Institute and Faculty of Actuaries

IFoA Life Conference

ARE YOU SEEING YOUR VALUATION RESULTS WITH 8K CLARITY

Agenda

- Introductions and background
- Modular Approach to the Model Build(s) and entity take-on
- Results Clarity - Example AOC results
- Summary
- HoAF/CFOs perspective

Introductions

Sarah Johnston,

CFO, Utmost Ireland dac.

Stewart Calder,

Owner, Wraxall Capital Solutions.

Utmost International – Acquisition Chronology

Date	Transaction
Feb 2013	Utmost Group (formerly LCCG) founded by Ian Maidens and Paul Thompson
2015	Acquired closed Irish insurance business **IBRC Assurance Co Ltd** and **Scottish Mutual International Ltd**
Jul 2016	Purchased **Aviva Life International** from Aviva
Oct 2016	Purchased **AXA Isle of Man Limited** from AXA
Nov 2016	Purchased **Augura Life Ireland** and **Altraplan Bermuda**
Mar 2017	Purchased **Union Heritage Life Assurance**
Jun 2017	Acquired investment bond business of **AXA Life Europe**
Jun 2018	Acquired **Generali PanEurope**
Dec 2018	Acquired **Athora Ireland's** (formerly Aegon Ireland) International investment bond business
Feb 2019	Acquired **Generali Worldwide Insurance Company Limited**
Oct 2020	Reorganized UK and International businesses into one insurance group; placed under PRA group supervision
Nov 2021	Acquired **Quilter International**
Dec 2024	Completed acquisition of **Lombard International Assurance S.A**. including **LIPCC**

14 acquired companies now using the "one model" implementation

Historical Context

- 14 life assurance companies acquired in just over a decade.
- Resulting in an international group that has > EUR100bn funds under management in 4 overseas jurisdictions.
- Each newly acquired company brought its own actuarial modelling system, methodology and data sets.
- The group developed, in the first few years of operating, a single modelling platform with a common approach to Solvency 2/UK, ORSA and Business planning, and latterly IFRS17.
- Subsequently, every acquired company was integrated into the main actuarial modelling approach within the first year following acquisition.

Modular Approach

Modular Approach

- Quote from Terry Pratchett's Discworld novel – The Truth:

> "The only tools a dwarf needed were his axe and some means of making fire. That'd eventually get him a forge, and with that he could make simple tools, and with those tools he could make more complex tools and with complex tools a dwarf could make more or less anything."

Fundamentals behind the chosen modular approach

A fully integrated, modular approach to modelling and reporting.

Requirements for cashflows:

- Must accurately reflect the contract terms.

But functionality in the cashflow model was needed to achieve the end purpose:

- Real world for n years then risk neutral switching for N-n years.
- Deterministic for n years then shock at t = n.
- Movement swapping.
- Shock parameters.

This functionality then allows forecasting of:

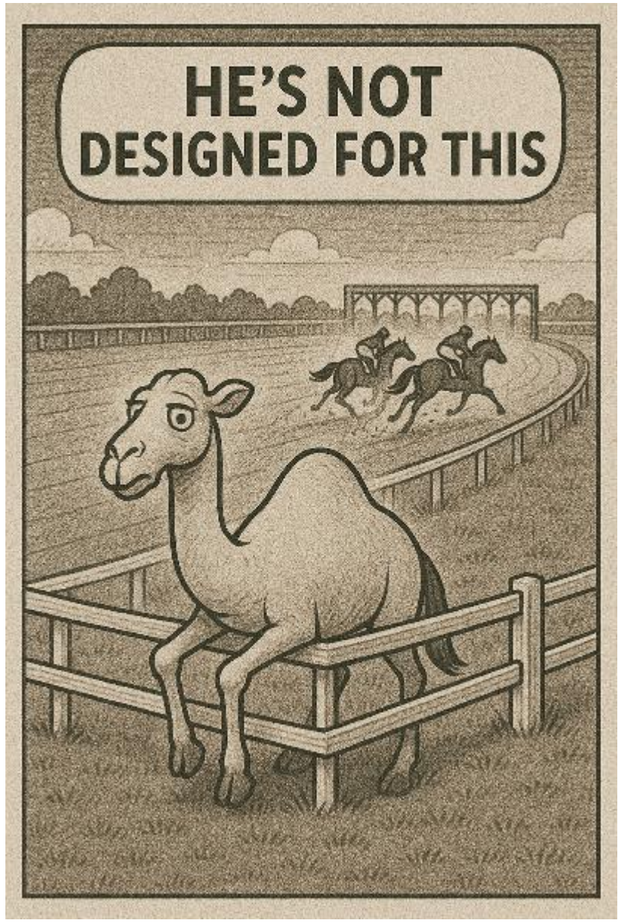
- AOC
- Risk Margins
- Risk Adjustments
- SCRs

Which then allows forecasting of:

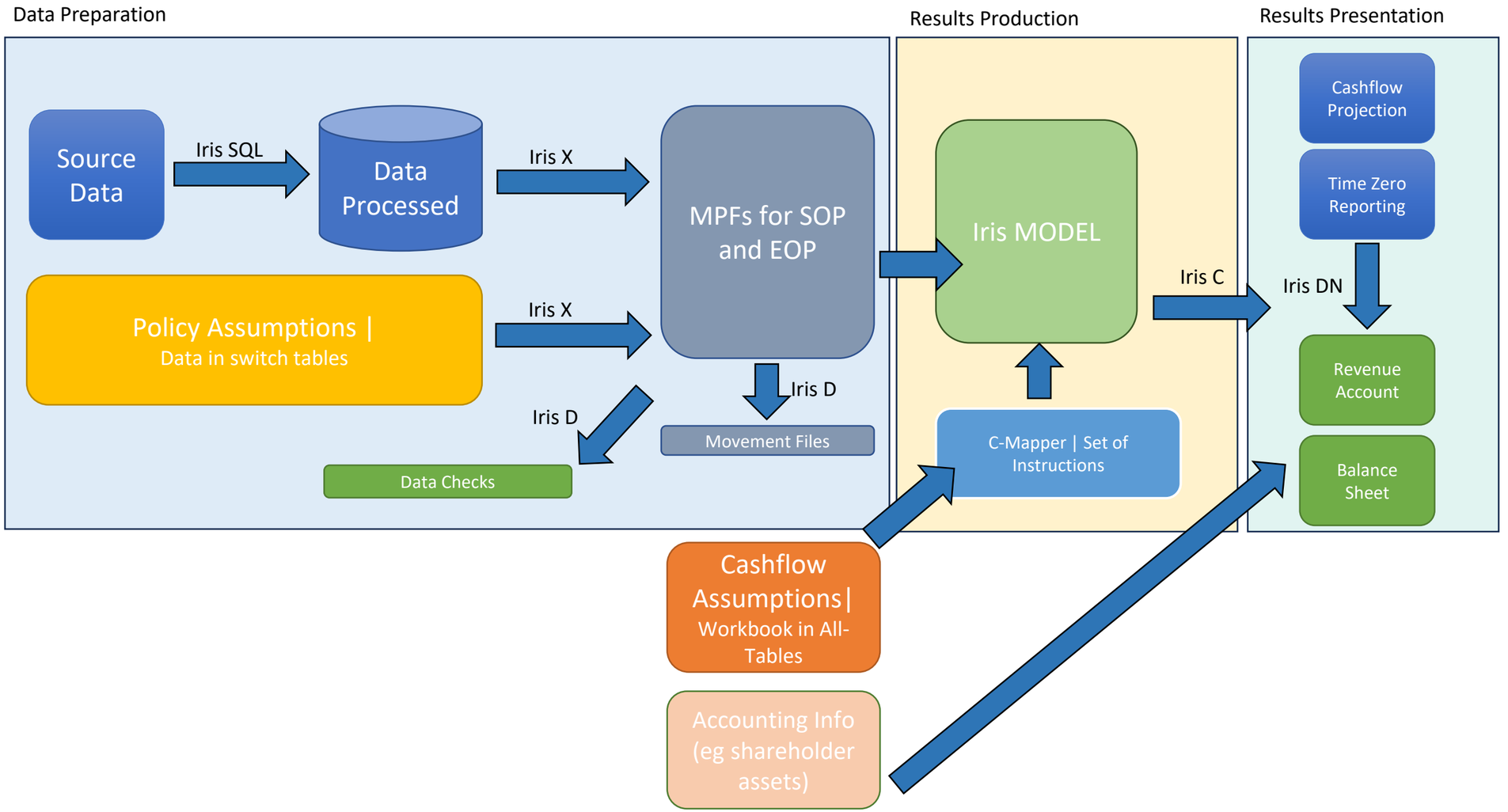
- S2 balance sheets
- IFRS17 balance sheets

And then…

- ORSAs
- Business plans

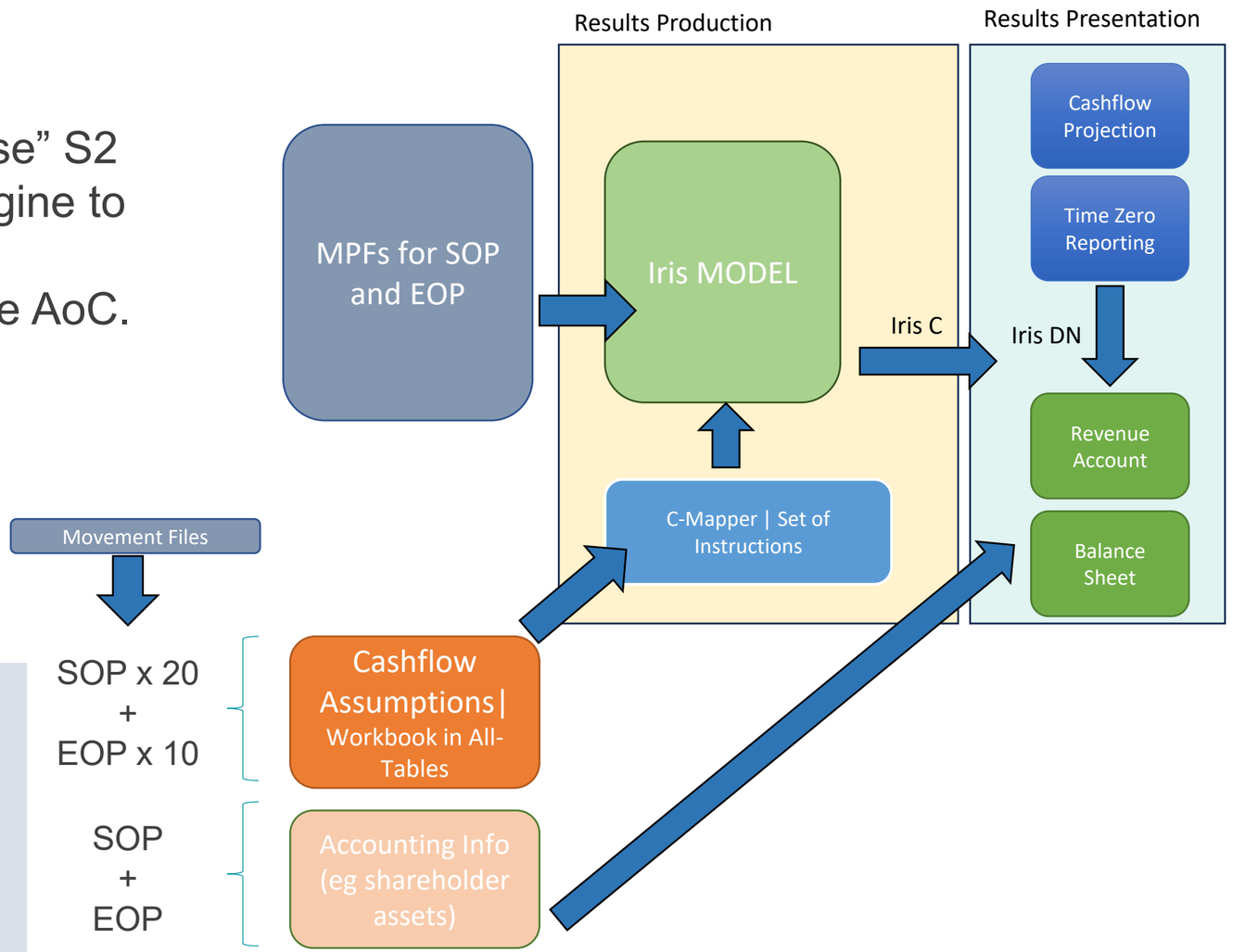


Modular Approach – Cashflow and Solvency 2



Modular Approach – Solvency 2 AOC

- Re-use of “base” S2 calculation engine to produce a comprehensive AoC.



30 sets of output reports

Results in

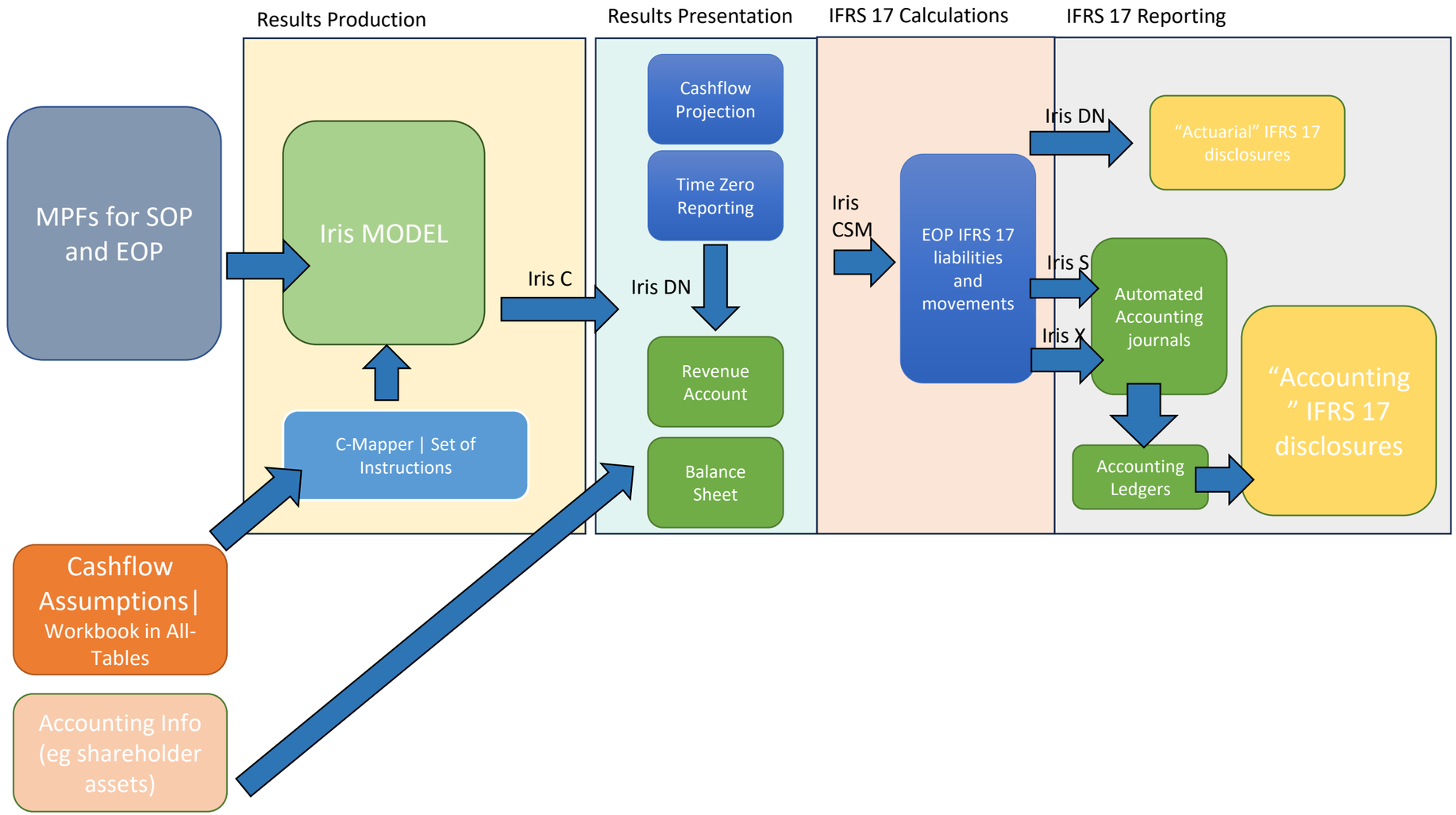
- AOC Summary
- Actual BEL, SCR and RA and solvency coverage for c.30 intermediate steps reconciling from SOP to EOP results
- (Almost) zero untraced

Add

- Movement Files (Lapses / Deaths / Actual Charges)
- UL investment returns
- NB Model points (automatically generated from EOP data)

Modular Approach – IFRS17

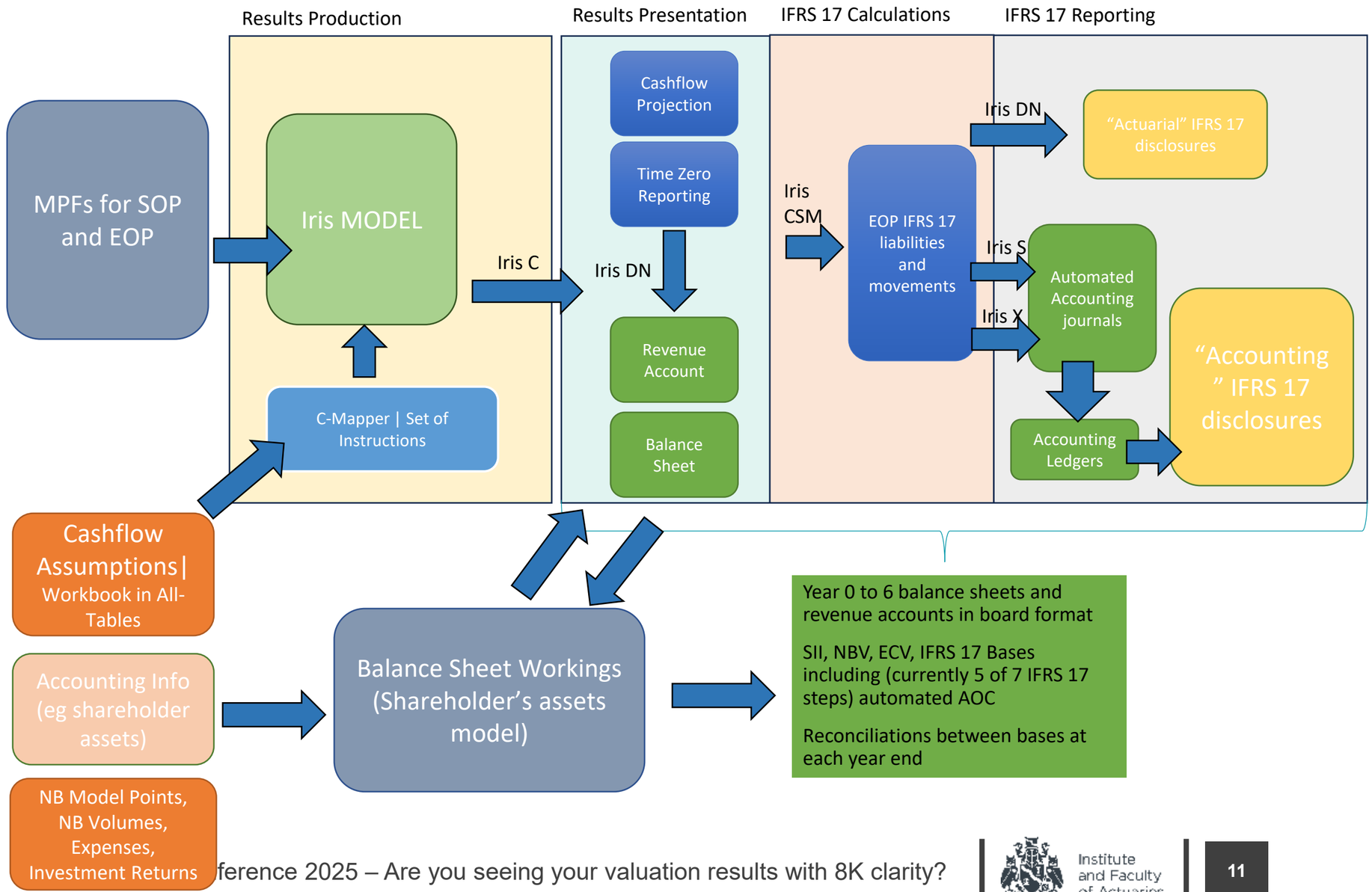
- Re-use of “base” S2 calculation engine AND 7 of the 30 sets of S2 AOC results to produce input cashflows for the CSM model.



Re-use
- Relevant SOP and EOP results from S2 AOC

Modular Approach – Business Plan

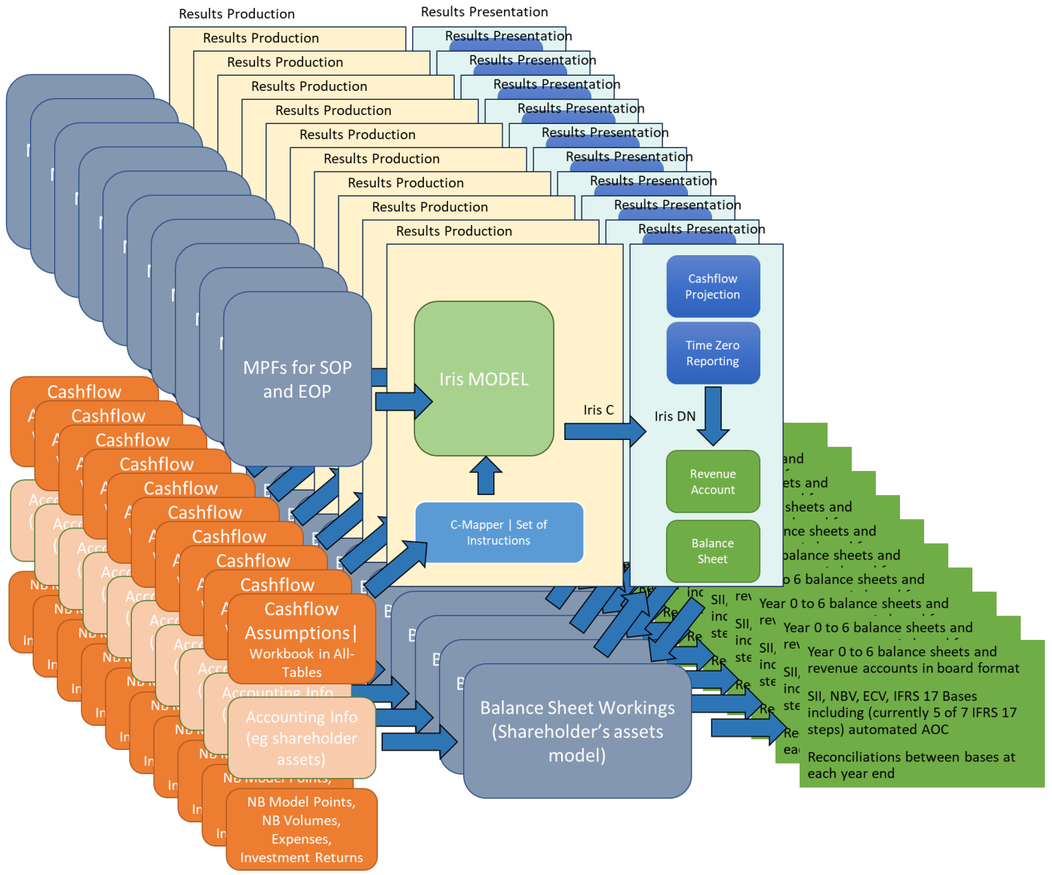
- Re-use of the end to end IFRS17 process to produce projected balance sheets for business plan.



Assumptions
- Taken from appropriate SOP valuation and amended for plan assumptions
- 1 set of assumptions required for SOP (base S2) and for each projected balance sheet.

Modular Approach – ORSA

Assumptions
- Reset according to each ORSA scenario.
- Utilising the “shocks” functionality within the cashflow model.



ORSA summary produced showing projected S2 balance sheets under the range of ORSA scenarios.

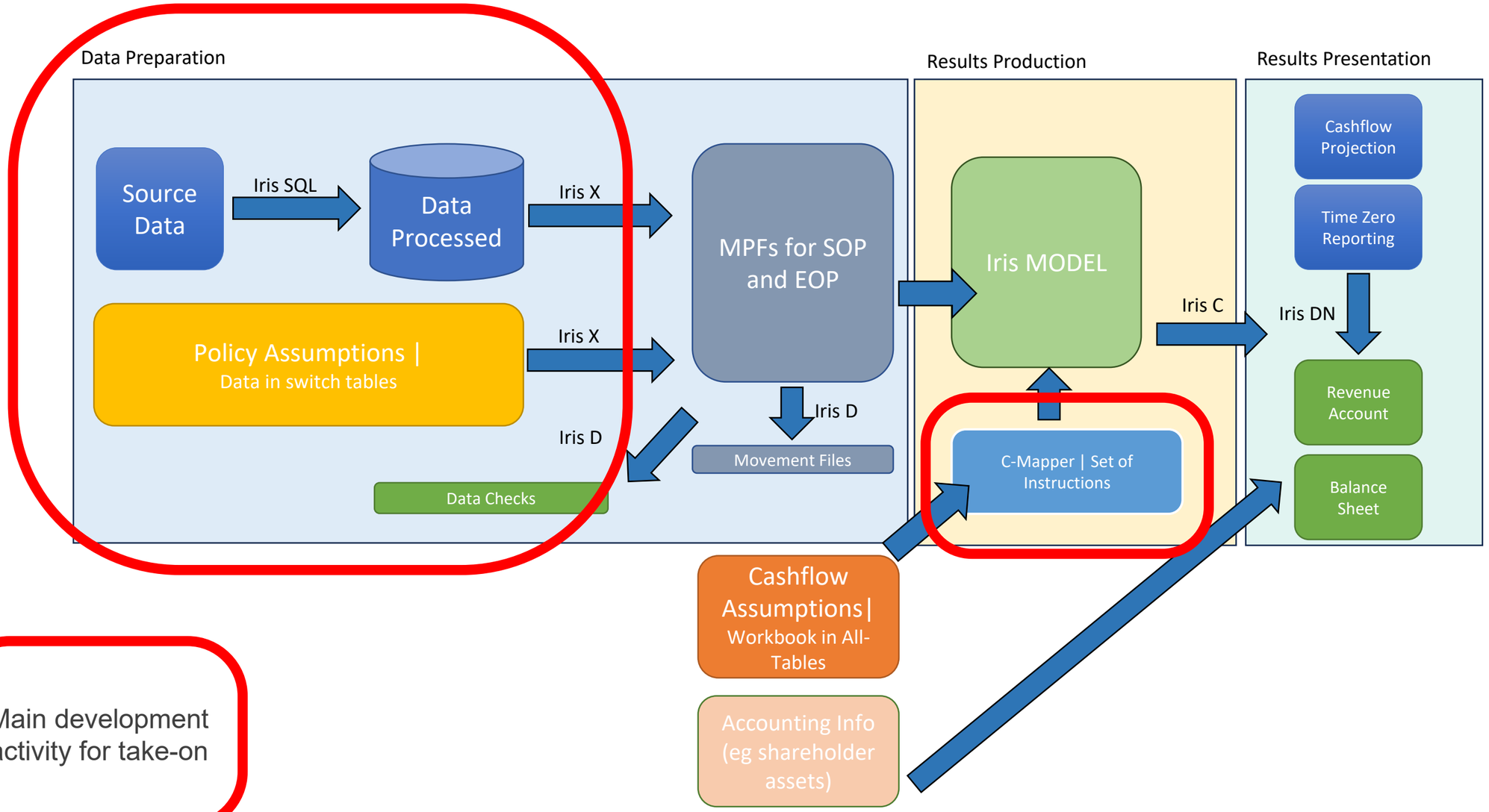
- Re-use of the end-to-end business plan process to produce full ORSA

Modular Approach - Summary

- The following aspects of model design facilitate the re-use of core code components across a range of applications – base results, AOC, IFRS17, Business Planning and ORSA:
  - Switch from real world to risk neutral after n years (where n=0 for base balance sheet),
  - Deterministic projection of n years and then shocks applied at year n,
  - Movements swapping,
  - Shock parameterisation.

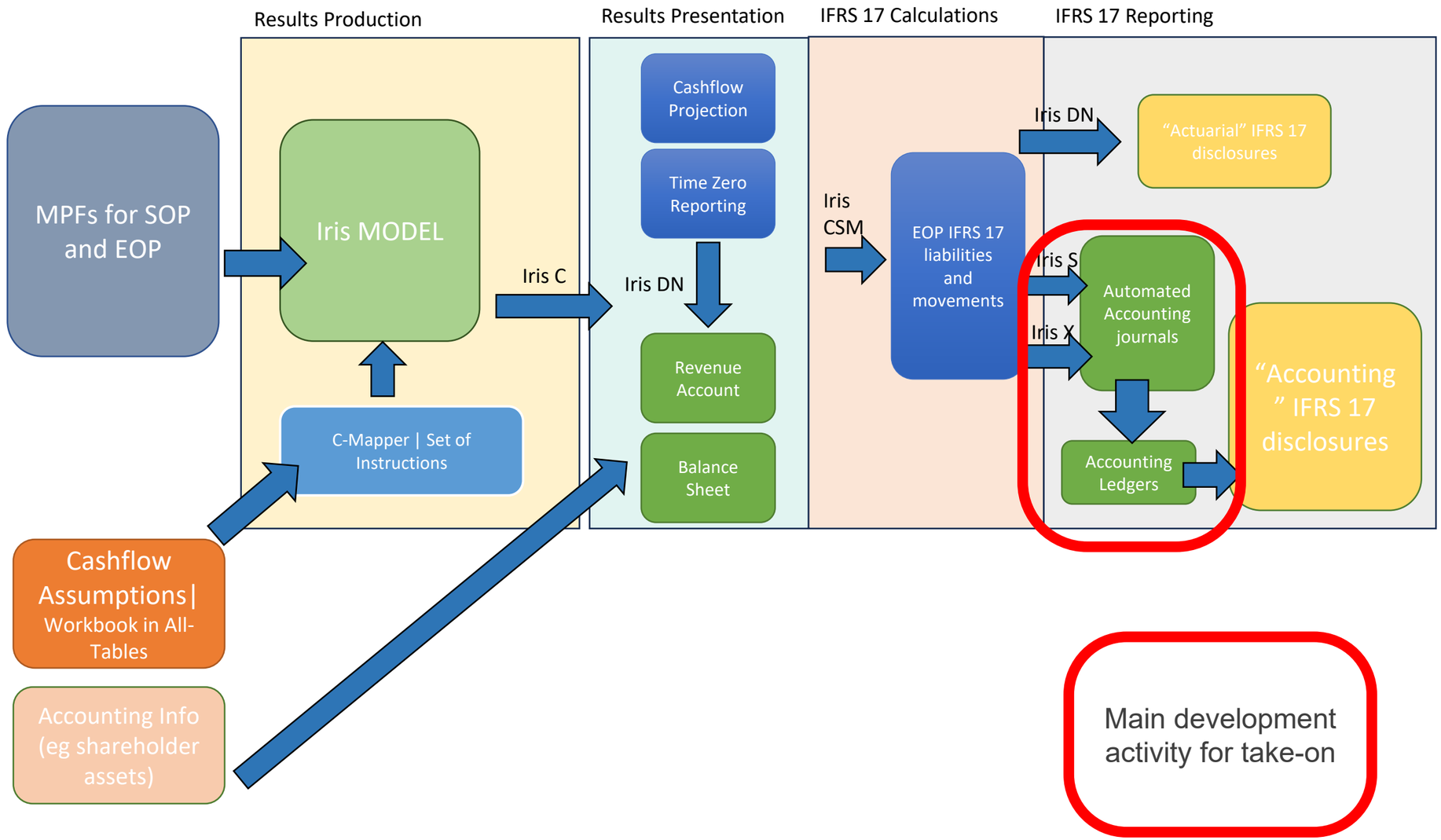
Modular Approach – Entity Take-on

Modular Approach – Entity Take-on (1 of 2)



Modular Approach – Entity Take-on (2 of 2)

- Re-use of “base” S2 calculation engine AND 7 of the 30 sets of S2 AOC results to produce input cashflows for the CSM model.



Re-use
- Relevant SOP and EOP results from S2 AOC

Main development activity for take-on

Modular Approach – Entity Take-on Summary

- The modular approach facilitates re-use of the majority of the components leaving only entity specific developments at entity take-on as follows:
  - Model point creation,
  - Tailoring of cashflow model calculations,
  - IFRS17 journalling / GL interface.
- Meaning all entities are able to comply with group methodologies (business planning, IFRS17 and ORSA) and policies shortly after joining the group.

Results Clarity – Example AOC

Signal Vs Noise

When does more information provide greater clarity?

Signal:

- Information that is directly relevant to the insight.

Sources:

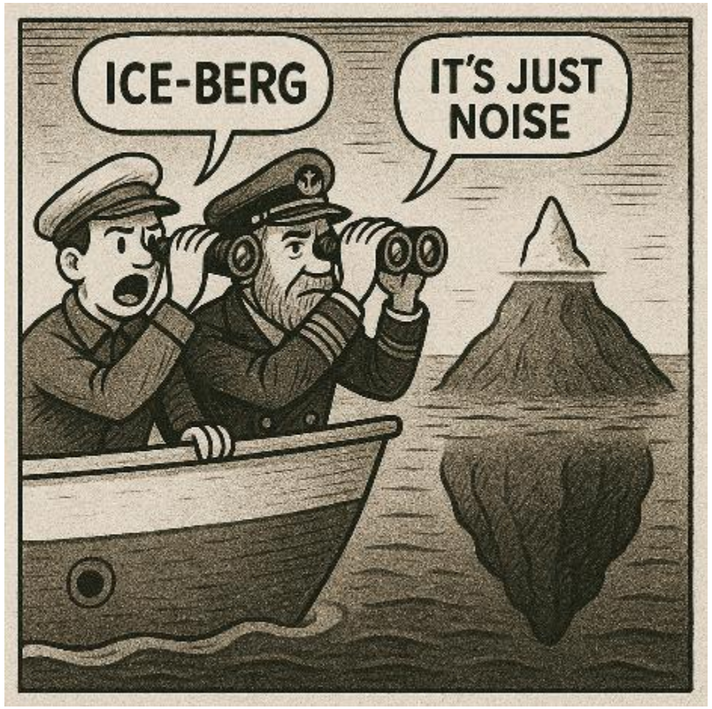
- Accurate high-quality data.
- Consistently applied methodologies.
- Succinct summaries.
- Automation.

Noise:

- Information that obscures the insight.

Sources:

- Poor admin practices.
- Manuals.
- Model point grouping.
- Lack of governance.
- Inexperienced staff.
- Large Language Models!



Time for radar?

Some numbers…

Example AOC

Building the appropriate functionality into the cashflow model:

- Facilitates a complex AOC, with
- All balance sheet components derived by the model, therefore
- Removing noise from estimation.

Step	Projection Start	Projection Point	In Period Projection Basis
START	SOP	SOP	
UNWIND	SOP	EOP	SOP valuation assumptions
NEW_BUSINESS	SOP	EOP	
ACTUAL_DEATHS	SOP	EOP	qx = {1,0} per movements data
ACTUAL_LAPSES	SOP	EOP	qx = {1,0}, lx = {1,0} per movements data
MISSING_POLICIES	SOP	EOP	qx = {1,0}, lx = {1,0}, for unexplained movements
WITHDRAWALS	SOP	EOP	As above plus wx proportions replace with actuals
LIVES_DATA	SOP	EOP	
PREMIUM_DATA	SOP	EOP	Incremental changes from forecast to actual EOP data.
CHARGE_DATA	SOP	EOP	
ASSET_MIX_DATA	SOP	EOP	
FX_RATE	SOP	EOP	As above plus switch to actual EOP FX rates
INVESTMENT_RETURN	SOP	EOP	Estimated fund returns for the period.
FUND_VALUE	SOP	EOP	Replace estimated fund return with actual.
POLICIES_APPEARING	SOP	EOP	Unexplained data in the EOP model points
TIE_UP	EOP	EOP	Full end of period data but with SOP valuation assumptions.
EXPENSES	EOP	EOP	
YIELD_CURVE	EOP	EOP	
INFLATION_CURVE	EOP	EOP	Incremental switches from SOP valuation to EOP valuation assumptions
LAPSE_RATES	EOP	EOP	
MORTALITY_RATES	EOP	EOP	
SHOCKS	EOP	EOP	Symmetric adjustment change
END	EOP	EOP	End of period results

Some numbers…

Example AOC

Step	Own Funds, Excluding VIF, Before Risk Margin	PVFP	Risk Margin	Own Funds	SCR	Ratio
START	3.3	135.0	- 38.3	100.0	61.2	163.4%
UNWIND	6.6	- 5.2	1.6	3.1	- 3.2	14.3%
NEW_BUSINESS	- 3.4	6.6	- 2.5	0.8	4.7	-12.2%
ACTUAL_DEATHS	0.0	0.2	- 0.0	0.2	0.1	0.0%
ACTUAL_LAPSES	- 0.1	1.0	- 0.2	0.8	0.3	0.4%
MISSING_POLICIES	- 0.0	- 0.0	0.0	- 0.0	- 0.0	0.0%
WITHDRAWALS	- 0.2	- 0.6	0.2	- 0.6	- 0.4	0.0%
LIVES_DATA	- 0.2	0.3	- 0.1	- 0.1	- 0.2	0.4%
PREMIUM_DATA	0.2	- 0.3	0.0	- 0.1	- 0.1	0.2%
CHARGE_DATA	- 0.2	- 1.5	0.4	- 1.3	- 0.8	0.0%
ASSET_MIX_DATA	-	-	-	-	- 0.3	0.9%
FX_RATE	- 0.1	- 0.4	0.1	- 0.4	- 0.1	-0.4%
INVESTMENT_RETURN	-	-	-	-	-	0.0%
FUND_VALUE	0.5	- 5.8	1.2	- 4.1	- 2.1	-0.9%
POLICIES_APPEARING	0.0	0.7	- 0.2	0.6	0.3	0.0%
TIE_UP	- 0.4	1.5	- 0.4	0.6	- 0.1	1.5%
EXPENSES	0.0	0.1	- 0.0	0.1	- 0.0	0.2%
YIELD_CURVE	0.1	1.8	- 0.1	1.8	0.4	1.9%
INFLATION_CURVE	- 0.0	- 0.3	0.0	- 0.2	0.0	-0.5%
LAPSE_RATES	-	-	-	-	-	0.0%
MORTALITY_RATES	-	-	-	-	-	0.0%
SHOCKS	-	-	-	-	1.8	-4.9%
END	6.1	133.3	- 38.2	101.2	61.6	164.3%

*Anonymised data based on real results.

Generating information that the governing bodies need to know:

- Passing of time reduces discounting effects, removing risk and converts value to cash.
- New business uses cash, increases risk, but has generated future value.
- Continued implied vol increases regulatory capital requirements.
- But with the noise removed from PVFP/SCR/RM calcs small numbers become important:
  - TIE_UP 1.5 on PVFP.
  - POLICIES_APPEARING 0.7.

Clarity - Summary

- Removing sources of noise:
  - Facilitates understanding of the drivers of the business results,
  - Development of appropriately focussed board communications, and
  - Focusses limited resources on investigating the important things instead of ghosts.

- Avoid creating sources of noise when developing your models, e.g.:
  - Approximations to SCR/RM in AOC steps.
    - Modular approach allows recalculation of them at each step.
  - Combining multiple changes under single AOC steps.
    - Separate them out into multiple steps, calculate accurately and then combine in the Board story.
  - Approximations to movements impacts (linear interpolation).
    - Use actual movements and recalculate the whole balance sheet at each step using the full modelling tools.

HoAF/CFO Perspective

View from the top.

~~HoAF's~~ CFO's Perspective

- The importance of high-quality information.
  - Identifying real business issues.
  - Driving actual improvements in the business operations.
- The challenge facing a HoAF in communicating business performance to a Board:
  - In a rapidly growing business,
  - Against a backdrop of regulatory and financial reporting change,
  - With a demanding regulator.

Overall Summary

Summary

- In this presentation we have shown how a modular approach to model development:
  - Facilitates re-use of code and processes across multiple use cases,
  - Reduces significantly the overhead of bringing new acquisitions onto group standard methodologies for S2, IFRS17, Business Planning and ORSA.
  - Reduces the noise in results produced facilitating better use of limited resources and communication of results to Boards.
- Further, our HoAF has provided us with insights into the importance of high-quality results information and the challenges of communicating results to the Board.

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