

AXIS™ Solution - Client Update

US GAAP Targeted Improvements

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Leading provider of data, software, research related professional services for financial risk management.

Today's Presenters

Moderator: **Trevor Howes** FSA, MAAA, FCIA
Director, Actuary

Speakers: **Rich Downey** FSA, MAAA, FLMI
Director, Sr. Lead Programmer & Actuary

Allyson Burch FSA, MAAA
Associate Director, Client Support Actuary

Mike Hantelman FSA, MAAA
Assistant Director, Client Support Actuary

Preamble

- » Please submit questions to the Webinar team using the question box in the Webinar window lower right corner
 - Time permitting we will address selected questions at the end of the webcast.
 - Following the webcast we will respond to all questions either directly or by posting additional FAQ pages to our website.
- » We will make this webinar's recording and presentation slides available on the AXIS website, in the US GAAP Microsite:

ggyaxis.com/news/US-GAAP/

Agenda

1. Introduction *Trevor Howes*
2. AXIS US GAAP Project Status *Rich Downey*
3. LDTI DAC Functionality *Allyson Burch*
4. LDTI MRB Functionality *Mike Hantelman*
5. Q&A
6. Conclusion and Wrap-up

1

Introduction

Proposed Delay in Effective Date of ASU 2018-12

- » In October 2019, the FASB confirmed the deferral of the ASU effective date
 - for larger publicly reporting entities until 2022
 - for all other entities until 2024.
- » FASB expects to issue a final Accounting Standards Update reflecting these decisions in mid-November, 2019.

2

AXIS US GAAP Project Status

AXIS Solution Overview

Key Software Requirements

- 1 Current period reporting balances and financial projections.
- 2 Current period reporting income.
- 3 Producing expanded disclosures.



A Comprehensive Actuarial Modeling Solution for US GAAP

AXIS Solution Strategy

Summarized Key Requirements	Enhancements to US GAAP Base Liability Modules	US GAAP Link Modules
<ul style="list-style-type: none"> » New cohort level calculations » Historic data input » Unlocking by cohort » New DAC, SIA, URL » Income components from revaluations » Components for expanded disclosures 	<ul style="list-style-type: none"> » Focus on component calculations required both for current period and for projections: <ul style="list-style-type: none"> – Changes to liability balance calculations to reflect ASU – Input data by cohort including locked in discount rate – Projection with revaluation, unlocking and balance amortization 	<ul style="list-style-type: none"> » Address new challenges of current period reporting <ul style="list-style-type: none"> – management of extensive cohort historic data – multiple runs with different data models, assumptions – post run assembly of results for income and disclosures » Improve governance and control » Improve efficiency and run time

AXIS Solution Delivery Approach

Base liability functionality:

- » Delivered as new features, under beta feature code
- » Pre LDTI and LDTI GAAP can be calculated in the same run, and there is separate reporting which should simplify the effort to produce results for comparative analysis

GAAP link modules functionality:

- » Available for beta testing for a limited period of time, and then available for formal licensing
- » Calculations are executed through a cell 'historical run' or new 'US GAAP current period reporting' batch.

User guide and sample dataset:

- » KB 2180
- » Updated regularly with new content

AXIS Solution Project Status

Roadmap progress

Contract Type	Policy Benefit Liability (PBL)	Deferred Acquisition Cost (DAC)	Deferred Profit Liability (DPL)	Market Risk Benefit (MRB)	Other Balances	Current Period Valuation (Link)	US GAAP Financials	Reinsurance
Regular Life Module								
Whole Life & Term	2019.16.02	2019.22.01	N/A	N/A		2020.02.01	2020.06.01	12/2019
Limited Pay	2019.16.02	2019.22.01	2019.27.01	N/A		2020.02.01 DPL: 12/2019	2020.06.01	12/2019
Par Products Module								
Whole Life & Term	2019.16.02	2019.22.01	N/A	N/A		2020.02.01	2020.06.01	12/2019
Limited Pay	2019.16.02	2019.22.01	2019.27.01	N/A		2020.02.01	2020.06.01	12/2019
Participating	2020.05.01	2019.22.01	N/A	N/A	TDL: Q1/2020	Q1/2020	Q1/2020	12/2019
Disability Module								
Whole Life & Term	2020.03.01	2020.03.01	N/A	N/A		Q1/2020	Q1/2020	Q1/2020
Limited Pay	2020.03.01	2020.03.01	2020.03.01	N/A		Q1/2020	Q1/2020	Q1/2020

AXIS Solution Project Status

Roadmap progress

Contract Type	Policy Benefit Liability (PBL)	Deferred Acquisition Cost (DAC)	Deferred Profit Liability (DPL)	Market Risk Benefit (MRB)	Other Balances	Current Period Valuation (Link)	US GAAP Financials	Reinsurance
Universal Life Module								
UL Type	2019.16.02	2019.22.01	N/A	N/A	URL: 2019.27.01 OAL: 2020.02.01	DAC:2020.03.01 OAL: 12/2019	Q1/2020	12/2019
Annuity Module								
UL type	2019.16.02	2019.22.01	N/A	2019.16.02 2019.28.01	SIA: 2020.01.01 OAL: Q1/2020	DAC: 2020.03.01 MRB: 2020.06.01 OAL: Q1/2020	12/2019	Q1/2020
Investment	12/2019	12/2019	N/A	N/A		Q1/2020	Q1/2019	Q1/2020
Limited Pay	12/2019	12/2019	12/2019	N/A		Q1/2020	Q1/2019	Q1/2020
Whole Life & Term	Q2/2020	Q2/2020	N/A	N/A		Q2/2020	Q2/2020	Q2/2020
Participating	12/2019	12/2019	N/A	N/A		Q1/2020	Q1/2019	Q1/2020

3

LDTI DAC Functionality

US GAAP LDTI Changes to DAC

- » Simplified, straight-line amortization
 - Grouped contracts amortized on constant basis, approximate straight-line
 - Amortization over policy inforce
- » Introduction of one-way Experience Adjustment
- » Elimination of interest accrual
- » Consistency across all contract types

DAC Calculation

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

- » Deferrable costs are actual costs for current period
- » Amortization = *Expected Amortization Base*_t * $\left[\frac{DAC_{t-1} + \text{Def. Costs}}{\sum \text{Future Amort. Base}} \right]$
- » Experience Adjustment Ratio = $\max\left(0, \frac{\text{Expected Amort Base} - \text{Actual Amort Base}}{\text{Expected Amort Base}}\right)$
- » Experience Adjustment = Ratio * (DAC_{t-1} + Deferrable Costs_t – Amortization)

DAC Calculation – Historical Inputs Needed

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

- » Prior period DAC
- » Actual - Deferrable costs
- » Expected - Amortization Base
- » Expected - Sum of Future Amortization Base
- » Expected - Base for Experience Adjustment
- » Actual - Base for Experience Adjustment

Amortization Base Options

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

- » Nominal face amount
- » Actual face amount
- » Annuity benefits
- » Pre-disability benefit amount
- » Policy counts
- » Premium deposits

US GAAP Cohort - [3] Limited Pay 2011

US GAAP Cohort

General settings

Contracts type: 4 - Limited pay

History

DAC/SIA/URL/TDL

Amortization basis: 1 - Nominal face amount

Experience adjustment basis: 0 - Sum of future amortization basis

Policy benefits liability

PBL dividend treatment: 0 - Use selected dividend options

PBL discount rate

Locked rate approach: 0 - Use locked rate table

	Flat	Mult	Table	Table section
Locked rate	6.0	100.0%	<input type="checkbox"/>	
Current rate	6.0	100.0%	<input type="checkbox"/>	

Deferred profit liability

DPL amortization basis: 0 - Nominal face amount

Amortization Base Methodology

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

» Expected Amortization Base = average Calendar Month inforce

Go to...	Pivot Date	Periodicity	Reports	Close all results						
Units (\$)	31Dec2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018				
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2011 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2012 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2013 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2014 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2015 - [Valuation Cohort Report - DAC]										
[-] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2016 - [Valuation Cohort Report - DAC]										
Whole Life 2016 - No of coverages	8.00	7.76	7.76	7.76	7.76	7.76				
- Amortization base		5,527,544.00	5,454,701.00	5,453,929.00	5,453,156.50	5,404,338.00				
- Amortization base month end	5,600,000.00	5,455,087.50	5,454,315.00	5,453,543.00	5,452,770.50	5,355,905.00				

Amortization Calculation Options

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

Amortization Calculation Options

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

» FASB ASU Approach

- K-Factor calculated as of BOP
- K-Factor applied to Expected Amortization Base
- Experience Adjustment for increase in terminations
 - › Current period amortization base
 - › Sum of future amortization base

Amortization Calculation Options

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

» FASB ASU Approach

- K-Factor calculated as of BOP
- K-Factor applied to Expected Amortization Base
- Experience Adjustment for increase in terminations
 - › Current period amortization base
 - › Sum of future amortization base

» Alternate Industry Approach

- K-Factor calculated as of EOP
- K-Factor applied to Expected Amortization Base
- Experience Adjustment = 0

Amortization Calculation Options

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

US GAAP Cohort - [3] Limited Pay 2011

US GAAP Cohort

General settings

Contracts type: 4 - Limited pay

History

DAC/SIA/URL/TDL

Amortization basis: 2 - Embedded in a recalculated amortization factor

Experience adjustment basis

Policy benefits liability

PBL dividend treatment: 0 - Use selected dividend options

PBL discount rate

Locked rate approach: 0 - Use locked rate table

	Flat	Mult	Table	Table section
Locked rate	6.0	100.0%	<input type="checkbox"/>	
Current rate	6.0	100.0%	<input type="checkbox"/>	

Deferred profit liability

DPL amortization basis: 0 - Nominal face amount

DAC Calculation – Historical Inputs Needed

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

- » Prior period DAC
- » Actual - Deferrable costs
- » Expected - Amortization Base
- » Expected - Sum of Future Amortization Base
- » Expected - Base for Experience Adjustment
- » Actual - Base for Experience Adjustment

AXIS Example – Historical Input: Base Module

Valuation Date = 12/31/17, Monthly Reporting

DataLink Table [101150] US GAAP History - Whole life and term

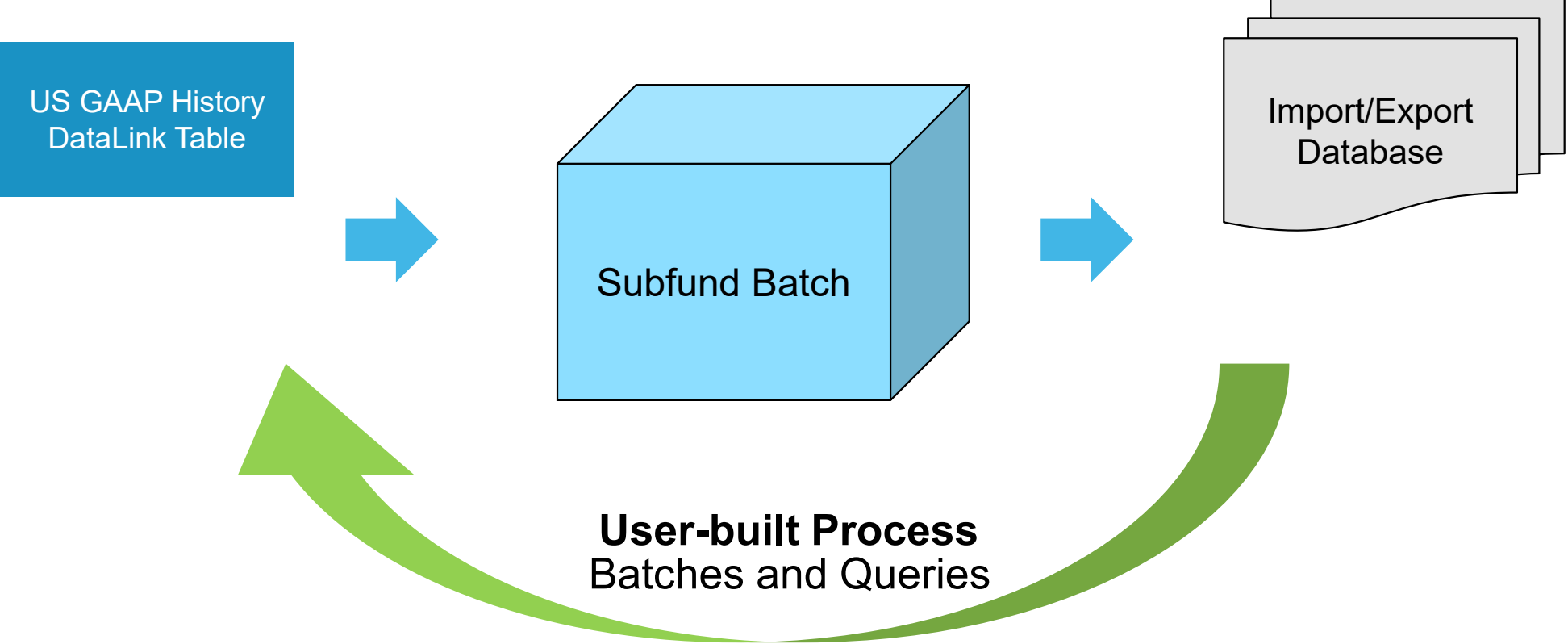
Go to column: Actual Basis For Experience Adjustment (EOP)

	Cohort Name[-]	Data Year[-]	Data Month[-]	Gross DAC Balance (EOP)	Deferrable Costs	Expected Amortization Base (EOP)	Sum of Future Amort Base (EOP)	Expected Basis For Experience Adjustment (EOP)	Actual Basis For Experience Adjustment (EOP)
13	Whole Life 2016	2017	12	0.00	500.00	0.00	0.00	0.00	828200700.00
14	Whole Life 2016	2017	11	8000.00	0.00	5600000.00	833800700.00	828200700.00	0.00
15	Whole Life 2016	2017	10	0.00	0.00	0.00	0.00	0.00	0.00
16	Whole Life 2016	2017	9	0.00	0.00	0.00	0.00	0.00	0.00
17	Whole Life 2016	2017	8	0.00	0.00	0.00	0.00	0.00	0.00
18	Whole Life 2016	2017	7	0.00	0.00	0.00	0.00	0.00	0.00
19	Whole Life 2016	2017	6	0.00	0.00	0.00	0.00	0.00	0.00
20	Whole Life 2016	2017	5	0.00	0.00	0.00	0.00	0.00	0.00
21	Whole Life 2016	2017	4	0.00	0.00	0.00	0.00	0.00	0.00
22	Whole Life 2016	2017	3	0.00	0.00	0.00	0.00	0.00	0.00

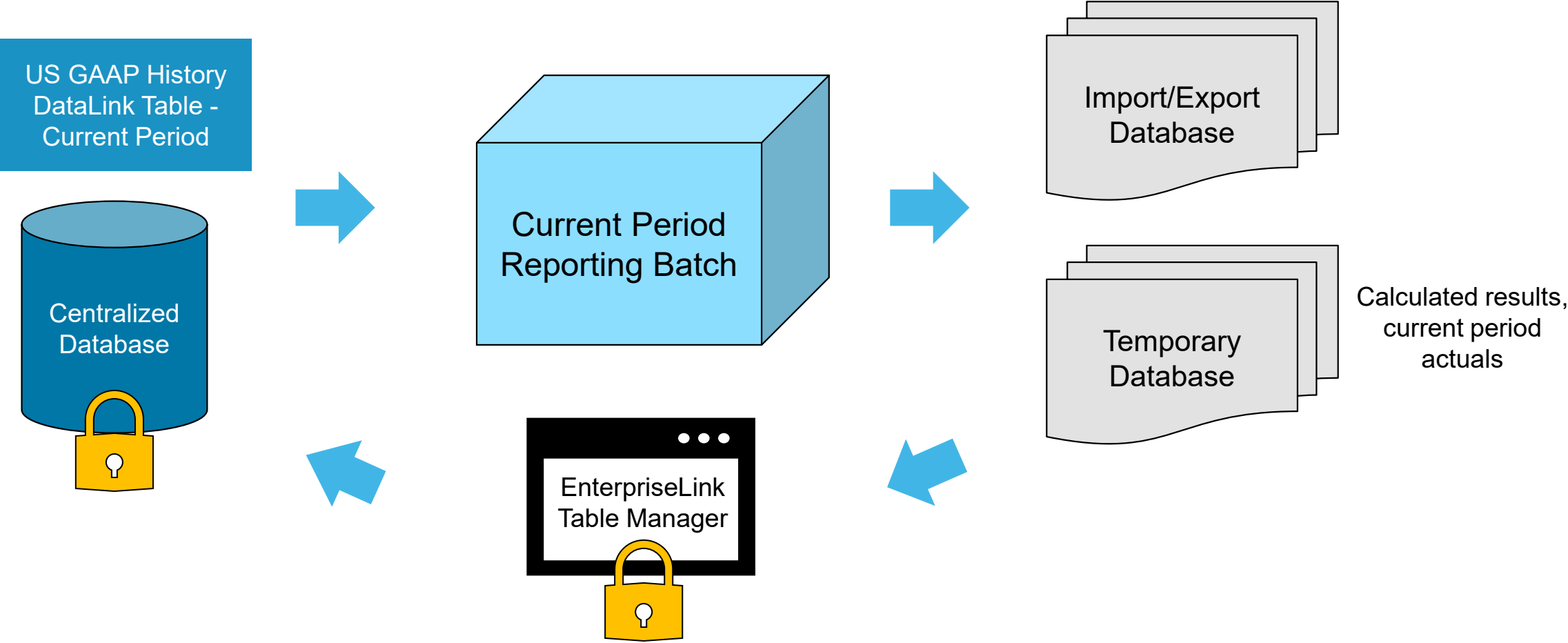
Record 13

Print... Export... Font... Best Fit Close

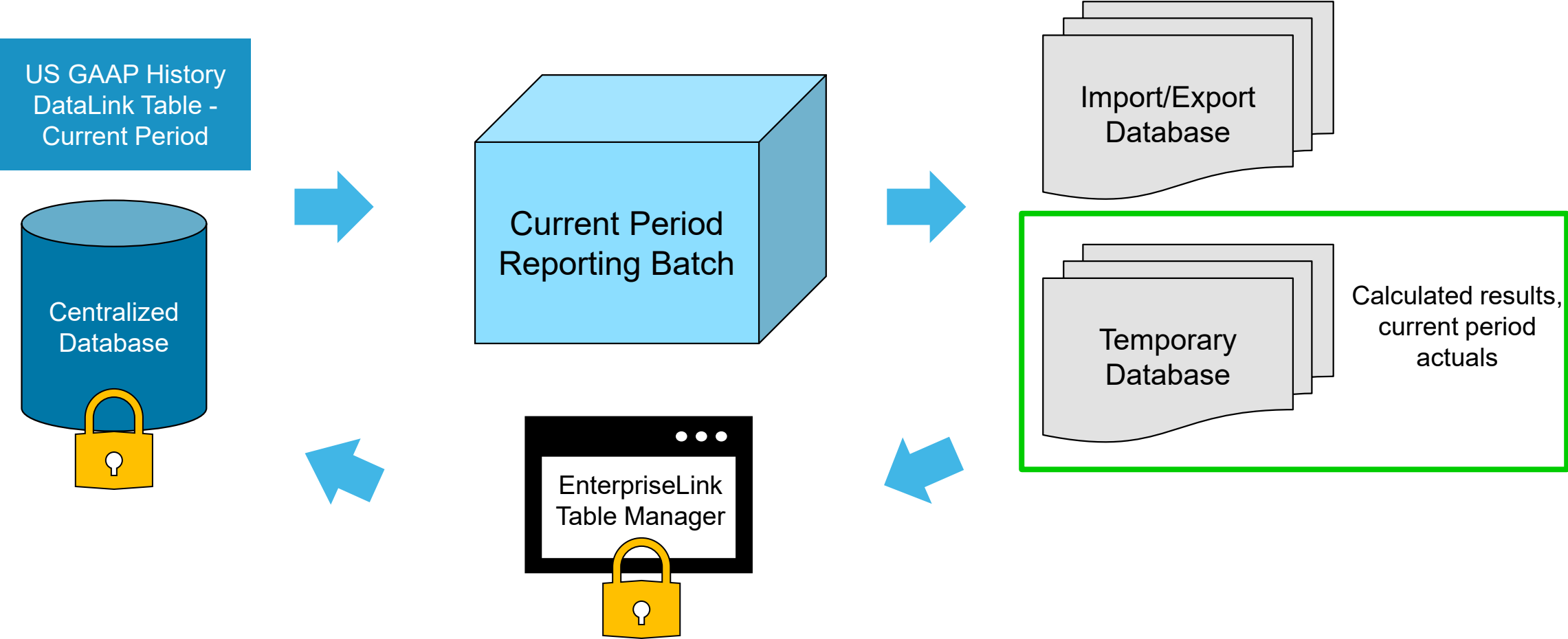
Base Module – Historical Data Process



US GAAP Link – Historical Data Process



US GAAP Link – Historical Data Process



DAC Calculation – Historical Inputs Needed

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

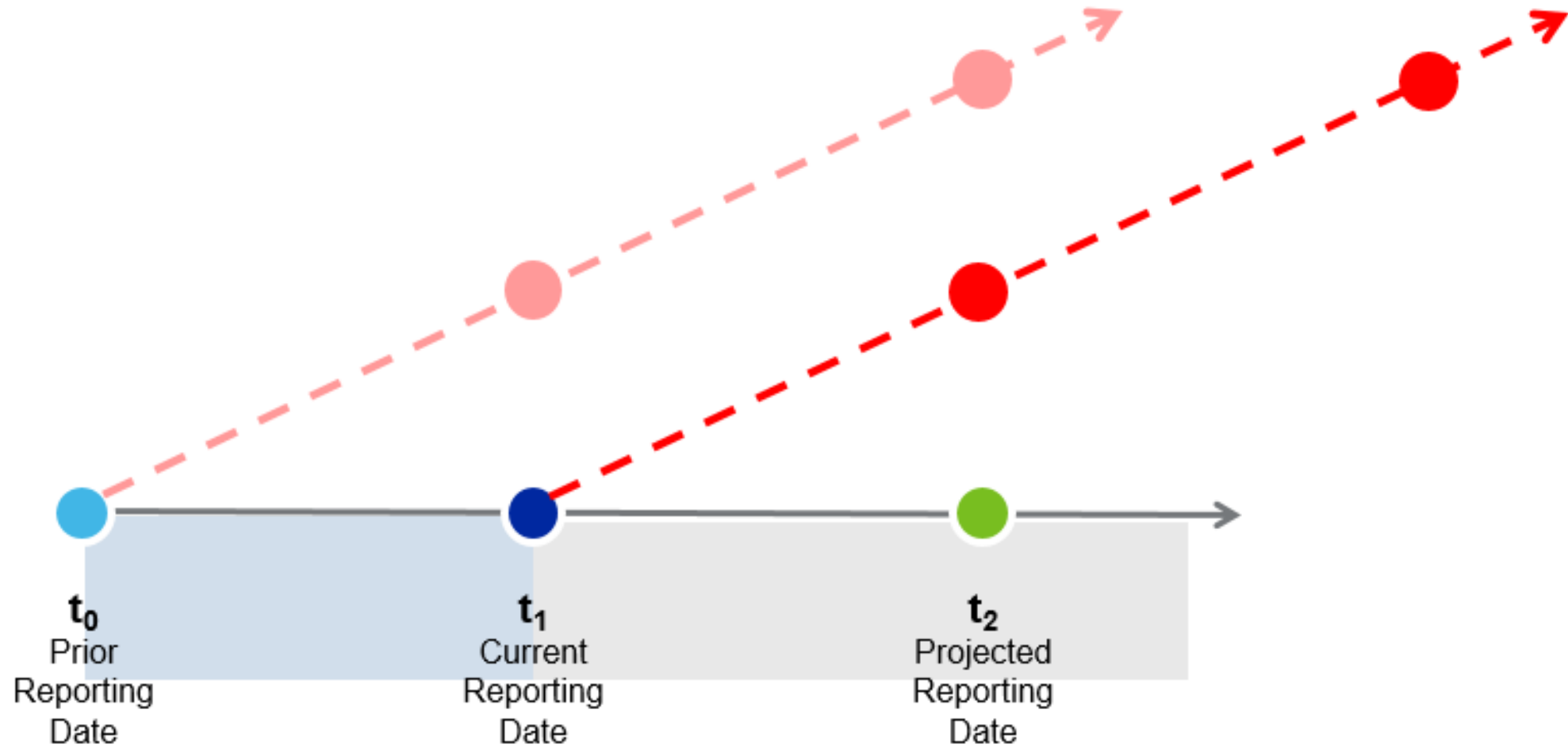
- » Prior period DAC
- » Actual - Deferrable costs
- » Expected - Amortization Base
- » Expected - Sum of Future Amortization Base
- » Expected - Base for Experience Adjustment
- » Actual - Base for Experience Adjustment

DAC Calculation – Historical Inputs Needed

$$DAC_t = DAC_{t-1} + \text{Deferrable Costs}_t - \text{Amortization} - \text{Experience Adjustment}$$

- » Prior period DAC
- » Actual - Deferrable costs
- » Expected - Amortization Base
- » Expected - Sum of Future Amortization Base
- » Expected - Base for Experience Adjustment
- » Actual - Base for Experience Adjustment

US GAAP Link – Prior Period Projections



US GAAP Link – Prior Period Projections

Cell - [46] 30 Year F SM

Assumption Navigation

- Main
 - Currency
 - Processing
 - Imported Projections
 - Product Features
 - Product Features - Policy Loans
 - Multiple Reinsurance
 - Single Reinsurance
 - General Assumptions
 - Book Profit Financials
 - NAIC Financials
 - US GAAP Financials
 - US GAAP ASU 2018-12
 - IFRS 17
 - Alternative Financials

US GAAP ASU 2018-12

General settings

Contracts type: 0 - Whole life and term

US GAAP cohort table:

Policy benefit and deferred profit liability

Current assumptions: 8 - GAAP Best Estimate

Prior assumptions: 9 - GAAP Best Estimate Prior

Alternative Financials

Do not produce alternative financials

AXIS Example – Output: Valuation Cohort Report

Valuation Date = 12/31/17, Monthly Reporting

Go to...	Pivot Date	Periodicity	Reports	Close all results						
Units (\$)	31Dec2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018				
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2011 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2012 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2013 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2014 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2015 - [Valuation Cohort Report - DAC]										
[-] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2016 - [Valuation Cohort Report - DAC]										
Whole Life 2016 - No of coverages	8.00	7.76	7.76	7.76	7.76	7.63				
- Amortization base		5,527,544.00	5,454,701.00	5,453,929.00	5,453,156.50	5,404,338.00				
- Amortization base month end	5,600,000.00	5,455,087.50	5,454,315.00	5,453,543.00	5,452,770.50	5,355,905.00				
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2009 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2010 - [Valuation Cohort Report - DAC]										
[+] US GAAP ASU 2018-12 Valuation Cohort - Whole Life 2017 - [Valuation Cohort Report - DAC]										

AXIS Example – Output: Pricing Cohort Report

Valuation Date = 12/31/17, Monthly Reporting

Units (\$)	31Dec2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	Ma
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2011 - [DAC Details]						
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2012 - [DAC Details]						
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2013 - [DAC Details]						
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2014 - [DAC Details]						
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2015 - [DAC Details]						
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2016 - [DAC Details]						
Whole Life 2016 - DAC/SIA/URL Details Report - Deferrable costs						
- DAC/SIA/URL Details Report - Sum of future amort base	828,200,704.00	822,651,072.00	817,178,176.00	811,706,240.00	806,235,392.00	800,809
- DAC/SIA/URL Details Report - Expected sum of future amort base		822,673,088.00	817,196,544.00	811,724,480.00	806,253,504.00	800,831
- DAC/SIA/URL Details Report - Expected amortization base		5,527,564.00	5,454,537.00	5,453,659.50	5,452,746.00	5,403
- DAC/SIA/URL Details Report - Expected basis for experience adj	828,200,704.00	822,673,088.00	817,196,544.00	811,724,480.00	806,253,504.00	800,831
- DAC/SIA/URL Details Report - Actual basis for experience adj	828,200,704.00	822,651,072.00	817,178,176.00	811,706,240.00	806,235,392.00	800,809
- DAC/SIA/URL Details Report - Gross DAC amort factor	0.0010%	0.0010%	0.0010%	0.0010%	0.0010%	0
- DAC/SIA/URL Details Report - Gross DAC amortization		56.35	55.61	55.60	55.59	
- DAC/SIA/URL Details Report - Gross DAC experience adjustment		0.22	0.19	0.19	0.18	
- DAC/SIA/URL Details Report - Gross DAC asset	8,442.91	8,386.34	8,330.54	8,274.76	8,218.99	8
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2009 - [DAC Details]						
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2010 - [DAC Details]						
[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2017 - [DAC Details]						

Rollforward Disclosure Reports

Valuation Date = 12/31/17, Monthly Reporting

Go to...
Periodicity
Reports
Close all results

Units (\$)	31Dec2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018
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[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2011 - [DAC/URL/SIA Disclosure Report]

[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2012 - [DAC/URL/SIA Disclosure Report]

[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2013 - [DAC/URL/SIA Disclosure Report]

[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2014 - [DAC/URL/SIA Disclosure Report]

[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2015 - [DAC/URL/SIA Disclosure Report]

[-] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2016 - [DAC/URL/SIA Disclosure Report]

Whole Life 2016	DAC Period Start		8,442.91	8,386.34			
	+ Deferred Costs						
	- DAC Amortization		56.35	55.6			
	- DAC Experience Adjustment		0.22	0.1			
	DAC Period End	8,442.91	8,386.34	8,330.5			
	URL Period Start						
	SIA Period Start						

[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2009 - [DAC/URL/SIA Disclosure Report]

[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2010 - [DAC/URL/SIA Disclosure Report]

[+] US GAAP ASU 2018-12 Pricing Cohort - Whole Life 2017 - [DAC/URL/SIA Disclosure Report]

Select Report
- □ ×

Please select an item

Id	Name
	-1105 US GAAP PBL Roll Forward
	-1107 DAC/URL/SIA Disclosure Report
	3 DAC Details

Select
Cancel

Upcoming DAC-Related Jobs

- » DAC/URL/SIA for New Business
 - Captures appropriate amortization base for new issues
 - Targeted 4Q 2019
- » Seriatim DAC/URL/SIA
 - Calculates balances on a seriatim basis
 - Targeted 1Q 2020

4

LDTI MRB Functionality

US GAAP LDTI Market Risk Benefits

- » Legacy GAAP treatment of guarantees
 - Fair value model
 - SOP 03-1
- » New benefit classification established
 - A contract or contract feature that both provides protection to the contract holder from other-than-nominal capital market risk and exposes the insurance entity to other-than-nominal capital market risk
 - Shall be measured at fair value
 - Generally expands previous fair value calculation to include all GMxBs

MRB Fair Value Calculation

Non-option valuation approach

- » $MRB = PV(Benefits) - PV(Charges) * Attributable\ Fee\ Ratio$
- » $Attributable\ Fee\ Ratio = \frac{PV(Benefits)}{PV(Charges)}$
 - Calculated at inception
 - Supplied through DataLink for contracts not issued in valuation month

MRB in the Cell

US GAAP ASU 2018-12

- » Current vs prior period
- » OCI attribution
 - Separates fair value changes attributable to a change in instrument-specific credit risk
- » Locked-in spread for inforce
 - Defines the credit spread to be used for OCI attribution

US GAAP ASU 2018-12

General settings

Contracts type 0 - Universal life-type

US GAAP cohort table

DAC, SIA, and URL

Current assumptions 9 - GAAP Best Estimate

Prior assumptions 9 - GAAP Best Estimate

Sales Inducements identified by inputs in US GAAP section of cell

Policy benefit liability

Benefit liability calculation 0 - Use account value as benefit liability

Market risk benefit liability

Market risk benefit calculation 1 - Calculate the MRB based on specified settings

Scenarios 0 - Use risk neutral scenarios in Asset Pricing Model

Current period assumptions 10 - GAAP MRB Best Estimate

Prior period assumptions 7 - Fifth Reserve Assumptions

Base for interpolation 0 - Fund value

Method for interpolation 0 - Difference from interpolation base

OCI attribution 1 - Recalculate MRB using locked-in spread, attribute difference to AOCI

Flat Mult Table

Locked-in spread for inforce 0.0 100.0% Flat 1.25%

MRB Calculation Options

OCI Attribution and Locked-in Spread

Table [3] - [Base Rate + Credit Spread]

Value: 0
Col 1: Additive adjust to the spread (%)
Row 1: Cash rate with spread

Row	C1	C2	C3: ScenarioMarket	C4: ScenarioMarket
Cash rate with spread		100.00	Credit Spread	Interest

This table refers to average cash rate in scenario


Section: Cash rate with spread Shape: Row X 4 Columns

OCI attribution	1 - Recalculate MRB using locked-in spread, attribute difference to AOCI		
	Flat	Mult	Table
Locked-in spread for inforce	0.0	100.0%	Flat 1.25%
	Deterministic annual spread %		

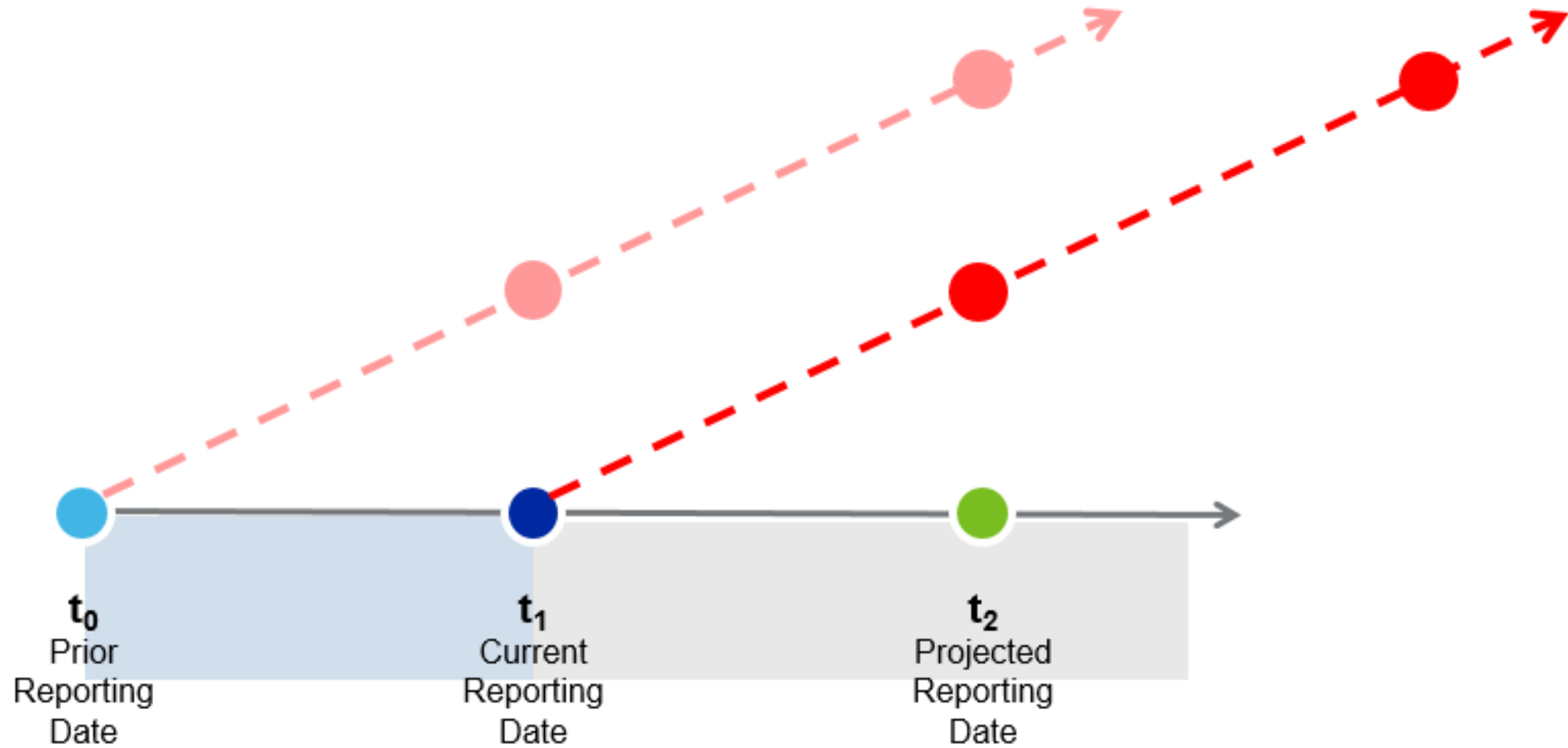
US GAAP Link – Multiple Projection Functionality

- » MRB attribution calculated using a single batch process
- » Policies are loaded into memory one time
- » RN scenario sets available for reuse with multiple attribution runs, resulting in significant runtime savings
- » Appropriate model inputs are coordinated automatically within the Current Period Reporting batch
- » Impact from variances is captured automatically

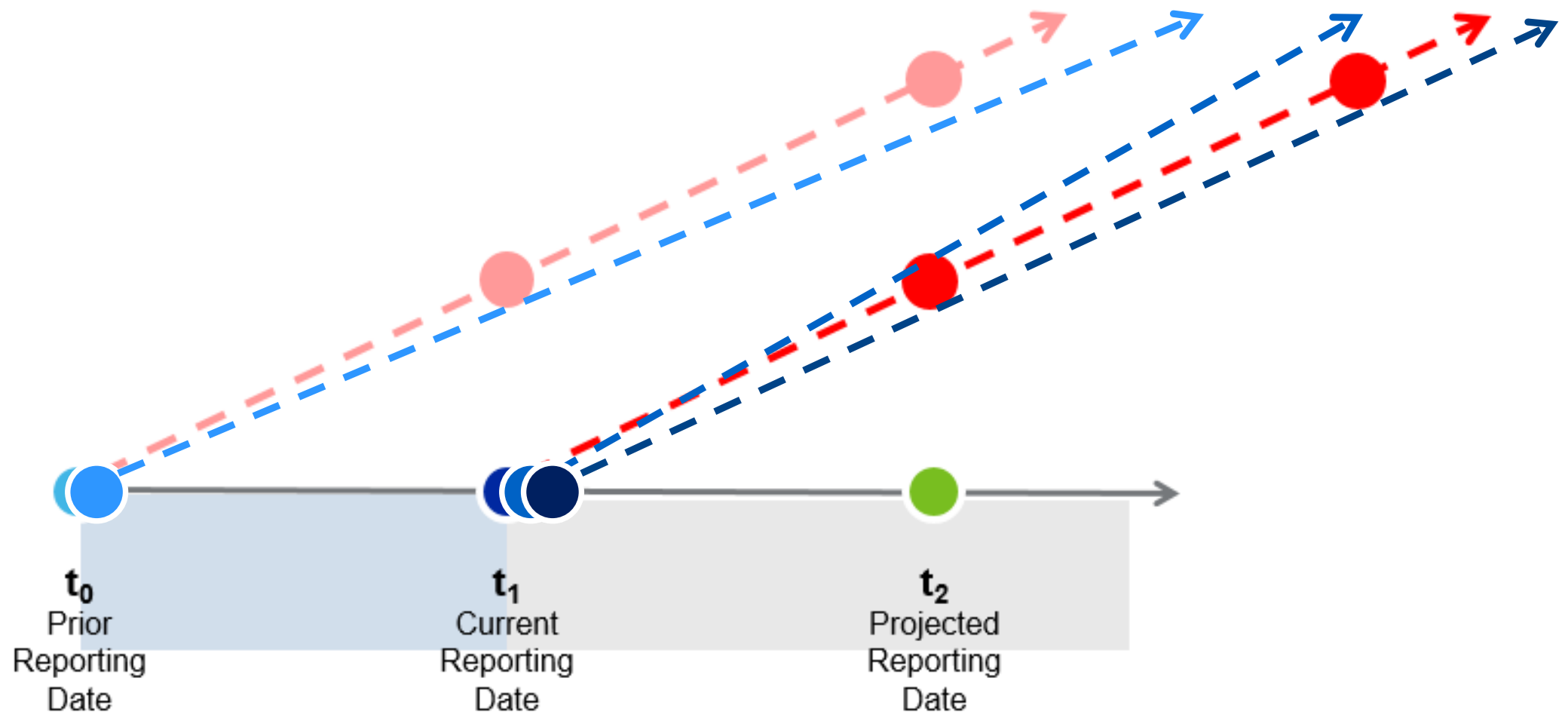
US GAAP Link – Multiple Projection Functionality

Market risk benefit liability	
Market risk benefit calculation	1 - Calculate the MRB based on specified settings
Scenarios	0 - Use risk neutral scenarios in Asset Pricing Model
Current period assumptions	10 - GAAP MRB Best Estimate
Prior period assumptions	7 - Fifth Reserve Assumptions
Base for interpolation	0 - Fund value
Method for interpolation	0 - Difference from interpolation base
OCI attribution	1 - Recalculate MRB using locked-in spread, attribute difference to AOCI
	Flat Mult Table
Locked-in spread for inforce	0.0 100.0%  Flat 1.25% <input type="text" value="Deterministic annual spread %"/>

US GAAP Link – Multiple Projection Functionality



US GAAP Link – Multiple Projection Functionality



US GAAP Link – MRB Attribution Impacts

Disclosure Requirements

- » Changes in Instrument-Specific Credit Risk
- » Updates to Future Policyholder Behavior
- » Issuance of New Business
- » Changes in Interest Rates
- » Changes in Equity Markets

US GAAP Link Output: MRB Roll Forward

- » US GAAP Link captures output from each projection run
- » Results are assembled in prescribed order
- » Roll forward is comparable to example provided in standard (944-40-55-29G)

Units (\$)	Jan 2018
[-] Generic Category Outputs - [US GAAP MRB Roll Forward]	
PS - MRB	3,674.22
PS - MRB at Locked DR	3,224.27
PS - Impact from Updates to PH Bhv Issuances	1,635.16
Expected Attributed Fees	91.99
Expected Benefit Payments	-0.00
Interest Accrual	13.87
Adjustment	-29.06
PE - Expected MRB at Locked DR	4,936.23
PE - Impact from var in Eq Mkt	-19.33
PE - Impact from var in PH Bhv	233.26
PE - Impact from var in Oth PH Bhv	
PE - Fund Modeling True-Up	-121.19
PE - Impact from RN Assumptions	
PE - Impact from Gen Scen Input	-4,706.59
PE - MRB at Locked DR	322.39
PE - Impact from Credit Risk Update	284.35
PE - MRB	606.74

Base Module Output: Pricing Cohort Report

Units (\$)	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018
[-] US GAAP ASU 2018-12 Pricing Cohort - VAGLWB-0001 - [Default US GAAP ASU 2018-12 Pricing Cohort report]					
VAGLWB-0001 - Gross market risk benefit liability	9,925.14	8,575.51	7,226.84	5,879.11	4,532.34
- Gross accumulated OCI	-8,319.69	-7,836.76	-7,354.18	-6,871.93	-6,390.02
[+] Annuity Expense Charge - VAGLWB-0001 - [Annuity Expense Charge Report]					
[+] DAC/SIA/URL Details - [Default DAC/SIA/URL Details report]					
[+] Policy Benefits Liability Details - Period End - [Default Policy Benefits Liability Details report]					
[+] Other Additional Liability Details - Period End - [Default Other Additional Liability Details report]					
[-] MRB Liability Details - [Default MRB Liability Details report]					
PV gross benefits under fair value	27,220.88				
PV gross charges under fair value	18,799.72				
Gross MRB liability	9,925.14	8,575.51	7,226.84	5,879.11	4,532.34
UL-type GAAP Income Components - [Default UL-type GAAP Income Components report]					
[+] Fund Movement - Annuity Seg Fund/ Sep Acct - [Default Fund Movement report]					
[+] Fund Movement - Annuity fund - [Default Fund Movement report]					
CoR Details - Period End - [Default CoR Details report]					

Base Module Output: Reconciliation for Scenario Cashflow Projection

Policy Period	Guaranteed Benefits				PV Benefits	Guarantee Charges			
	Withdrawal Benefits	Accumulation Benefits	Income Benefits	Death Benefits		Guarantee Charges	Weighted Guarantee Charges	PV Guaranteed Charges	ZOC Factor
M183					0.00	132.37		18,436.36	
M184					0.00			18,436.36	
M185					0.00			18,436.36	
M186					0.00	131.85		18,617.50	
M187					0.00			18,617.50	
M188					0.00			18,617.50	
M189					0.00	131.32		18,799.72	
M190					0.00			18,799.72	
M191					0.00			18,799.72	
M192	1,142.22				1,099.83			18,799.72	
M193					1,099.83			18,799.72	
M194					1,099.83			18,799.72	

Upcoming MRB-Related Jobs

- » Host Adjustment
 - Attributable fee ratio > 100%
 - Offsetting asset amortization schedule
- » Locked-in Spread by Issue Month
- » Enhanced Granularity in Disclosures
 - Variance in equity markets vs. variance in bond markets
 - Impact of decrements vs. impact of illustration

5

Questions and
Answers

6

Conclusion & Wrap-up

Thank You

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