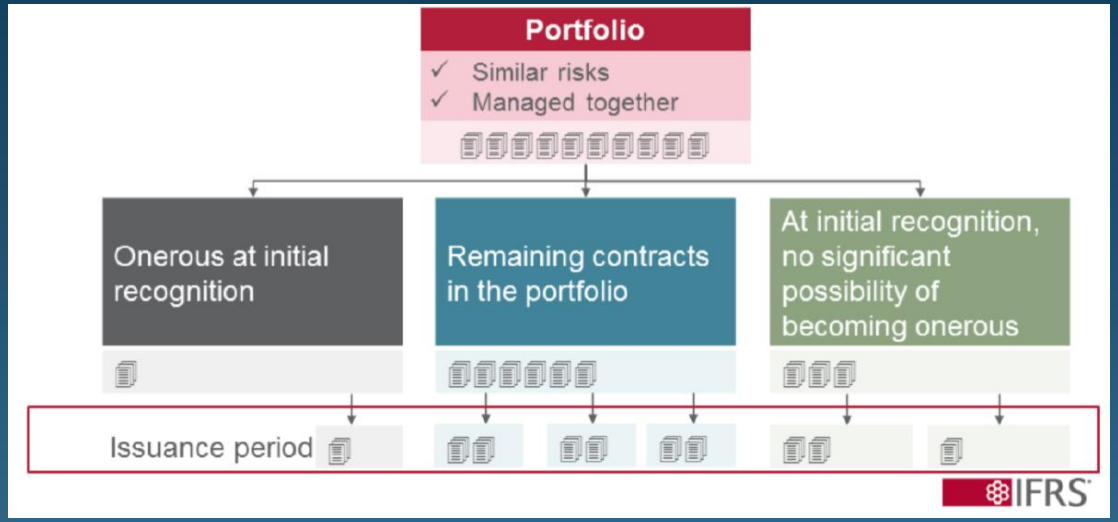
Accounting

1. GL Closing
2. Consolidation
3. Strategic Planning

What is the Unit of Account (UoA)?

NonLife business

In most of the cases actuarial models are working on portfolio level and actuaries need to **allocate down**.



Portfolio

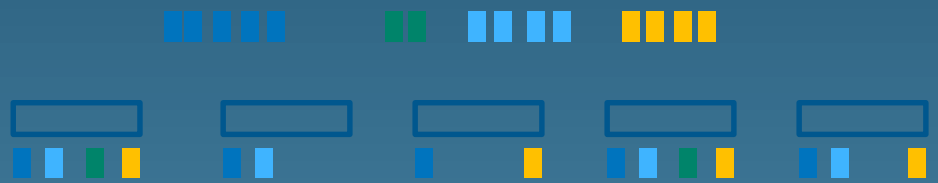
Unit of account

?

Contracts exposures

Life business

Actuarial models work on policies or model points and at initial recognition policies (contracts) need to be assigned/**aggregated to UoA**



Obtaining the UoA

Onerous Grouping

		As of Date	01Jan2015		01Jul2015		01Jan2016	
Cohort Year	Product Group	Grouping	No. of contracts	Fulfilment CF att = 0	No. of contracts	Fulfilment CF att = 0	No. of contracts	Fulfilment CF att = 0
2015	Product A + B	No significant possibility to become onerous subsequently	3	-68029.05	8	-147922.35	8	-147922.35
		Remaining contracts	2	-75381.62	2	-75381.62	2	-75381.62
	Product C	No significant possibility to become onerous subsequently	2	-11279.80	2	-11279.80	.	.
		Onerous	.	.	5	3952.91	.	.
		Remaining contracts	3	-3135.40	3	-3135.40	.	.
	Product D	No significant possibility to become onerous subsequently	3	-1667.50	7	-2683.48	.	.
		Remaining contracts	2	-427.04	3	-543.25	.	.
2016	Product A + B	Onerous	.	.	.	.	5	202086.43
	Product C	No significant possibility to become onerous subsequently	.	.	.	.	1	-7656.50
		Onerous	.	.	.	.	2	753.78
		Remaining contracts	.	.	.	.	2	-1809.34
	Product D	No significant possibility to become onerous subsequently	.	.	.	.	3	-1534.85
		con	.	.	.	.	.	-275.31

How to assign RA at initial recognition to the contract?

How to define „significant possibility”?

Should several options of grouping be tested?

How to derive the attributes of UoA based on contracts’ ones?

Obtaining the UoA

Derivation of attributes

Attributes of UoA that steer the calculations

Could be set depending on the line of business or product

- Measurement approach
- Method of RA calculations (and parameters to be used)
- Approach to finance income and expenses
- Significant finance component (separately for LRC and LIC)
- Approach to amortization of acquisition expenses
- Approach to Analysis of Change
- IR to be used for discounting

Min initial recog, min Begin, max end

- Initial recognition date, Begin, end of coverage date

Based on initial recognition

- UoA subgroups

Data and parameters

Sum

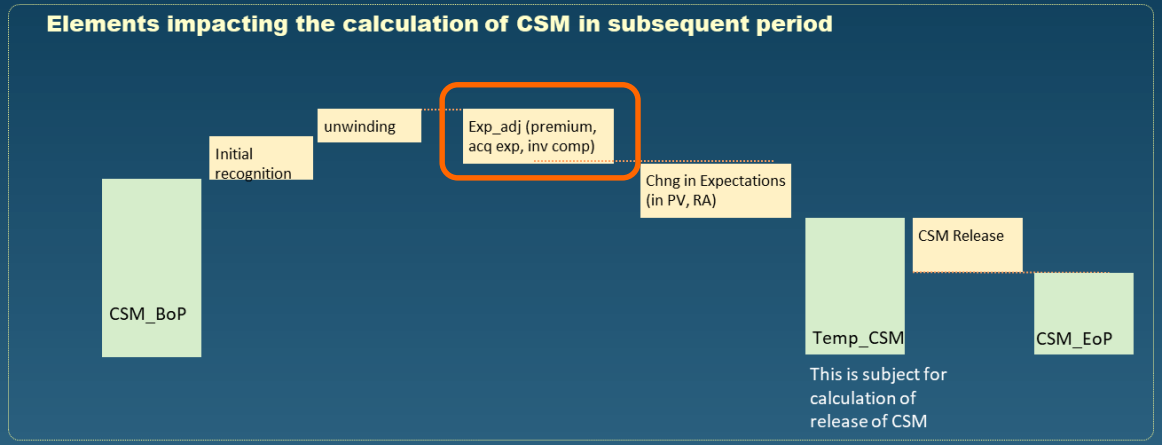
- Expected cashflows,
- Actual cashflows
- Amortization paremeters (for CSM, premium, acq expenses)

Based on parameters on contracts, but: several questions arise:

- It should rather be weighted, but with what?
- Should it be recalculated every reporting period (to make allowance for the derecognition for instance)

Availability of data

Experience Adjustment, Actual cashflows



UoA Id
(info about ins period, acc approach, options)

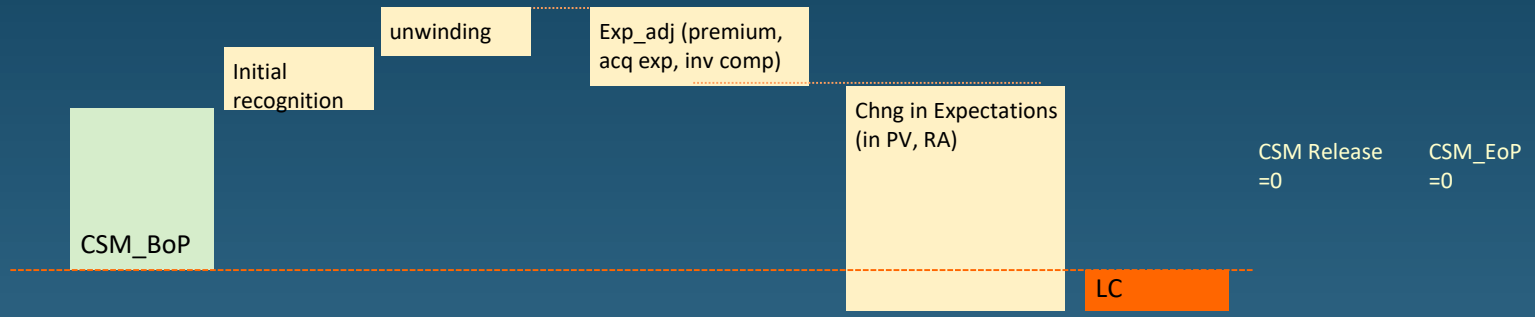
Expected CFs
(for PV and RA, by different legs)

Actual CFs
(by accounts)

- Will require unique id of UoA applied by both actuaries and accountants.
- In many situations it is hard to obtain data on actual cashflows; bulk values need to be allocated down to UoA

Loss Component

In case of negative impact of change in expectations



Loss Component

Loss Component should be identified and detailed disclosure of its release is required

Consistent presentation of impact on SCI is required

What if the change in expectations in RA has different sign than change in expectation of PV? How elements of LC should be created?

LOSS COMPONENT

	2015	2016	2017
	BA(RC)	BA(RC)	BA(RC)
Total	309.29	211.18	108.17
− PV of future insurance contract related CF	189.28	129.24	66.19
Carry Forward	.	189.28	129.24
LC - Unwinding of the Loss Component for the current period	0.00	9.46	6.46
LRC - Initial Recognition - Onerous Contracts - PV of future CF	189.27	.	.
LRC - Release Claim Settlement Costs for the Loss Component	.	-69.50	-69.50
− Risk adjustment	120.01	81.94	41.97
Carry Forward	.	120.01	81.94
LC - Finance Income or Expenses - RA - unwinding	0.02	6.00	4.10
LC - Initial Recognition - Onerous Contracts - Risk Adjustment	119.99	.	.
LRC - RA Prior Periods Loss Component Part	.	-44.07	-44.07

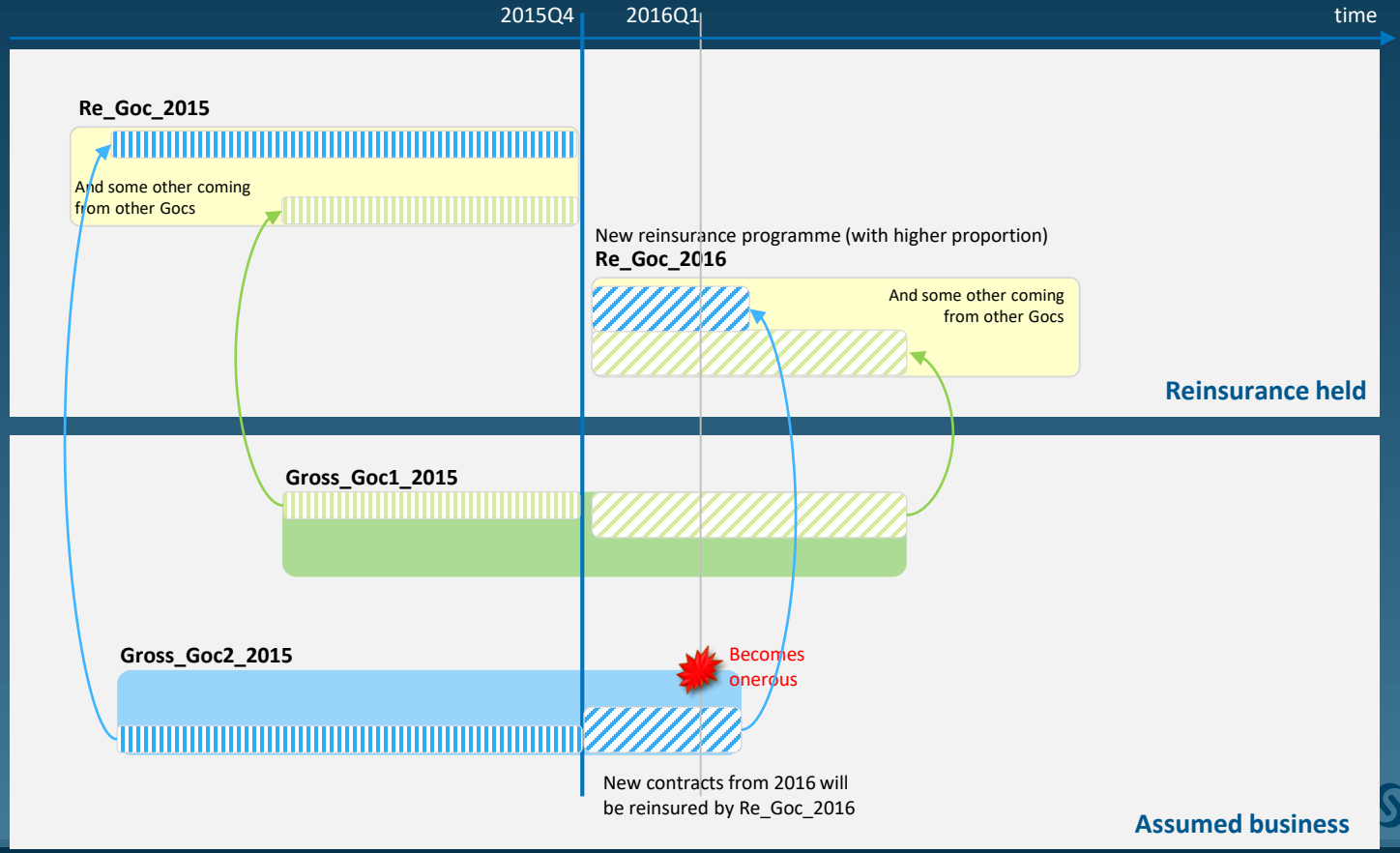
STATEMENT OF COMPREHENSIVE INCOME

	31Dec2015	31Dec2016	31Dec2017
	BA(RC)	BA(RC)	BA(RC)
+ Liabilities and Equity	.	.	0.00
− Profit or Loss	-309.31	-16.40	2.78
− Insurance Revenue	.	330.50	330.50
− Expected Incurred Claims and Other Expenses	.	330.50	330.50
+ Expected Claims	.	330.50	330.50
− Insurance Service Expense	-309.27	-286.43	-286.43
− Changes that relate to future service: losses on onerous contracts and reversal of those losses	-309.27	113.57	113.57
+ Losses on initial recognition of insurance contracts/reinsurance ceded	-309.27	.	.
+ Release of loss component	.	113.57	113.57
+ Incurred claims and other expenses	.	-400.00	-400.00
+ Investment Results	-0.04	-60.47	-41.29

Availability of data

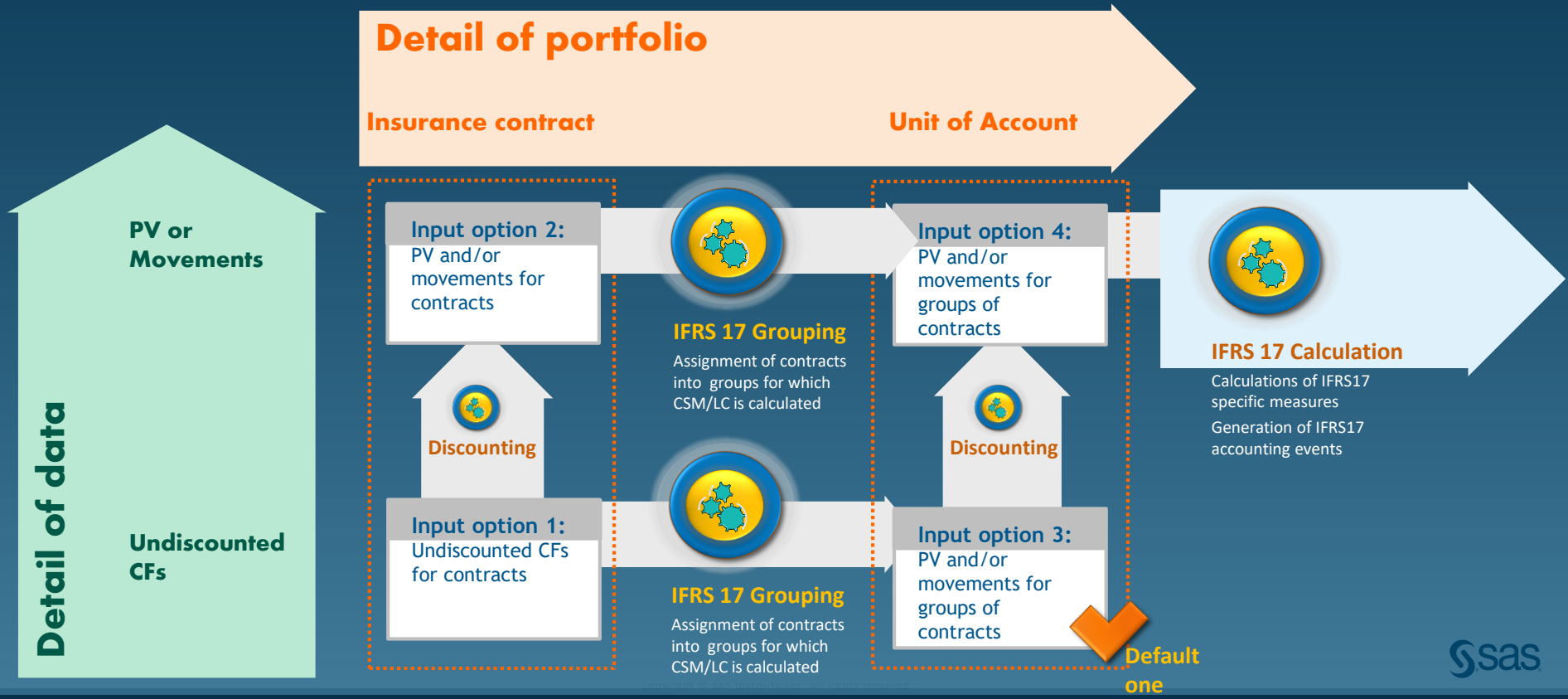
Change in expectations for reinsurance held (par 66c)

One needs to identify which cashflows are coming from [underlying] UoAs which are profitable, and which ones from [underlying] UoAs which are onerous at inception or become onerous.



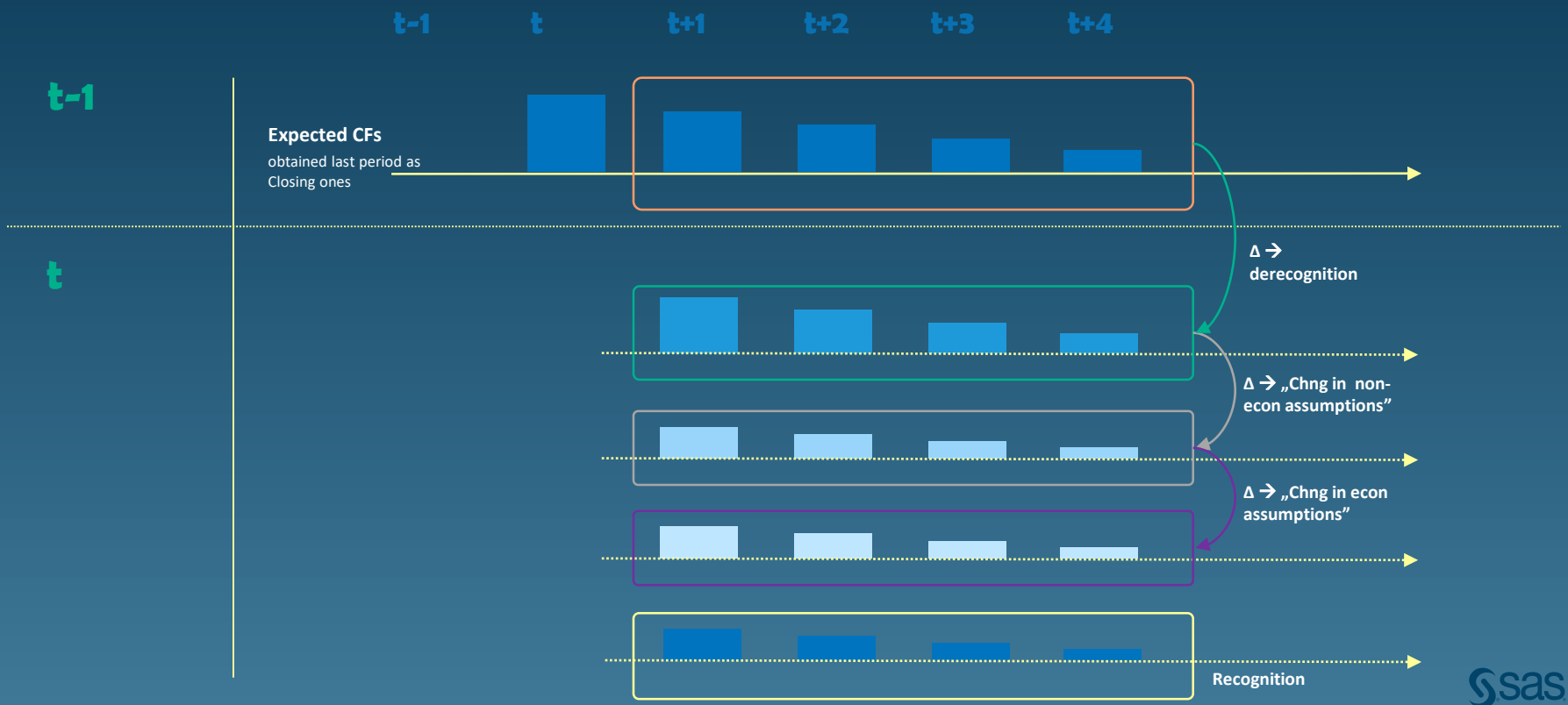
Availability of data

Disocunting done in actuarial models



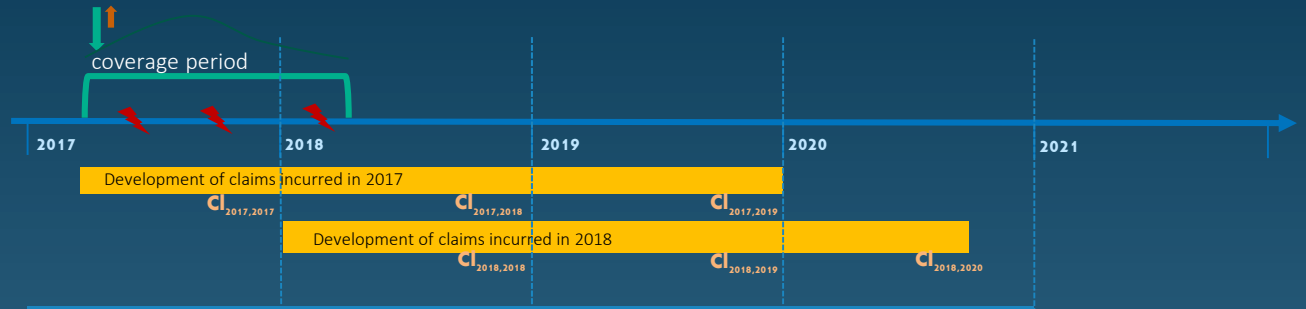
Availability of data

Analysis of change



Challenges of PAA

Assuming that we have a **group of contracts** that
- starts in 2017.04.01 and ends in 2018.03.31
- Single premium paid upfront (1100)
- Acquisition expenses paid upfront (100)
- Premium release pattern (80%,20%)
- Claims ratio 78%
- Claims paid following pattern (70%, 20%, 10%)



1. Is group of contracts onerous?
2. How to calculate Onerous Contract Liability (OCL)?
3. What should be the pattern of amortization of premium (and acq expenses)?
4. Should discounting be applied?

1. How to obtain the **expected cashflows** for LIC just for this group of contracts (issued in 2017, by proftability group)?
2. Are all claims settlement expenses available by group of contracts?
3. Are adequate data to show the reestimation of reserves

	2017.12	2018.12	2019.12	2020.12
LRC	• Expected cashflows: premium, Acq costs • Actual cashflows: premium, Acq costs • Coverage period • Amortization parameter If **OCL calculated** then the same data as for BBA are required	• Coverage period • Amortization parameter • LRC at the end should be 0 If **OCL calculated** then the same data as for BBA are required	No LRC	No LRC
LIC	• Expected cashflows (EXI) • Actual cashflows • Risk adjustment data Locked in curve for claims Incurred in 2017 =2.3	• Expected cashflows (EXI) • Actual cashflows Locked-in curve for claims incurred In 2017=2.3, for those incurred in 2018 =2.6	• Expected cashflows (EXI) • Actual cashflows Locked in curve for claims Incurred in 2018 =2.6	• No expected CFs • Actual cashflows LIC at the end should be =0
	avg IR=2.3	avg IR=2.6	avg IR=2.5	avg IR=2.4

Challenges of PAA

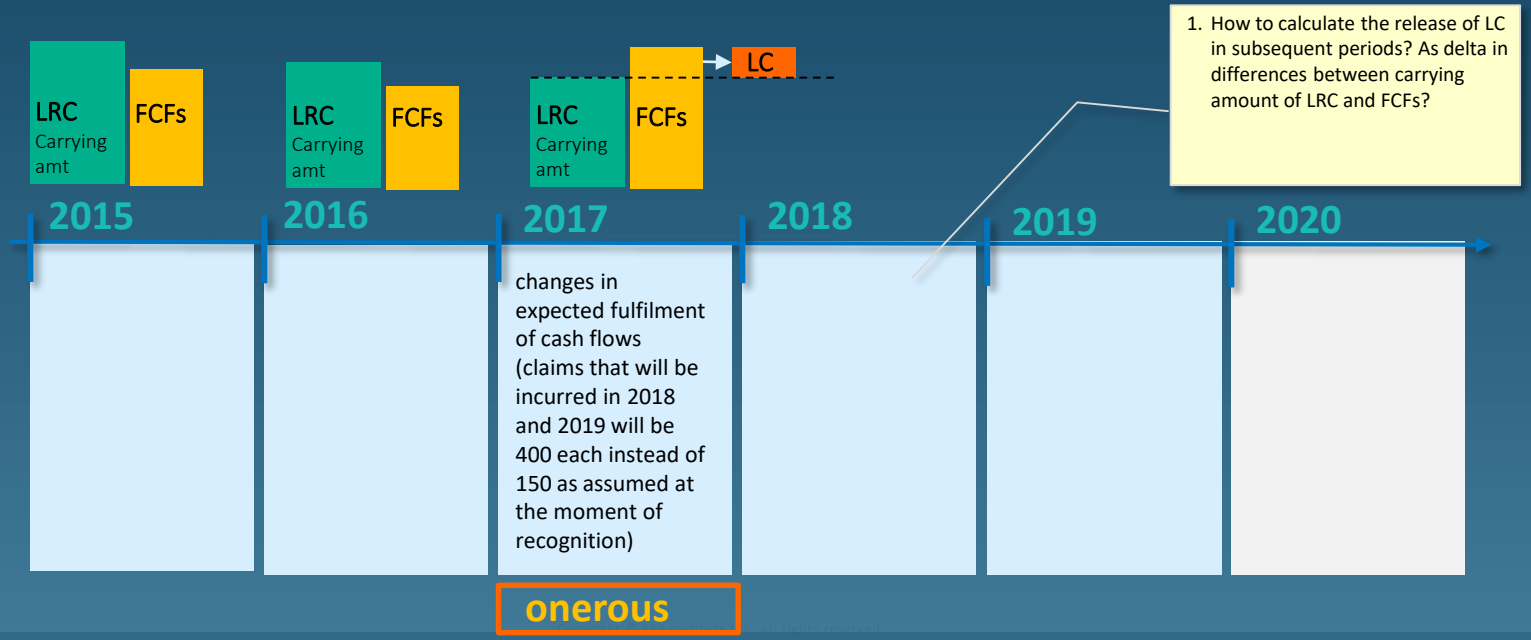
Onerous Contract Liability

Onerous Contract Liability is calculated as difference between :

- The **carrying amount** of the liability for remaining coverage
- The **fulfilment cash flows** measured as **under the general model**

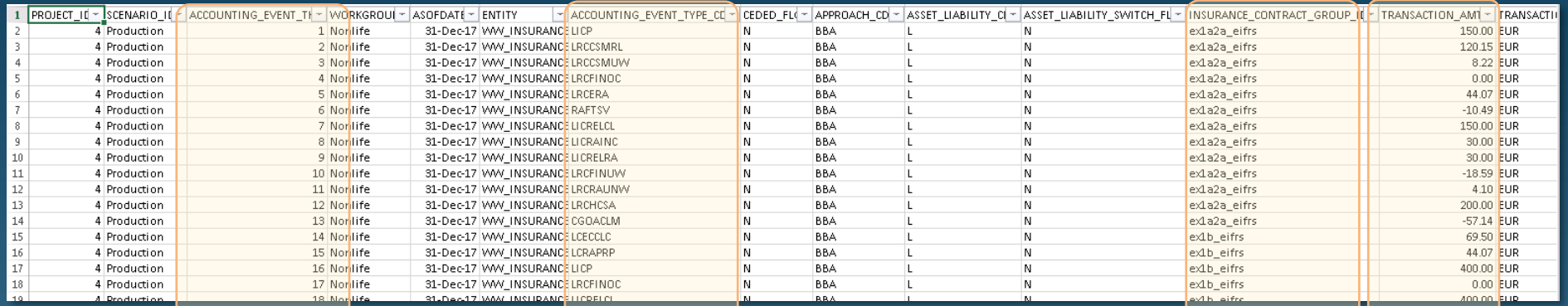
But this would mean that this approach **isn't that simplified** after all, at least not as it comes to the **data required.**

To avoid the need of providing such detailed data and running such verification all the time, one should be able to set the **flag to trigger the onerosity test**.



Flexibility of posting logic

Accounting events – details of results of calculations



	PROJECT_ID	SCENARIO_ID	ACCOUNTING_EVENT_TH	WORKGROUI	ASOFDATE	ENTITY	ACCOUNTING_EVENT_TYPE_CD	CEDED_FL	APPROACH_CD	ASSET_LIABILITY_CI	ASSET_LIABILITY_SWITCH_FL	INSURANCE_CONTRACT_GROUP_I	TRANSACTION_AMT	TRANSACTI
2	4	Production	1	Nonlife	31-Dec-17	WW_INSURANC	LICP	N	BBA	L	N	ex1a2a_eifrs	150.00	EUR
3	4	Production	2	Nonlife	31-Dec-17	WW_INSURANC	LRCCSMRL	N	BBA	L	N	ex1a2a_eifrs	120.15	EUR
4	4	Production	3	Nonlife	31-Dec-17	WW_INSURANC	LRCCSMUW	N	BBA	L	N	ex1a2a_eifrs	8.22	EUR
5	4	Production	4	Nonlife	31-Dec-17	WW_INSURANC	LRCFINOC	N	BBA	L	N	ex1a2a_eifrs	0.00	EUR
6	4	Production	5	Nonlife	31-Dec-17	WW_INSURANC	LRCERA	N	BBA	L	N	ex1a2a_eifrs	44.07	EUR
7	4	Production	6	Nonlife	31-Dec-17	WW_INSURANC	RAFTSV	N	BBA	L	N	ex1a2a_eifrs	-10.49	EUR
8	4	Production	7	Nonlife	31-Dec-17	WW_INSURANC	LICRELCL	N	BBA	L	N	ex1a2a_eifrs	150.00	EUR
9	4	Production	8	Nonlife	31-Dec-17	WW_INSURANC	LICRAINC	N	BBA	L	N	ex1a2a_eifrs	30.00	EUR
10	4	Production	9	Nonlife	31-Dec-17	WW_INSURANC	LICRELRA	N	BBA	L	N	ex1a2a_eifrs	30.00	EUR
11	4	Production	10	Nonlife	31-Dec-17	WW_INSURANC	LRCFINUW	N	BBA	L	N	ex1a2a_eifrs	-18.59	EUR
12	4	Production	11	Nonlife	31-Dec-17	WW_INSURANC	LRCRAUNW	N	BBA	L	N	ex1a2a_eifrs	4.10	EUR
13	4	Production	12	Nonlife	31-Dec-17	WW_INSURANC	LRCHCSA	N	BBA	L	N	ex1a2a_eifrs	200.00	EUR
14	4	Production	13	Nonlife	31-Dec-17	WW_INSURANC	CGOACLM	N	BBA	L	N	ex1a2a_eifrs	-57.14	EUR
15	4	Production	14	Nonlife	31-Dec-17	WW_INSURANC	LCECCLC	N	BBA	L	N	ex1b_eifrs	69.50	EUR
16	4	Production	15	Nonlife	31-Dec-17	WW_INSURANC	LCRAPRP	N	BBA	L	N	ex1b_eifrs	44.07	EUR
17	4	Production	16	Nonlife	31-Dec-17	WW_INSURANC	LICP	N	BBA	L	N	ex1b_eifrs	400.00	EUR
18	4	Production	17	Nonlife	31-Dec-17	WW_INSURANC	LRCFINOC	N	BBA	L	N	ex1b_eifrs	0.00	EUR
19	4	Production	18	Nonlife	31-Dec-17	WW_INSURANC	LICRELCL	N	BBA	L	N	ex1b_eifrs	400.00	EUR

Unique technical key of accounting event in given run

Code of accounting event predefined in dimension, derived based on preconfigured logic

Id of GoC

Value of transaction for each acc event of each GoC

Flexibility of posting logic

Posting logic as configurable element

Accounting Events

ACCOUNTING_EVENT_TY	CEDED_F	APPROACH	ASSET_LIABILITY_C	ASSET_LIABILITY_SWITCH_F	INSURANCE_CONTRACT_GROUP_I	TRANSACTION
LRCPREM	N	VFA	L	N	ex9_eifrs	15,000.00
LRCCSMRL	N	VFA	L	N	ex9_eifrs	0.72
SMVFEFR	N	VFA	L	N	ex9_eifrs	0.23
LRCRAUNV	N	VFA	L	N	ex9_eifrs	0.01
LRCRCRA	N	VFA	L	N	ex9_eifrs	24.99
LRCRCPV	N	VFA	L	N	ex9_eifrs	-819.66

Configuration

ACCOUNTING_EVENT_TYPE_DIM

ACCOUNTING_EVENT_TYPE_CD	ACCOUNTING_EVENT_TYPE_DESC
LRCCSMRL	LRC - Contractual Service Margin - Revenue - CSM release

RULE_SL_ACCOUNT_EVENT_TYPE

SL_ID	ENTITY	ACCOUNTING_EVENT_TYPE_CD	POSTING_GROUP_ID
SL_IFRS17	WW_INSURANCE	LRCCSMRL	LRCCSMRL

ACCOUNT_POSTING_GROUP

SL_ID	POSTING_GROUP_ID	GL_ACCOUNT_ID	DC_CD	MAPPED_COLUMN_NM
SL_IFRS17	LRCCSMRL	IFRS17_COA_LE_Ins_InsCov_CSM	D	POSTING_AMT
SL_IFRS17	LRCCSMRL	IFRS17_COA_PL_IR_CSM_CSMRel	C	POSTING_AMT

COA_GL_DIM

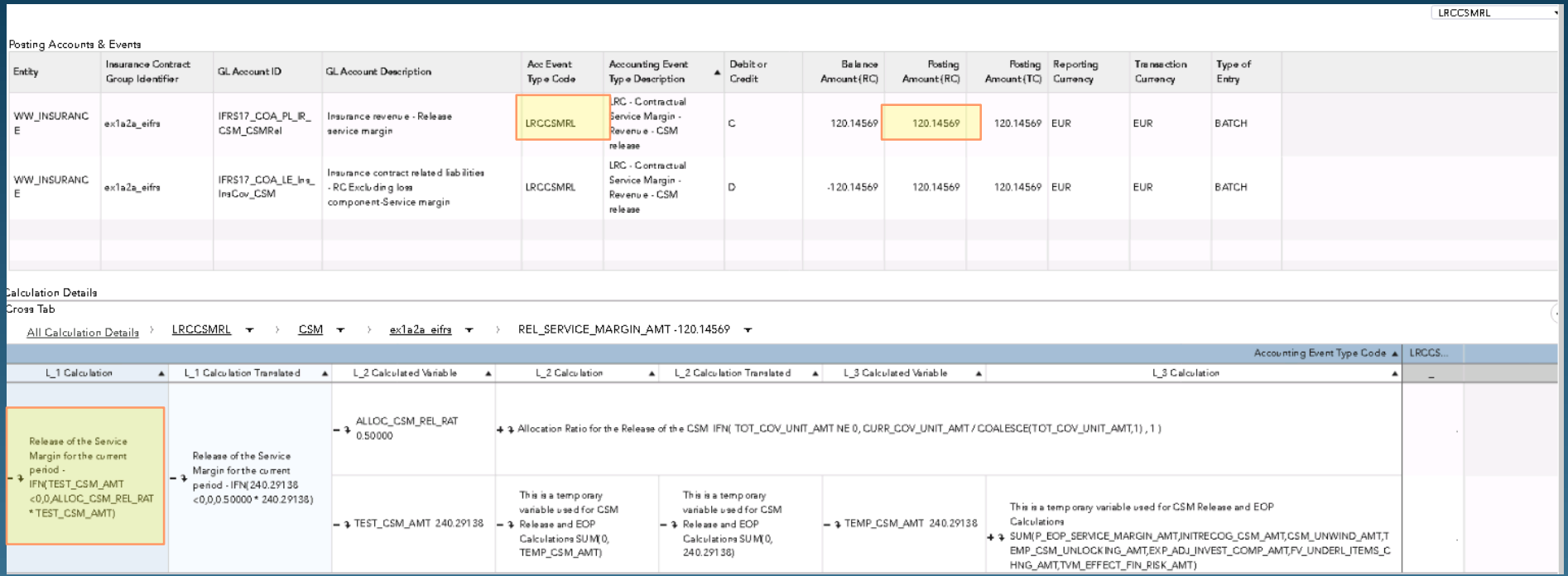
GL_ACCOUNT_ID	GL_ACCOUNT_DESC	GL_ACCOUNT_TYPE
IFRS17_COA_PL_IR_CSM_CSMRel	Insurance revenue - Release service margin	INCOME
IFRS17_COA_LE_Ins_InsCov_CSM	Insurance contract related liabilities - RC Excluding loss component-Service margin	LIABILITY

Derivation of journal entries

Accounting Event Type Description	Indicator Debit or Credit	GL Account Description	Posting Amount (RC)	Balance Amount (RC)	Type of GL Account	Type of Entry
LRC - Contractual Service Margin - Revenue -...	D	Insurance contract related liabilities - RC Excluding loss component-Service margin	0.72	-0.72	LIABILITY	BATCH
LRC - Contractual Service Margin - Revenue -...	C	Insurance revenue - Release service margin	0.72	0.72	INCOME	BATCH

Traceability

Illustration of traceability of calculations



LRCCSMRL

Posting Accounts & Events

Entity	Insurance Contract Group Identifier	GL Account ID	GL Account Description	Acc Event Type Code	Accounting Event Type Description	Debit or Credit	Balance Amount (RC)	Posting Amount (RC)	Posting Amount (TC)	Reporting Currency	Transaction Currency	Type of Entry
WW_INSURANCE	ex1a2a_eifrs	IFRS17_COA_PL_IR_CSM_CSMRel	Insurance revenue - Release service margin	LRCCSMRL	LRC - Contractual Service Margin - Revenue - CSM release	C	120.14569	120.14569	120.14569	EUR	EUR	BATCH
WW_INSURANCE	ex1a2a_eifrs	IFRS17_COA_LE_Ins_InsCov_CSM	Insurance contract related liabilities - RC Excluding loss component-Service margin	LRCCSMRL	LRC - Contractual Service Margin - Revenue - CSM release	D	-120.14569	120.14569	120.14569	EUR	EUR	BATCH

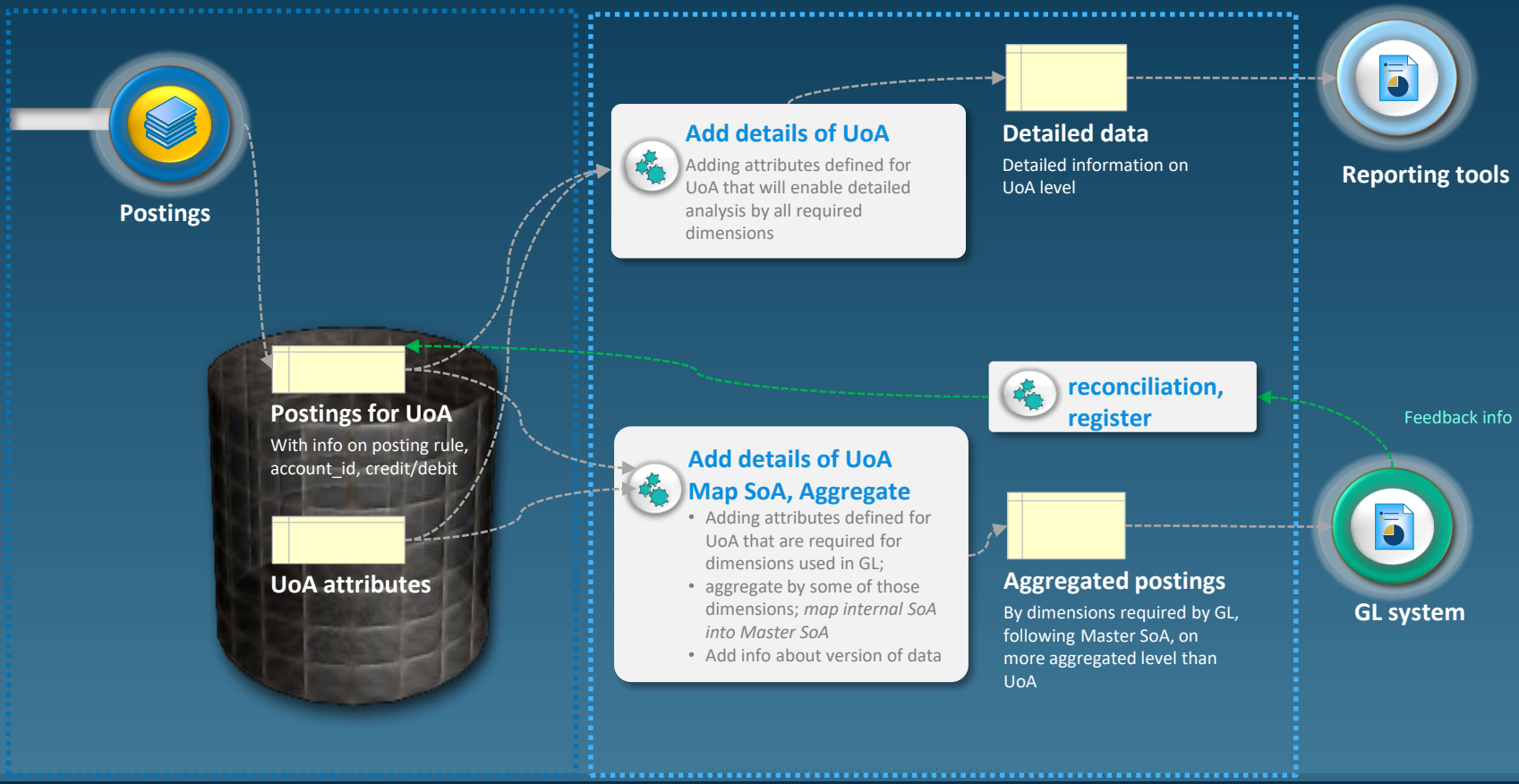
Calculation Details

Cross Tab

All Calculation Details › LRCCSMRL › CSM › ex1a2a_eifrs › REL_SERVICE_MARGIN_AMT -120.14569

L_1 Calculation	L_1 Calculation Translated	L_2 Calculated Variable	L_2 Calculation	L_2 Calculation Translated	L_3 Calculated Variable	L_3 Calculation	Accounting Event Type Code: LRCCS...
Release of the Service Margin for the current period - IFN(TEST_CSM_AMT <0,0,ALLOC_CSM_REL_RAT * TEST_CSM_AMT)	Release of the Service Margin for the current period - IFN(240.29138 <0,0,0.50000 * 240.29138)	ALLOC_CSM_REL_RAT 0.50000	Allocation Ratio for the Release of the CSM IFN(TOT_COV_UNIT_AMT NE 0, CURR_COV_UNIT_AMT / COALESCE(TOT_COV_UNIT_AMT,1) , 1)				
		TEST_CSM_AMT 240.29138	This is a temporary variable used for CSM Release and EOP Calculations SUM(0, TEMP_CSM_AMT)	This is a temporary variable used for CSM Release and EOP Calculations SUM(0, 240.29138)	TEMP_CSM_AMT 240.29138	This is a temporary variable used for CSM Release and EOP Calculations SUM(P_EOP_SERVICE_MARGIN_AMT,INITRECOG_CSM_AMT,CSM_UNWIND_AMT,TEMP_CSM_UNLOCKING_AMT,EXP_ADJ_INVEST_COMP_AMT,FV_UNDERL_ITEMS_CHNG_AMT,TVM_EFFECT_FIN_RISK_AMT)	

Down-stream integration



Reconciliations

Between IFRS17 subledger and General Ledger

Ensure consistency between results kept General Ldger and and those in IFRS17 subledger. It may be obtained by storing the feedback information about the effects of postings in GL, including the document id in GL. This will enable detailed drill through to the data in the IFRS17 subledger as well.

Between IFRS17 and SII

Comparison of some BS accounts is planned to be performed. In most of the cases on more aggregated level (UoA are not defined in context of SII, neither SII lobs in context of IFRS17).

Between IFRS17 and local accounting standards

Comparison of the BS accounts is planned to be performer on more aggregated level.

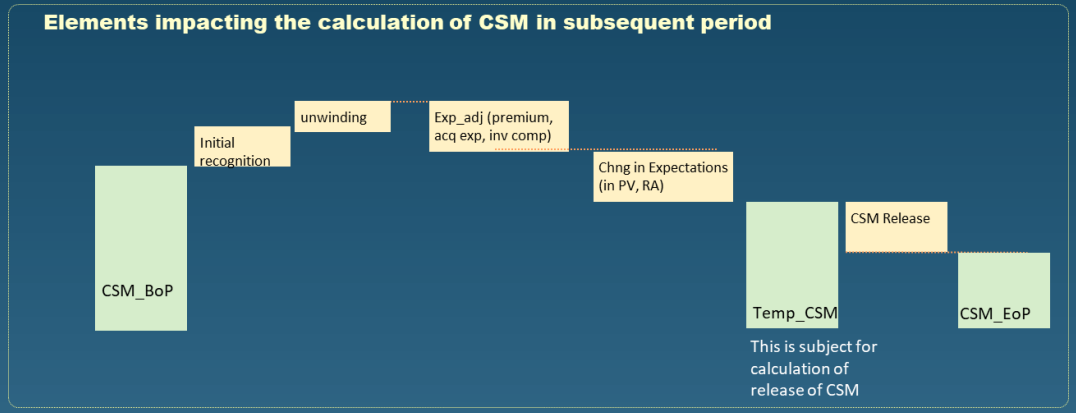
Between IFRS17 disclosures and internal reporting

In some cases, for internal purposes, more detailed analysis of results is done by dimensions which are not obligatory from perspective of IFRS17 disclosures but interesting form profitability management point of view. For this purpose, the IFRS17 measures are sometimes allocated down to more detailed level and presented in several internal reports. It is important that the information presented in such reports is consisten with results in disclosure reports

Reconciliations

Between actuarial calculations and accounting postings

Ensure consistency between results of actuarial calculations and balance of account resulting from posting entries



All these steps need to be performed by „actuarial" module/part of the solution to be able to calculate the release of CSM and determine whether UoA is profitable of not.

Results of calculations are provided to the subledger as acocunting events and based on that the posting entries are generated. Based on them, the final balance of each account is determined.
These balance values should be consistent with the EoP values calculated by the „actuarial" module.

Between actuarial calculations in subsequent periods

Very rarely but still [especially for LIC], the predefined movements do not explain the difference between EoP values of subsequent periods. In such situations, additional „other" element is added.

Project complexity drivers

There are various types of **factors** which may strongly **impact the** amount of work within the project.

Architecture, volumes

- Scope of implementation
- Centralized vs decentralized
- Number and complexity of entities
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- Quality of input data
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- Number and complexity of processes to be handled
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Implementation approach

ASSESSMENT

- Gap Analysis
- Initial roadmap

CUSTOMIZATION

First model based on defined **use-cases**

- All to-be-applied IFRS17 approaches
- Based on priorities and availability (people, data, models)
- Covering representative use cases
- no integration yet

APPLICATION

Applying the model

- Full business scope (iterative or parallel if possible)
- Based on full data
- Integration with existing IT infrastructure

TRANSITION

Adjustments

Generation of disclosure reports for comparative studies

Steps may be repeated in iterations

Possible variations of use cases

- Having or not having **investment component**
- Applying **different amortization parameters**
- Having the date of **recognition equal to date of inception or not** equal (day before etc) and having **different values of IR quotes** for them
- With or without **TVOG**
- Based on **annual** or **quarterly** reporting
- For quarterly one – simulate situation **of NB during the year**.
- **single premium** paid at the **beginning or at the end** of coverage
- **claims** are **paid when incurred** and claims paid **following development pattern**
- With **experience adjustment** - difference between expected and paid premiums, acquisition expenses, investment component
- **change in expected** cashflows.
- **IR is changed** (with situation when it is changed during the coverage and should still impact or when it happens in last period)
- **OCI** possible options
- different **currencies** in cashflows or has different currency than entity
- **Derecognition**
- **profitable** UoA **becomes onerous and opposite**.
- Various **approaches of risk adjustment**

Thank you

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