

Functionalities of IFRS17 demonstrated on simple contract

In order to demonstrate IFRS 17 functionality we can take simple 3 year contract. Expected cash flows are:

- premium 1000€
- commision 100€
- claims 600€, 200€ for each year of coverage
- later expected claims for 2017 are raised by 100€ (to 300€ instead of 200€)
- interest rate increases by 5%
- risk adjustment is 10% of claims incurred

The solution saves hystoric and actual interest rates as required by the standard. On the picture below, there are historic interests rates shown in column »Locked-in factor« and actual interest rates saved in column »Discount factor«.

	Previous	Recognition	Rec. discount	Nominal	Discount factor	Discount	Locked-in factor	Discount locked
017	220,00	0,00	0,00	220,00	0,909091	200,00	0,952381	209,53
016	440,00	0,00	0,00	550,00	0,909091	481,82	0,952381	513,83
RODUCT1_EUR	440,00	0,00	0,00	550,00	0,909091	481,82	0,952381	513,83
201601_201812	440,00	0,00	0,00	550,00	0,909091	481,82	0,952381	513,83
● Insurance	400,00	0,00	0,00	500,00	0,909091	438,02	0,952381	467,12
31/12/2017	200,00	0,00	0,00	300,00	0,909091	272,73	0,952381	285,71
31/12/2018	200,00	0,00	0,00	200,00	0,826446	165,29	0,907029	181,41

Figure 1 Saved historic and actual interest rates

Initially we expect 600€ with present value of 546€. Remaining 353,17€ is allocated to risk adjustment (aka RA) and contract service margin (aka CSM). On the picture bellow we can see that initial liability for remaining coverage is 546,83€.

	Previous	Recognition	Unwinding	Change rate	Chg rate derec	Change CF-OCI	Unlocking CSM	Change CF-PL	Amortisation	Derecognition	PV future CF	Check
⊕ 31/12/2018	181,82	0,00	9,52	8,66	0,00	0,00	0,00	0,00	-200,00	0,00	0,00	0,00
⊕ 31/12/2017	438,02	0,00	23,36	20,44	0,00	0,00	0,00	0,00	-300,00	0,00	181,82	0,00
⊕ 31/12/2016	546,83	0,00	25,06	-29,10	0,00	0,00	95,24	-0,01	-200,00	0,00	438,02	0,00
⊕ 31/01/2016	0,00	-353,17	0,00	0,00	0,00	0,00	0,00	0,00	900,00	0,00	546,83	0,00

Figure 2 PV of future cash flows with reconciliation

Solution performs automatic reconciliation checks of movement. For example:

• initial balance at beginning of the period:	546,83€
• interest accrual:	+ 25,06€
• effect of change of interest rate:	- 29,10€
• increase of expectation	+ 95,24€
• amortisation of expected claims for the period (2016) -	<u>200€</u>
SUM	438,03€

Calculated amount of 438,03€ is compared to PV(FCF) of 438,02€. The difference of 0,01€ has arisen due to rounding. Solution automatically creates appropriate posting:

Transaction	Description	Account	Account description	Sign	Amount
000020_36	LRC - Delta cash flow recognised in profit or loss	03.01.060.020	Favourable Change in cash flow expectations	Credit	0,01

Figure 3 Posting to allow for rounding error

As expectation of claims in 2017 has been increased from 200€ to 300€ and there is assumption that RA is 10% of claims incurred, RA is also increased. Its PV is increased by 9,52€. The Standard allows different treatment of this increase, for example it may be done on the expense of CSM.

Previous CSM	Recognition	Accretion	Unlocking Risk adj	Unlocking CF	Coverage ratio	Release	Derecognition	CSM	Onerous liability	Check
73,03	0,00	3,65	0,00	0,00	0,00	76,68	0,00	0,00	0,00	0,00
139,10	0,00	6,96	0,00	0,00	0,00	73,03	0,00	73,03	0,00	0,00
298,49	0,00	14,92	-9,52	-95,24	0,00	69,55	0,00	139,10	0,00	0,00

Figure 4 Reconciliation of CSM

Solution also performs automatic reconciliation of CSM. For example:

• initial balance	298.49€
• interest accrual	+ 14,92€
• unlocking of CSM due to RA increase	- 9,52€
• unlocking of CSM due to increase of expectation	- 95,24€
• release of CSM (for the year 2016)	- <u>69,55€</u>
SUM	139,10€

Calculated amount of 139,10 is compared to 139,10€ and no difference is observed.

If increase of expectation would be more severe, it could happen that CSM would not be big enough. In such cases Onerous Liability would be established and corresponding amount would be posted as loss as shown bellow (for different portfolio):

Previous CSM	Recognition	Accretion	Unlocking Risk adj	Unlocking CF	Coverage ratio	Release	Derecognition	CSM	Onerous liability
63.252,48	0,00	1.739,44	0,00	0,00	0,00	64.991,92	0,00	0,00	0,00
128.403,10	0,00	3.852,09	0,00	0,00	0,00	69.002,71	0,00	63.252,48	0,00
189.704,87	0,00	5.691,15	0,00	0,00	0,00	66.992,92	0,00	128.403,10	0,00
0,00	189.704,87	0,00	0,00	0,00	0,00	0,00	0,00	189.704,87	0,00
523.697,90	0,00	15.710,94	-596,22	-876.452,67	0,00	0,00	-107.881,77	0,00	-445.521,82
531.246,02	0,00	1.328,12	0,00	0,00	0,00	8.876,24	0,00	523.697,90	0,00
0,00	531.246,02	0,00	0,00	0,00	0,00	0,00	0,00	531.246,02	0,00

Measures										
Recognition	Previous OCL	Amortization	Risk amortization	Unwinding	Risk unwinding	Change rate	Risk change rate	Derecognition	Unlocking Risk adj	
0,00	-445.521,82	31.316,25	0,00	-12.320,76	-444,92	14.862,94	190,95	0,00	2.722,27	
-445.521,82	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	

Figure 5 Example of Onerous Liability

In case of subsequential positive change of claim experience this Onerous Liability is reduced and profit is recognised. If positive change is bigger than Onerous Liability, than CSM is established again.

In this example claims are settled within the period and no Liability for Incurred Claims (aka. LIC) is established.

Results may be shown graphically as shown on the picture bellow:

Liability for remaining coverage

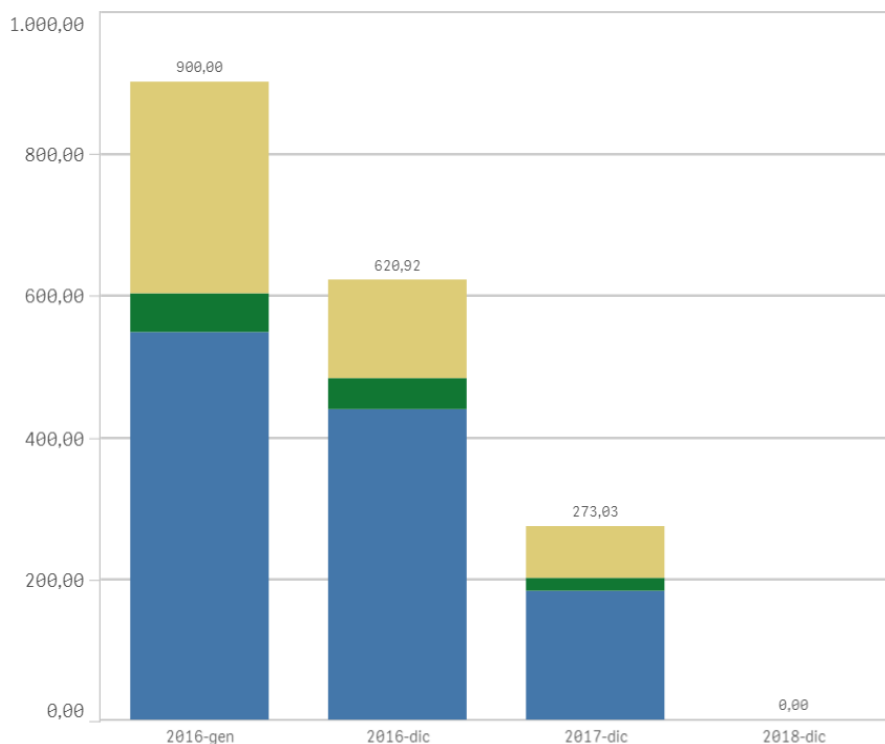


Figure 6 Results for Standard method (aka. BBA)

Solution also support Simplified method (aka Premium Allocation Approach, PAA). Insurance may compare the difference in order to justify use of PAA. On the picture bellow there is shown comparison between these two methods for another portfolio. Both methods produce similar results.

Compare BBA vs PAA

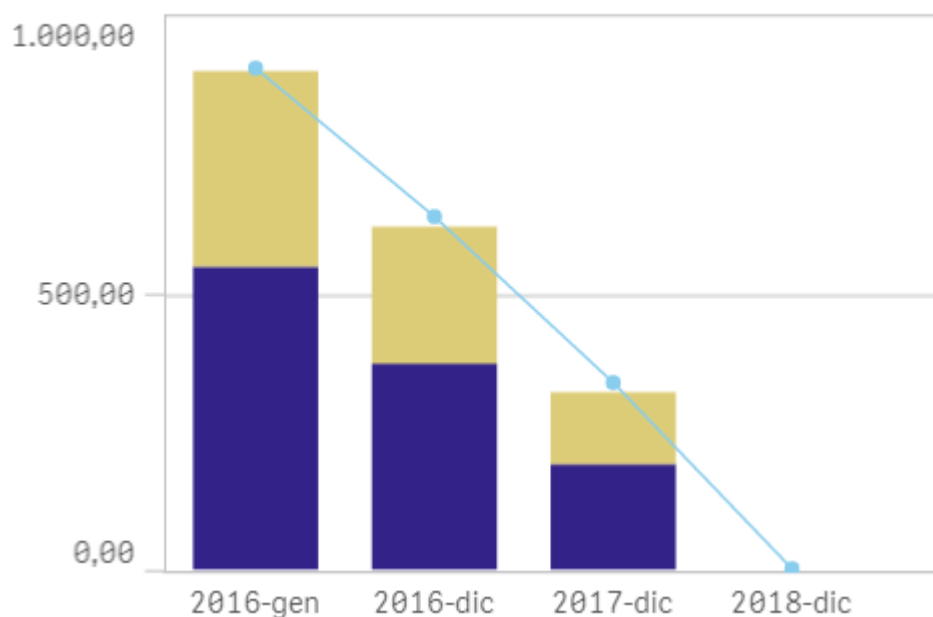


Figure 7 Comparison of BBA and PAA (for different portfolio)

Solution produce Balance and Profit and Loss Statements.

Profit and loss			
Sub Ledger ▼	Account ▼	Sub account ▼	Reference date ▼
Portfolio ▼	Posting ▼		
		31/01/2016	31/12/2016
⊕ 01 - INCOME		100,00	471,94
● 02 - EXPENSE		-100,00	-321,05
⊕ 010 - Incurred claims (not paid)	-		-200,00
⊕ 020 - Acquisition costs		-100,00	-33,33
⊕ 030 - Interest Accretion (Unwinding)	-		-87,72
● 04 - Profit / Loss of the period		0,00	150,89
● 000 - Profit / Loss of the period		0,00	150,89
⊕ 000 - Profit / Loss of the period		0,00	150,89

Figure 8 Profit and Loss Statement

Solution produces appropriate postings for the general ledger. These postings are fully customisable according to the requirements of the general ledger.

Measure	Transaction	Description	Account	Account description	Sign	Amount
PREMIUM	000001_27	ACT - Premiums	03.01.010.000	Premiums received	Credit	1,000,00
PREMIUM	000001_28	ACT - Premiums	02.03.010.030	Liability for remaining insurance coverage provided (BBA)	Credit	1,000,00
CLAIM	000003_59	ACT - Claims Incurred	03.02.010.000	Incurred claims (not paid)	Credit	300,00
CLAIM	000003_60	ACT - Claims Incurred	03.01.040.010	Release expected cash flow	Credit	300,00
CLAIM	000003_61	ACT - Claims Incurred	02.03.030.020	Liability for incurred claims	Credit	300,00
AM_REC	000004_55	LIC - Cash flow initial recognition	02.03.030.020	Liability for incurred claims	Credit	300,00
CLAIM_SETT	000005_62	ACT - Claim Settlement	01.07.010.000	Banks	Credit	300,00
AM_CSM_REC	000007_24	LRC - Contractual service margin initial recognition	02.03.010.010	Liability for remaining insurance coverage provided (BBA)	Credit	298,49
CLAIM	000003_45	ACT - Claims Incurred	03.02.010.000	Incurred claims (not paid)	Credit	200,00

Figure 9 Example of postings for the general ledger

Disclosures of statutory reports

Solution may be implemented in such way that statutory reports are reconciled according to sample provided by auditor. For example, bellow are reconciliations according to the sample, provided by KPMG.

In millions of USD	Note	2017					2016				
		Liabilities for incurred claims (see (D))					Liabilities for incurred claims (see (D))				
		Contracts under PAA					Contracts under PAA				
		Liabilities for remaining coverage	Contracts not under PAA	Estimates of present value of future cash flows	Risk adjustment for non-financial risk	Total	Liabilities for remaining coverage	Contracts not under PAA	Estimates of present value of future cash flows	Risk adjustment for non-financial risk	Total
Opening liabilities		624	-	-	-	624	900	-	-	-	900
Changes in the statement of profit or loss and OCI											
Insurance revenue	9	(437)	-	-	-	(437)	(324)	-	-	-	(324)
Insurance services expenses											
Incurred claims and other insurance service expenses		-	300	-	-	300	-	200	-	-	200
Amortisation of insurance acquisition cash flows		34	-	-	-	34	34	-	-	-	34
Losses and reversal of losses on onerous contracts		-	-	-	-	-	-	-	-	-	-
Adjustments to liabilities for incurred claims		-	-	-	-	-	-	-	-	-	-
		34	300	-	-	334	34	200	-	-	234
Insurance service result		(403)	300	-	-	(103)	(290)	200	-	-	(90)
Net finance expenses from insurance contracts	10	33	-	-	-	33	42	-	-	-	42
Effect of movements in exchange rates		(9)	-	-	-	(9)	(29)	-	-	-	(29)
Total changes in the statement of profit or loss and OCI		(379)	300	-	-	(79)	(276)	200	-	-	(76)
Cash flows											
Premiums received		-	-	-	-	-	-	-	-	-	-
Claims and other insurance service expenses paid		-	(300)	-	-	(300)	-	(200)	-	-	(200)
Insurance acquisition cash flows		-	-	-	-	-	-	-	-	-	-
Total cash flows		-	(300)	-	-	(300)	-	(200)	-	-	(200)
Contracts transferred on disposal of subsidiary	35(B)(i)	-	-	-	-	-	-	-	-	-	-
Closing liabilities		245	-	-	-	245	624	-	-	-	624

Figure 10 Analysis by remaining coverage and incurred claims

In millions of USD	Note	2017				2016			
		Estimates of present value of future cash flows	Risk adjustment for non-financial risk	CSM (see C))	Total	Estimates of present value of future cash flows	Risk adjustment for non-financial risk	CSM (see C))	Total
Opening liabilities		438	44	139	621	547	55	298	900
Changes in the statement of profit or loss and OCI									
Changes that relate to current services									
CSM recognised for services provided		-	-	(73)	(73)	-	-	(70)	(70)
Change in risk adjustment for non-financial risk for risk expired		-	(30)	-	(30)	-	(20)	-	(20)
Experience adjustments		-	-	-	-	-	-	-	-
Changes that relate to future services									
Contracts initially recognised in the year		-	-	-	-	-	-	-	-
Changes in estimates that adjust the CSM		-	-	-	-	95	10	(105)	-
Insurance service result		-	(30)	(73)	(103)	95	(10)	(174)	(90)
Net finance expenses from insurance contracts		23	2	7	33	25	3	15	42
Effect of movements in exchange rates		20	2	-	22	(29)	(3)	-	(32)
Total changes in the statement of profit or loss and OCI		44	(26)	(66)	(48)	91	(11)	(159)	(79)
Cash flows									
Premiums received		-	-	-	-	-	-	-	-
Claims and other insurance service expenses paid		(300)	-	-	(300)	(200)	-	-	(200)
Total cash flows		(300)	-	-	(300)	(200)	-	-	(200)
Closing liabilities		182	18	73	273	438	44	139	621

Figure 11 Analysis by measurement component

Above analysis use different definitions of revenue. An error may be detected in case of difference between them.

Friendly dynamic presentation layer

Solution supports different BI tools, like Qlik, PowerBI, MicroStrategy. It creates data mart cube that may be accessed by different tools, for example PowerBi.

By default connection to Qlik is provided, however reports may be designed for different tools.

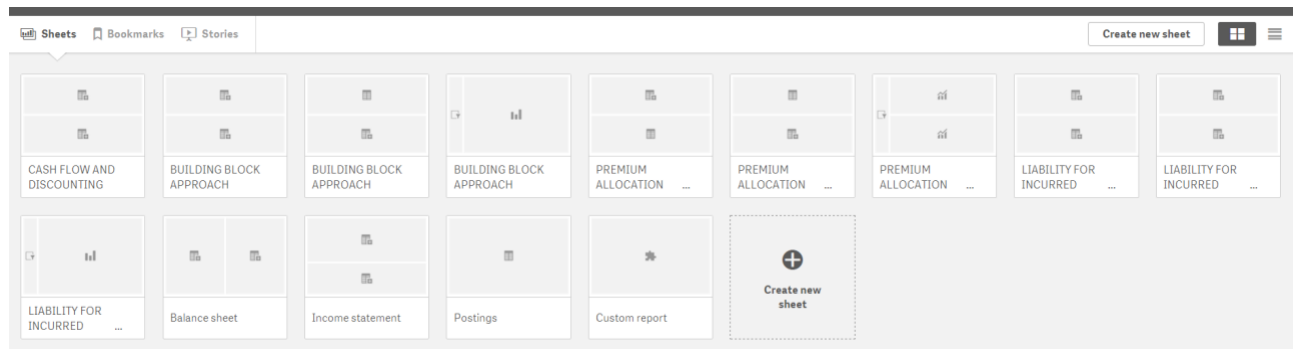


Figure 12 Example of predefined reports in Qlik

Reports may be drilled down by entity, Line of Business, Unit of Account, Products, etc.

Our company has experiences with other tools and may prepare such reports in other BI tools, like PowerBi or Microstrategy.

Contractual Service Margin										
	AM CSM PREV	AM CSM REC	AM CSM UNWIND	UNLOCKING RISK ADJ	UNLOCKING CF	PR COVER RATIO	AM CSM RELEASE	AM CSM DER	AM CSM	AM OCL
▼ 31/01/2016	0.00	4,173,447.48	0.00	0.00	0.00	0.33	0.00	0.00	4,173,447.48	0.00
▼ L_LPT1_USD	0.00	1,391,149.16	0.00	0.00	0.00	0.10	0.00	0.00	1,391,149.16	0.00
201601_202212	0.00	1,391,149.16	0.00	0.00	0.00	0.10	0.00	0.00	1,391,149.16	0.00
▶ L_LPT2_USD	0.00	1,391,149.16	0.00	0.00	0.00	0.10	0.00	0.00	1,391,149.16	0.00
▶ L_LPT3_USD	0.00	1,391,149.16	0.00	0.00	0.00	0.13	0.00	0.00	1,391,149.16	0.00
▶ 31/12/2016	4,173,447.48	0.00	208,672.38	0.00	0.00	0.60	438,211.98	0.00	3,943,907.88	0.00

Onerous contract liability									
	AM OCL REC	AM OCL PREV	AM OCL AMORTIZED	AM OCL RISK AMORTIZED	AM OCL UNWIND	AM OCL RISK UNWIND	AM OCL CHGRATE DELTA	AM OCL RISK CHGRATE DELTA	AM OCL DER
▼ 31/01/2016	0	0	0	0	0	0	0	0	0
▼ L_LPT1_USD	0	0	0	0	0	0	0	0	0
201601_202212	0	0	0	0	0	0	0	0	0
▶ L_LPT2_USD	0	0	0	0	0	0	0	0	0
▶ L_LPT3_USD	0	0	0	0	0	0	0	0	0
▶ 31/12/2016	0	0	0	0	0	0	0	0	0

Figure 13 Example of CSM report generated in Microstrategy