

GAAP LONG DURATION TARGETED IMPROVEMENTS II

ACHS FALL MEETING
NOVEMBER 19, 2019

Yuan Tao, FSA, MAAA, CFA

Agenda

1 Overview

2 Data impacts

Section 1 | Overview

What's changing?

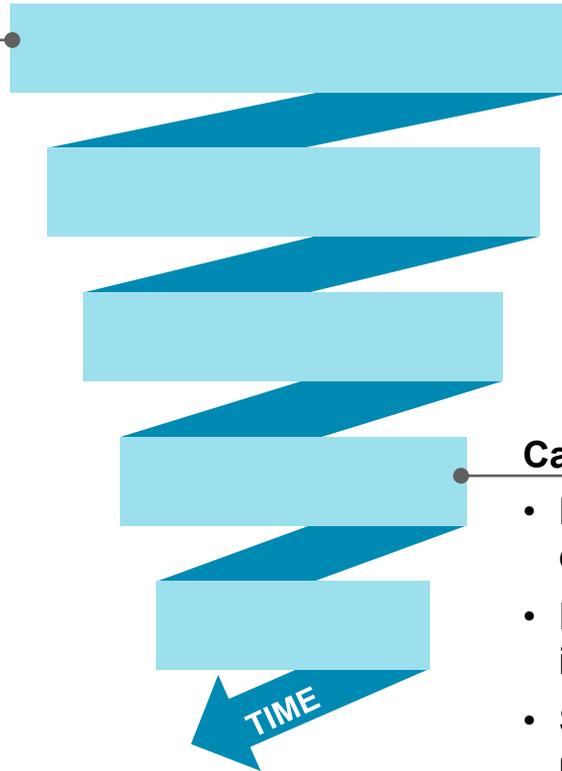
	Simplified DAC Amortization	Traditional liabilities requires updated assumptions and revised disc rate	Market risk Benefits at fair value	Enhanced disclosures
Term, WL, and LTC/DI	✓	✓	✗	✓
SPIA and Payout	✓	✓	✗	✓
FIA, VA	✓	✗	✓	✓
UL, DA, IUL, and VUL	✓	✗	✗	✓
Participating ¹	✓	✗	✗	✓
Short-duration	✗	✗	✗	✗

1. Provision for terminal dividend changes, as well.

Capitalized costs now recognized using “straight-line amortization”

Amortization

- Amortized over expected term without interest
- Performed at individual contract level or may be grouped as long as it approximates individual
- Negative experience variance must be recognized immediately, positive are optional
- Assumption revisions recognized prospectively
- Shadow DAC no longer applies
- No longer subjected to impairment testing



Capitalization

- No change to definition of what's capitalized
- Recognized for capitalization only after incurred
- Sales inducements and unearned revenue treated similarly except in scope for impairment testing

Grouped approach most popular and is subject to company and auditor discretion

Liability changes for traditional and limited payment contracts

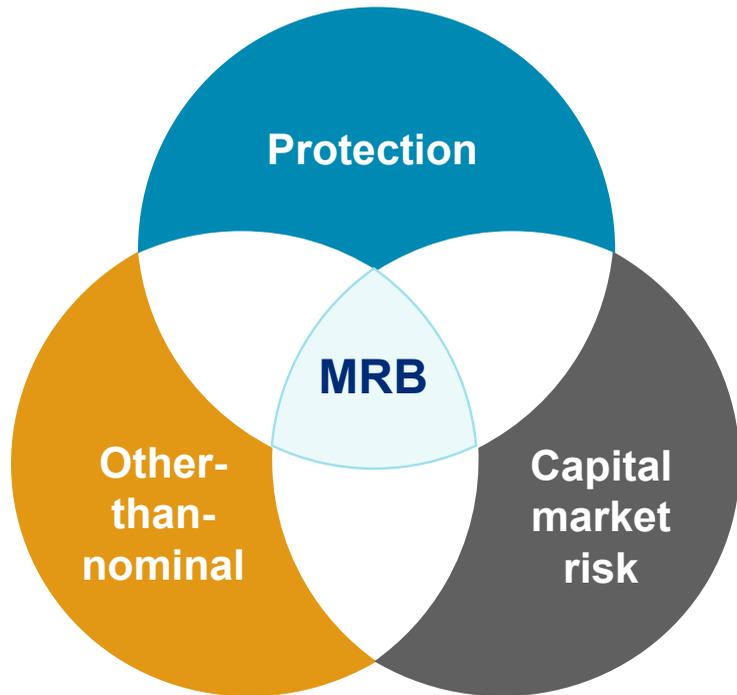
		Financial statement impact	Targeted improvements	Prior standards
1	Assumptions	Earnings as re-measurement	<ul style="list-style-type: none"> • Best estimate assumptions with no PADs • At least annual review of assumptions with unlocking 	<ul style="list-style-type: none"> • Original assumptions with PADs locked-in at issue
2	Discount rate	Other Comprehensive Income	<ul style="list-style-type: none"> • Upper-medium grade fixed-income instrument yields updated quarterly • Original discount rate part of all future calculations 	<ul style="list-style-type: none"> • Similar to other assumptions, locked-in at issue • Based on company's earned rate
3	Premium sufficiency	Earnings	<ul style="list-style-type: none"> • Excludes maintenance expenses • Original rate discounting • Sufficiency test at cohort level through capping net premium ratio at 100% 	<ul style="list-style-type: none"> • Includes maintenance expenses • Impairment testing performed at the aggregate block level including DAC

Traditional liabilities will be measured on a more current basis to reflect performance

Market risk benefit (MRB)

Definition and scope

“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”



- **Protection:** refers to the transfer of a loss in, or shortfall of the contract holder’s account balance from the contract holder to the insurance entity, with such transfer exposing the insurance entity to capital market risk that would otherwise have been borne by the contract holder
- **Nominal risk:** is a risk of insignificant amount or remote probability of occurring
- **Capital market risk:** includes equity, interest rate and foreign exchange risk
- **In scope:** GMxB’s on VA and FIA, annuity purchase guarantee ¹
- **Out of scope:** FIA indexed benefits, MGIR on general account, VUL DB, UL NLG

1. Assume other-than-nominal capital market risk. Analysis and conclusions reached will vary depending on contract features

Financials will become significantly more transparent



Quarterly disclosures

- Disaggregated year-to-date roll-forward of liability for future policy benefits, policyholder account balances, MRB's and DAC, reconciled to balance sheet
- Actual experience during the period compared to expected
- Amount of revenue and interest recognized
- Related reinsurance recoverable
- Weighted average liability duration
- Weighted average interest rate and method used



Additional annual disclosures

- Nature of deferred acquisition costs, information about inputs, assumptions, judgement, and methods used to determine amortization, and changes in those items
- Information about significant inputs, assumptions, judgement, and methods used in measuring traditional liability and MRB, changes to these items during the period, and the effect of those changes on measurement



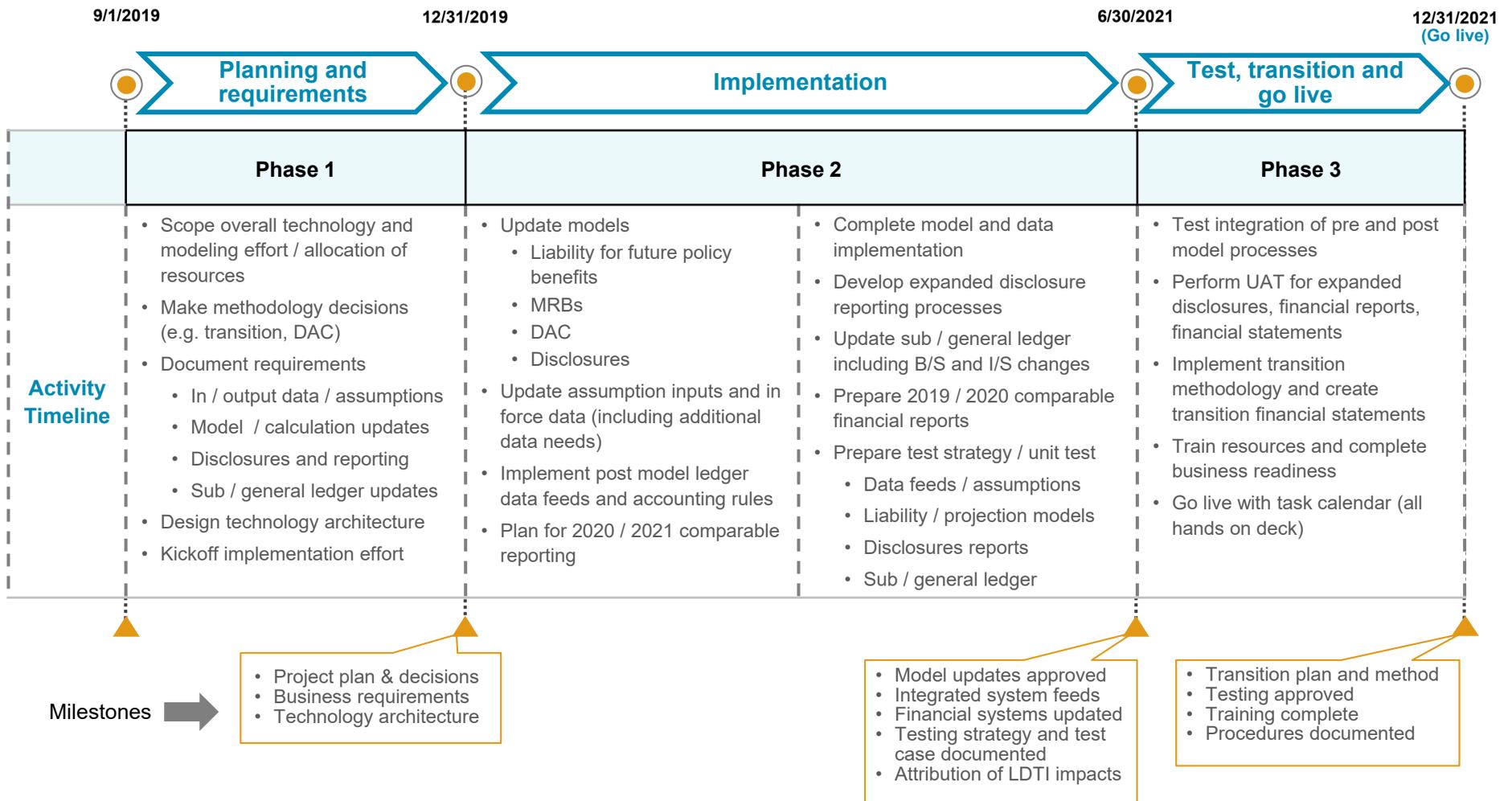
Other reporting considerations

- Liability remeasurement is a new line in the income statement, separate from disclosures in the notes
- Market risk benefits presented separately on the balance sheet and income statement with instrument specific credit risk below the line
- Qualitative and quantitative information about transition adjustments to retained earnings and AOCI, net premiums exceeding gross premiums, and premium deficiencies

Expanded and auditable actuarial inputs to financials require stronger infrastructure

Illustrative LDTI implementation timeline¹

Implementing changes to comply with ASU 2018-12 will be a multi-year process that will require significant planning, development, and testing

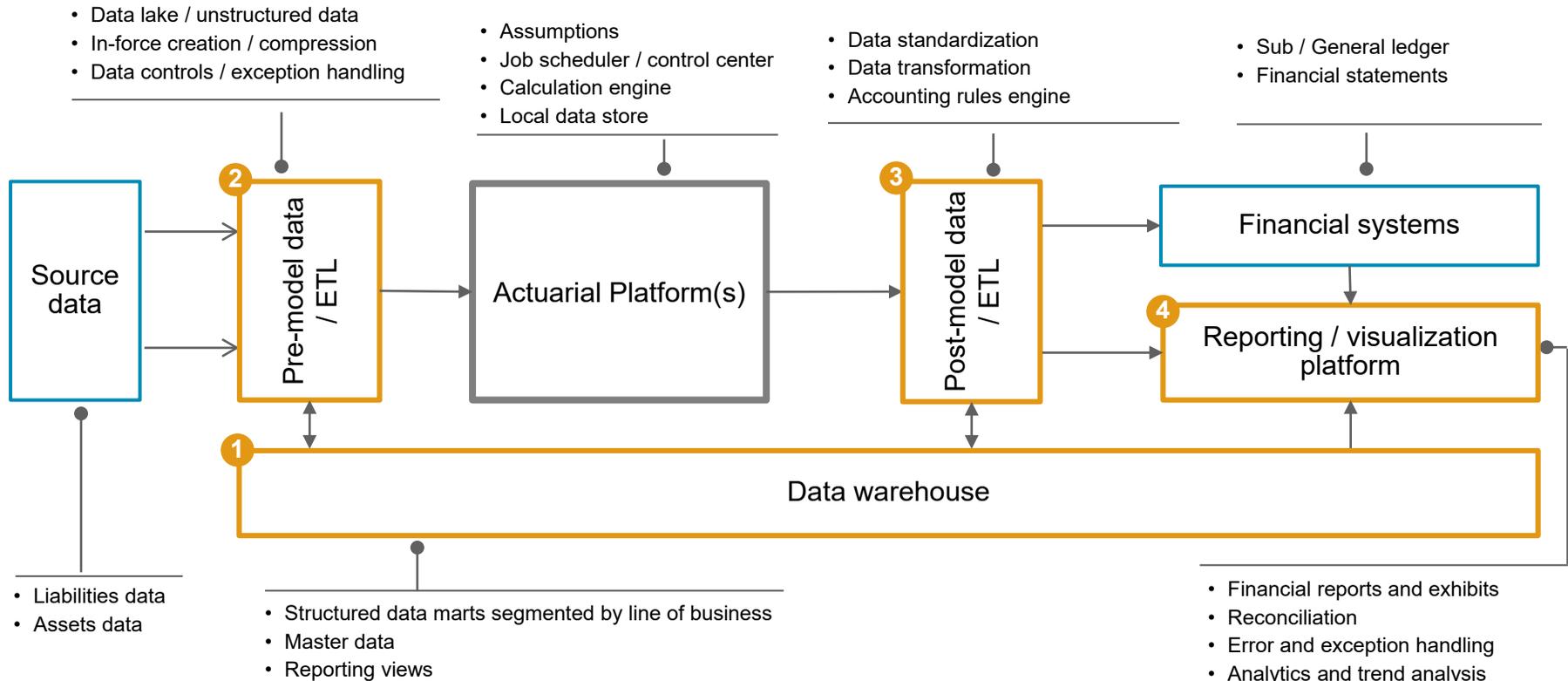


1. Illustrative timeline assumes January 1st, 2022 effective date for SEC filers

Section 2 | Data impacts

A modern end to end architecture

Update to the data infrastructure (in orange) has been cited as one of the primary challenges in implementing LDTI



Key →



Deferred acquisition costs (“DAC”) implications

Simplification of the DAC measurement may provide an opportunity to move DAC calculations and reporting processes to more controlled platforms

Changes needed for the new accounting standards

DAC amortization methodology is simplified

- Update data feeds, Input ETL and data warehouse to include:
 - Inforce amount / NAR (constant level basis)
 - Terminations / persistency
 - Incurred DAC expenses
- Update output ETL processes to exclude interest, shadow DAC
- Move DAC models from excel / access databases to a more controlled IT environment

Reporting and disclosures change due to new methodology

- At transition, update subledger / ledger to reverse Shadow DAC from OCI and record as DAC adjustment
- Update accounting rules engine and output ETL processes to reflect changes for
 - Experience adjustment and incurred expenses
 - Exclusion of interest and shadow DAC

Level of build required			
Data warehouse	Pre model data	Post model data	Reporting tools
			
			

Impact →  None  Low  Medium  High

Traditional liabilities implications

Deriving NPR and unlocking of assumptions will require significant build to Input ETL and experience analysis processes

Changes needed for the new accounting standards

Liability measurement includes actual cashflows

- Increased data volumes with retention of actual historical cashflows (to derive NPR)
- Update ETL processes to fetch actual cashflows from admin or GL
- Segregating input data by issue year cohorts
- Other updates to assumption tables and input data feeds (e.g. separating maintenance expenses from claim costs)

Assumption unlock

- Storing two discount rates (at inception and current)
- Update Input ETL processes to pull in both discount rates each valuation period
- Automated or more robust experience analysis and assumption update process

Changes in interest rates are reported through OCI

- At transition, update subledger / ledger to remove OCI attributed to shadow reserves
- Update rules engine to capture difference in liabilities (current vs locked in) in OCI

Level of build required			
Data warehouse	Pre model data	Post model data	Reporting tools

Impact → None Low Medium High

Market risk benefit (“MRB”) implications

Implementing MRBs will require significant undertaking on data warehouse and rules engine applications

Changes needed for the new accounting standards

Scope of guarantees at fair value increases

- Update ESG applications and calibration processes for fair value (RN vs RW)
- Update ETL processes with no cohort level requirement
- Bundling of multiple MRBs in a contract may require additional handling

Inception-to-date restatement is required¹

- Gather data from disparate set of legacy applications and store in new databases
- Process higher volumes of data in ETL processes
- Potentially move data infrastructure to cloud solutions to increase speed / reduce cost

Changes to instrument specific credit risk are reported through AOCI

- Classify MRBs in post ETL processes, data warehouse and reference data sets
- Update accounting rules engine for:
 - Instrument specific credit risk flowing through OCI
 - Derecognition of MRBs / OCI reversals on annuitization
- Update financial system hierarchies and reference data for B/S and I/S presentation

Level of build required

Data warehouse	Pre model data	Post model data	Reporting tools

Impact → None Low Medium High

1. If data is available

Disclosure implications

New disclosure requirements have a substantial cross-system impact and is an opportunity to introduce or improve workflow and governance structures

Changes needed for the new accounting standards

Disaggregated rollforwards are required

- Inputs: Data feeds will require updates to introduce granularity
- Outputs: ETL, reference data and rule engine updates for additional granularity

Several other disclosures are introduced

- Add and update data warehouse, master data / reference datasets and ETL processes to support new quantitative & qualitative disclosures
- Automating qualitative disclosures may require special handling
- Design additional reports and update / rationalize existing ones on BI platform

Level of build required			
Data warehouse	Pre model data	Post model data	Reporting tools

Impact → None Low Medium High



NASSAU RE

GAAP Long Duration Targeted Improvements II

Marianne LaSala, AVP
November 19, 2019

For Financial Professional Use Only – Not Intended for Use with the General Public
Nassau Re® is a registered trademark by Nassau Reinsurance LLC. ©2019 Nassau Re

Agenda

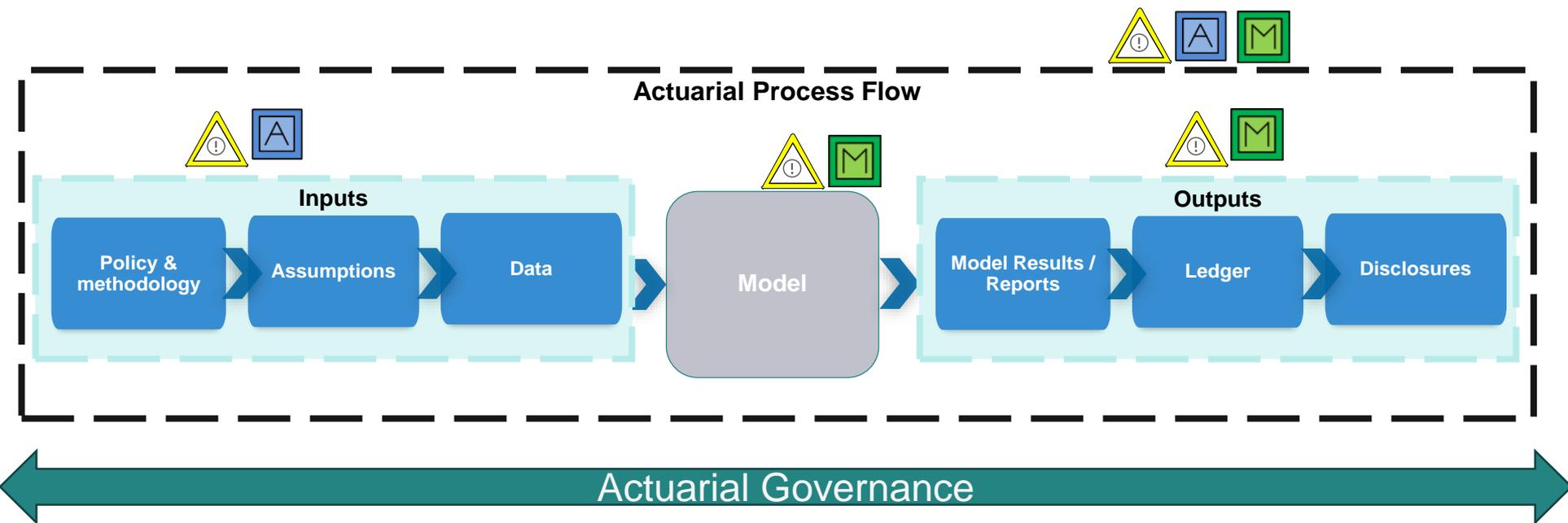
Actuarial Governance

1. What should you be doing now?
2. Additional risk considering LDTI
3. What should you be doing considering LDTI?

Actuarial Governance

What should you be doing now?

Model risk management best practices

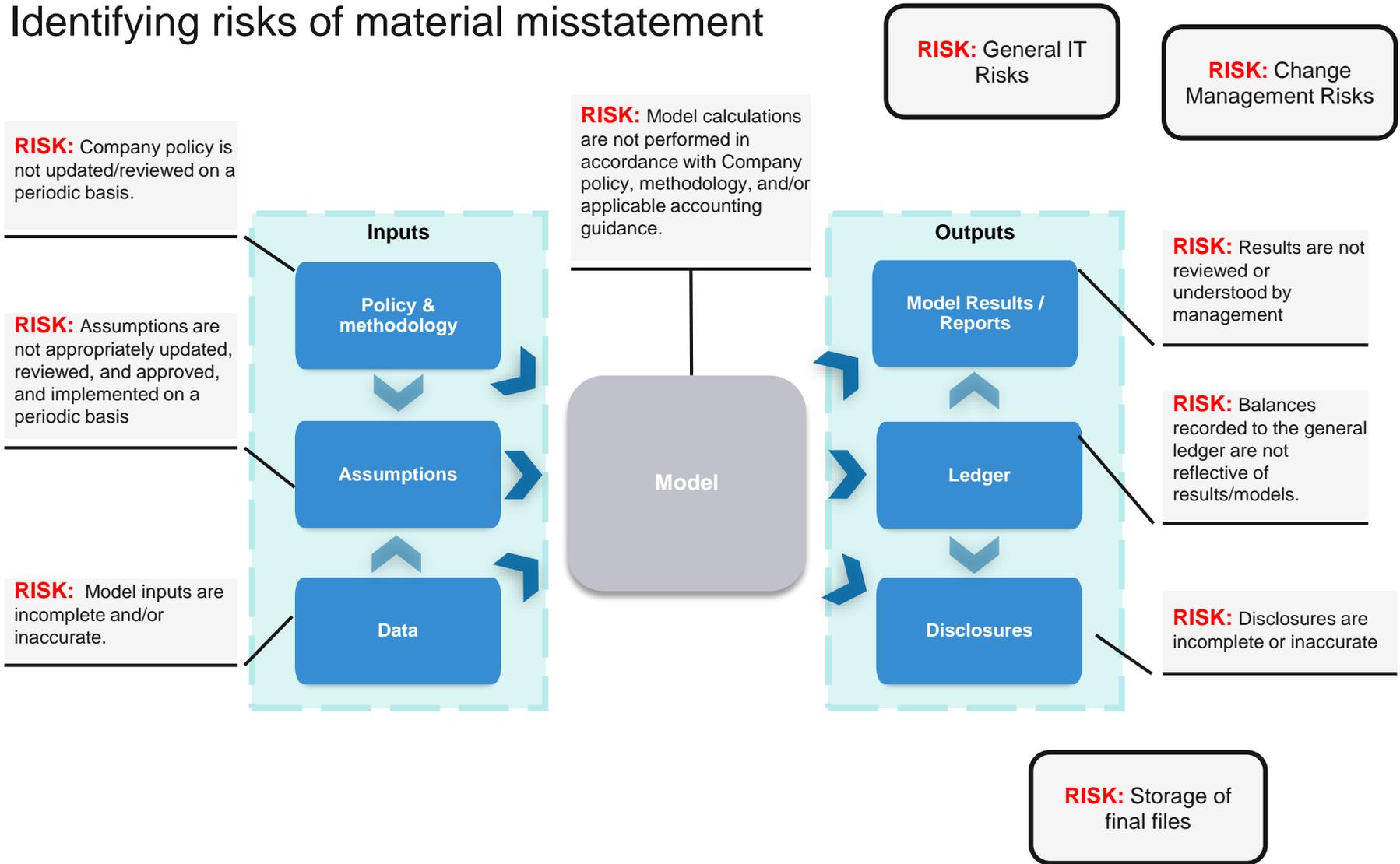


- Understand & document actuarial process / risks / controls
 - Flow chart of the actuarial process
 - Inventory of models, inputs, outputs
 - Risk Assessment 
 - Control Assessment  

Actuarial Governance

What should you be doing now?

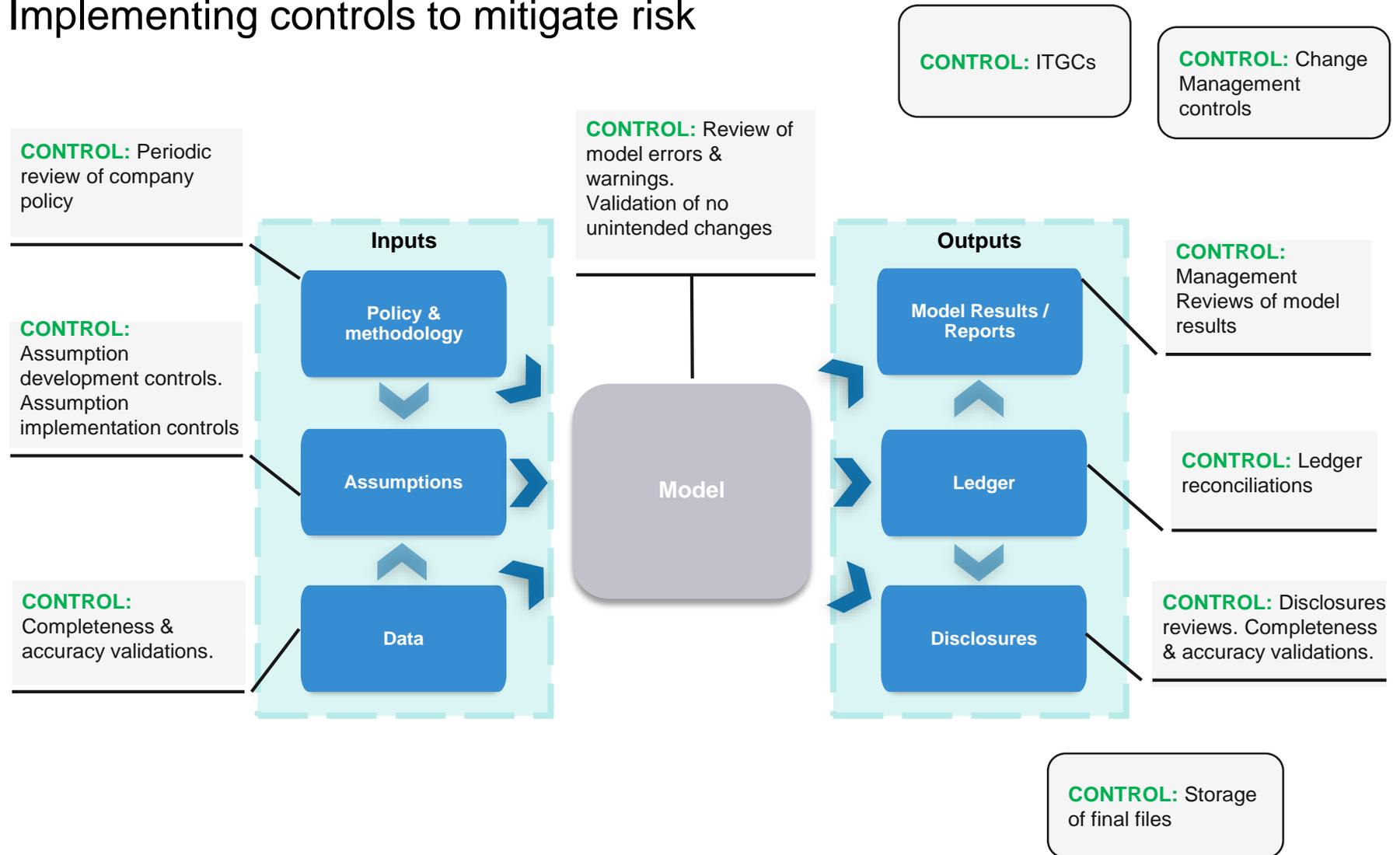
Identifying risks of material misstatement



Actuarial Governance

What should you be doing now?

Implementing controls to mitigate risk



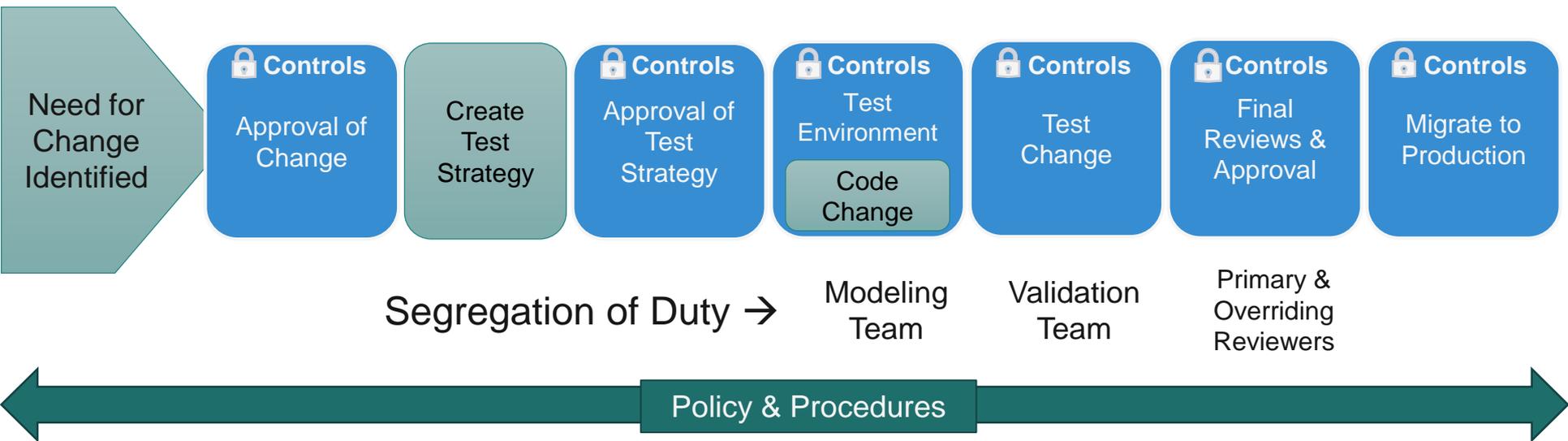
Actuarial Governance

What should you be doing now?



Managing change

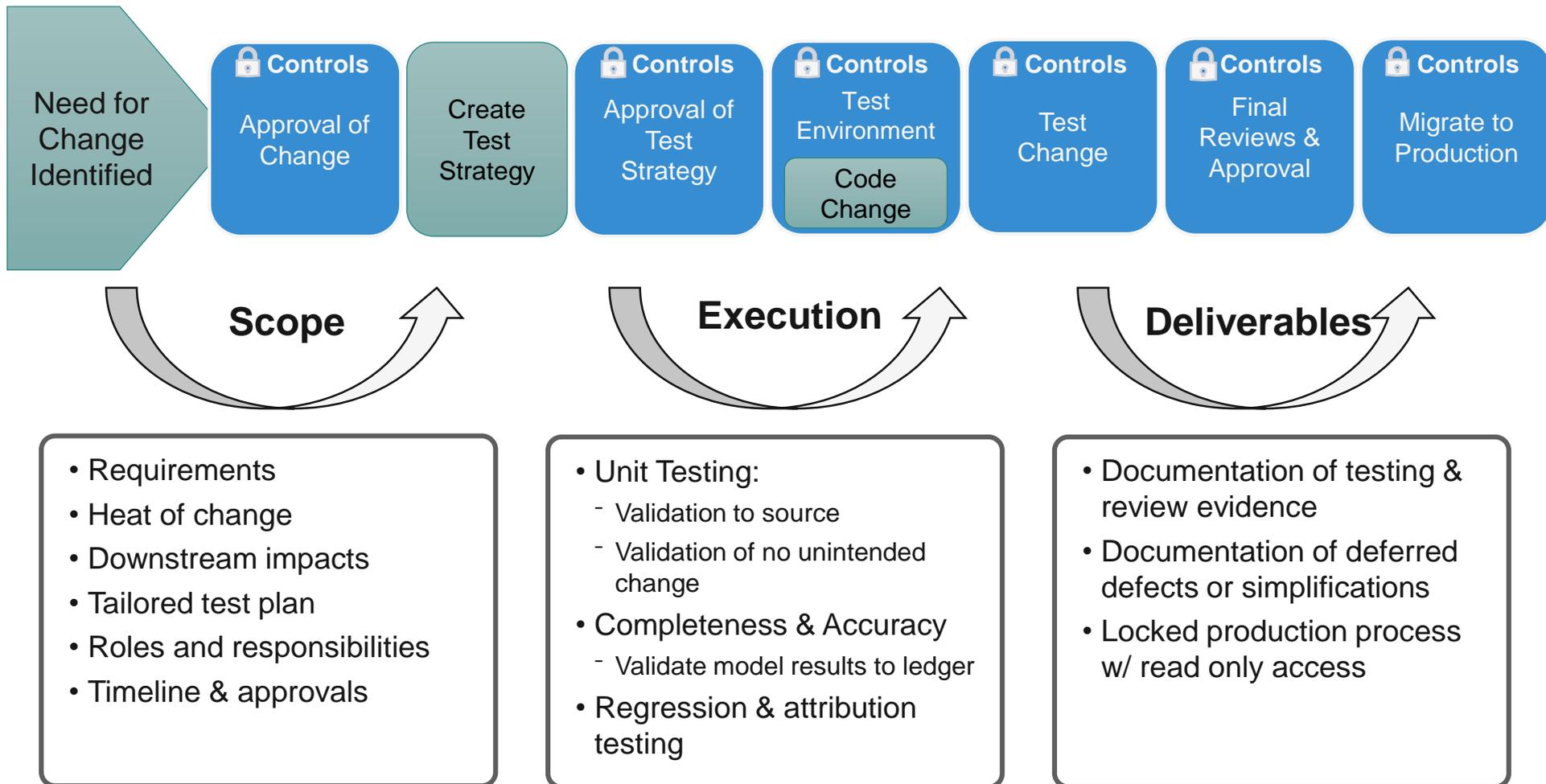
> Actuarial Change Management Process



Actuarial Governance

What should you be doing now?

Validation best practices: Inputs, Model & Reports



Additional risk considering LDTI

- > **Added disclosures making financials more visible +**
- > Multi-step, complex changes +
- > Methodology changes +
- > Possible valuation system conversions +
- > Actual historical data challenges +
- > Annual assumption development & unlocking

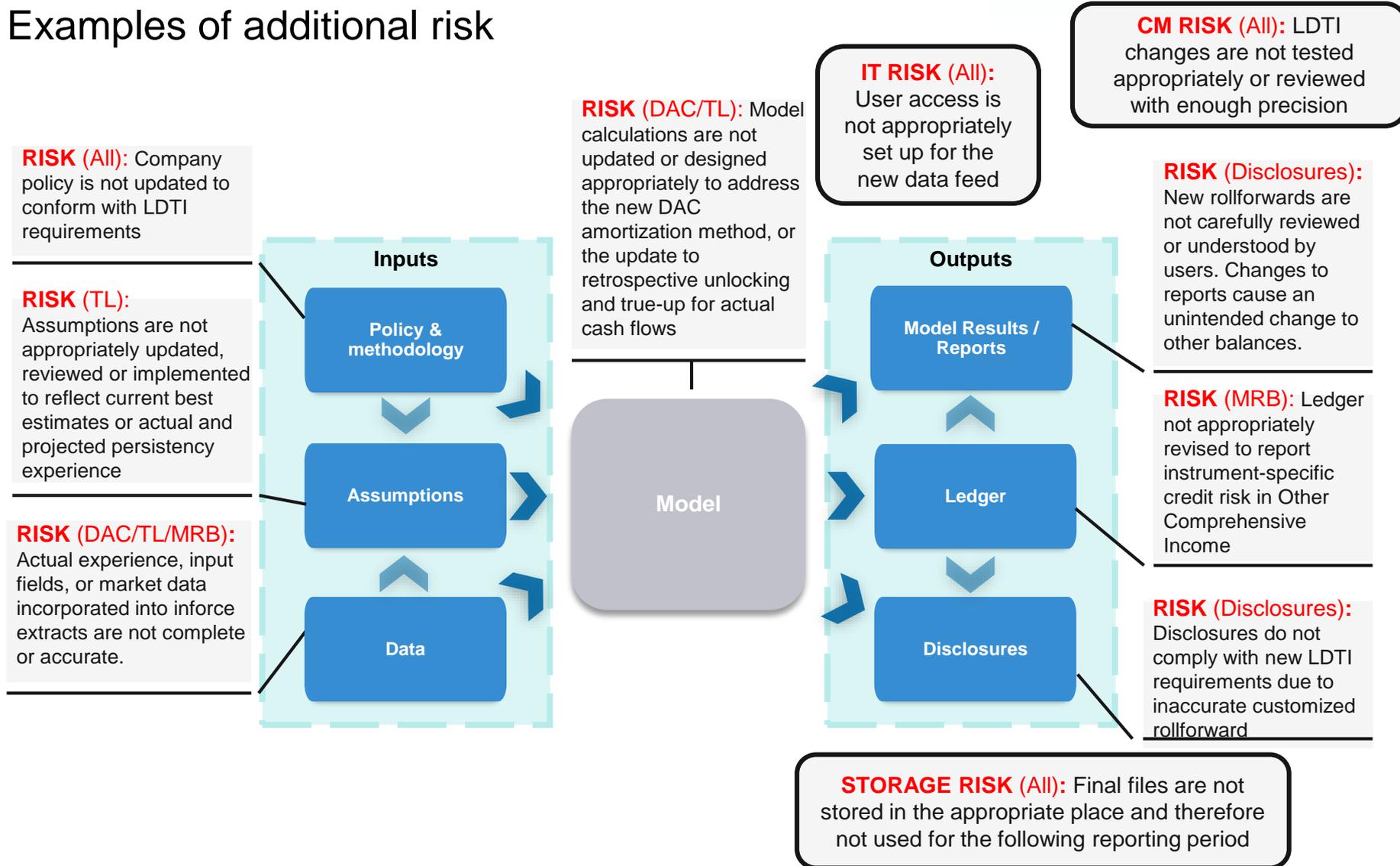
= Increased implementation & ongoing heat/risk due to LDTI changes



Actuarial Governance

What should you be doing considering LDTI?

Examples of additional risk



Actuarial Governance

What should you be doing considering LDTI?



Model Input risks example # 1

Non-routine transactions	
Risk (All)	Company policy is not updated to conform with LDTI requirements
Example # 1	There is no one in company that is in charge of keeping track of regulation updates or ad-hoc changes
Impact	The deadline is missed and financial results are produced that are not compliant with current regulations
Control Considerations	Preventative: Add in a monitoring control for non-routine events that includes appropriate stakeholders throughout the company

Actuarial Governance

What should you be doing considering LDTI?



Model Input risks example # 2

Assumption Governance	
Risk (Traditional Liabilities)	Assumptions are not appropriately updated, reviewed or implemented to reflect current best estimates or actual and projected persistency experience
Example # 2	The current best estimate assumption is developed specifically for a GAAP model projection and is reviewed by the same Actuary who developed it
Impact	The GAAP projections are materially different from other projections which identifies an error in the assumption development
Control Considerations	<p>Preventative: Implement Assumption Governance where assumption development is reviewed by multiple levels including a working group with representatives from all actuarial functions and reviews are independent from the developer</p> <p>Detective: Add in a periodic reconciliation of similar projection models</p>

Actuarial Governance

What should you be doing considering LDTI?



Model Input risks example # 3

Data dependency Completeness & accuracy	
Risk (DAC/Traditional Liabilities/MRB)	Actual experience, input fields, or market data incorporated into inforce extracts are not complete or accurate
Example # 3	The new data source is untested and comes from a source that has been previously uncontrolled
Impact	A material piece of data is inappropriate and some of the existing results are inaccurate
Control Considerations	Preventative: Newly developed extracts should be tested through data certification to validate completeness & accuracy Detective: Quarterly review of control reports to validate completeness & accuracy

Actuarial Governance

What should you be doing considering LDTI?



Model risks example # 1

Model design	
Risk (DAC / Traditional Liabilities)	Model calculations are not updated or designed appropriately to address the new DAC amortization method, or the update to retrospective unlocking and true-up for actual cash flows
Example # 1	In order to adopt the new LDTI requirements related to changing the DAC amortization method and unlocking GAAP assumptions, a new model is developed with not a lot of thought given to the design
Impact	The model structure is not dynamic enough to adapt to future changes which causes ad-hoc changes that pose new risk
Control Considerations	Preventative: Develop change management policy and procedures that require review and sign off of change requirements as well as the test strategy. Requirements should consider end-to-end modeling and changes should be made as streamlined and as automated as possible

Actuarial Governance

What should you be doing considering LDTI?



Model risks example # 2

Model simplifications	
Risk (DAC / Traditional Liabilities)	Model calculations are not updated or designed appropriately to address the new DAC amortization method, or the update to retrospective unlocking and true-up for actual cash flows
Example # 2	You adopt a new modeling software that is not compatible with certain immaterial product features so you document and quantify the impact of using a simplified approach
Impact	Certain characteristics of the simplification were not considered during the impact assessment, and what may have been originally immaterial, grew to be material overtime
Control Considerations	<p>Preventative: Implement a process for monitoring and assessing simplifications and approximations. Sensitivity testing during change management could potentially prevent this.</p> <p>Detective: Set up periodic control to monitor and re-quantify financial impacts where appropriate</p>

Actuarial Governance

What should you be doing considering LDTI?



Model risks example # 3

Model validations & scope	
Risk (DAC / Traditional Liabilities)	Model calculations are not updated or designed appropriately to address the new DAC amortization method, or the update to retrospective unlocking and true-up for actual cash flows
Example # 3	A new model is created to adopt the LDTI requirements. Only a few random single cell policies are valued in excel to compare to the model results
Impact	The selected policies were missing key features of the update and therefore those features were not tested and an error in the development is later found
Control Considerations	Preventative: Make sure test strategy considers all aspects and heat of the change. New models should be baselined (most extensive level of testing). Single policies should be selected strategically based on nature of change and characteristics of the material portions of the block

Actuarial Governance

What should you be doing considering LDTI?



Report risks example # 1

Operational Readiness	
Risk (Disclosures)	New rollforwards are not carefully reviewed or understood by users
Example # 1	While presenting earnings to senior management, the rollforwards are not transparent
Impact	Business decisions based on incorrect interpretation
Control Considerations	Preventative: Implement Operational Readiness procedures with the appropriate stakeholders

Actuarial Governance

What should you be doing considering LDTI?



Report risks example # 2

Report validations	
Risk (Disclosures)	Disclosures do not comply with new LDTI requirements due to inaccurate customized rollforward
Example # 2	In order to produce required LDTI rollforwards, you upgrade to the latest vendor software, but report customizations are required. These customizations are not tested and do not comply with requirements
Impact	New process produces errors in financials and ad-hoc reprocessing is needed
Control Considerations	Preventative: Implement change management policy and procedures which require changes to be tested in a test environment before migration to production Detective: Validate reports for completeness & accuracy

Actuarial Governance

What should you be doing considering LDTI?



Report risks example # 3

Unintended changes	
Risk (Disclosures)	Changes to reports cause an unintended change to other balances
Example # 3	When changing an existing report to add functionality for the new rollforward, the code accidentally changes the SOP rollforward. Only the DAC rollforward was tested, so the error in the SOP rollforward goes undetected
Impact	Error in financials post implementation
Control Considerations	Preventative: Make sure to perform regression testing on any part of the report that could be unintentionally impacted to validate that there are no changes. Detective: Ongoing ledger reconciliations



NASSAU RE

860-403-5000

nsre.com