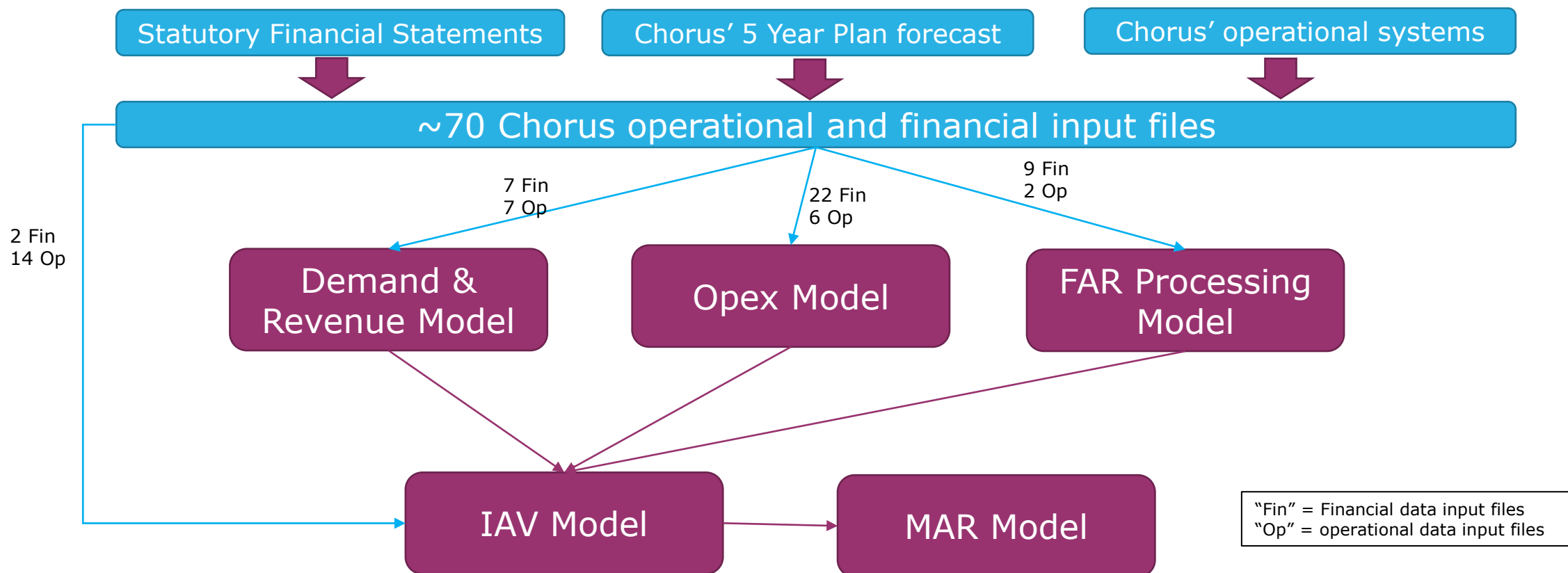


CHORUS

Analysys Mason model structure

The diagram below sets out at a high level the key components of the Analysys Mason (AM) model structure, including the IAV Model and the Opex Model. Data from Chorus' statutory accounts and corresponding financial systems is required, in addition to data taken from the 5 Year Plan. In some instances, data is sourced from Chorus' operational systems and there is a robust assurance in place to help ensure the data accurately represents, in all material respects, the operations of Chorus.



*note that at the time of submission, approx. 70 data input files were provided to AM for use (and subject to AM confirmation of use).

The Assurance Framework – internal certification overview

Chorus has a robust three tier internal certification process to ensure the data provided to Analysys Mason:

- (i) responds appropriately to any request made; and
- (ii) is derived from, and accurately represents in all material respects the operations of Chorus.

This standard required helps to make certain that the integrity of the data is not compromised, and is fit for purpose. Certifiers are required to turn their minds to (and document) any risks, assumptions and limitations in relation to the use of the data and escalate any instances where information requested cannot be provided.

The head of the project team is ultimately required to provide overall certification.

The Assurance Framework – internal certification

Certification by key personnel initiates a 'tree up' process. The table below identifies the three tiers of internal certification to help ensure the quality of the data inputs used in the final IAV Model and final AM Opex Model.

Tier	Role description
Quality Assurance (QA)	<p>Typically senior (Tier 3) subject matter experts, who certify to a 'reasonable enquiry' standard that the data provided by technical leads and technical reviewers 'treeing up' to them is derived from and accurately represents in all material respects the operations of Chorus. QA Reviewers are also asked to record any risks, limitations and assumptions for overall consideration by the project team lead</p> <p>QA Reviewers have the opportunity to discuss the data with reviewers who have personal knowledge of its preparation in order to challenge or follow up on any areas of concern. The data that is the subject of certification is made available to the QA Reviewers.</p>
Technical Reviewer (TR)	<p>Typically experienced (Tier 2) subject matter experts, who certify to the best of their belief that the data provided by the technical lead 'treeing up' to them is derived from and accurately represents in all material respects the operations of Chorus. TRs are also asked to record any risks, limitations and assumptions for consideration by the QA Reviewer they 'tree up' to and ultimately for consideration by the project team lead.</p> <p>TRs have the opportunity to discuss the data with the TL reviewers who have personal knowledge of its preparation in order to challenge or follow up any areas of concern. The data that is the subject of certification is made available to the TRs.</p>
Technical Lead (TL)	<p>Typically subject matter experts (Tier 1), who are primarily the preparers of the input data and pull together the information direct from reliable sources and systems used in BAU for operational purposes.</p> <p>TLs certify to the best of their belief that the data they are providing is derived from and accurately represents in all material respects the operations of Chorus. TL reviewers are also asked to record any risks, limitations and assumptions for consideration by the TR they 'tree up' to and ultimately for consideration by the project team head.</p>
Project lead	<p>'Treeing up' from the subject matter experts, the project lead certifies to a 'reasonable enquiry' standard that the data provided and certified the QA, TR and TLs is derived from and accurately represents in all material respects the operations of Chorus. Prior to providing certification, the project lead engages with the executive sponsor to discuss various issues including:</p> <ul style="list-style-type: none"> • the key assumptions, limitations and judgement calls made in preparing and collating the data input information; • the key risks raised in preparing and collating the input data information and how they have been addressed; • how confidentiality and market sensitive information issues will be managed; and • that relevant input data information provided to Analysys Mason has been subject to internal certification, subject to any noted deviations.
<p>Note: If there are deviations from the standard three tier certification process, these are noted for consideration by the project team lead. For example, data sourced from the 5YP is not subject to further internal certification as the data is Board approved and has already been subject to interrogation. Any changes or additions to the files requires a full re-certification. Certification is also provided covering the 'clean pass' of data from Chorus to Analysys Mason, once the relevant data has been collated and certified by SMEs.</p>	

Explanation of sources of comfort and review

External	Detailed explanation
PwC	PwC provide external assurance with respect to compliance against the relevant IM requirements documenting how the AM models give effect to the relevant IM requirements and noting any exceptions, omissions, ambiguities, interpretations and/or judgements where appropriate.
Deloitte	Deloitte provide external assurance with respect to model integrity and model documentation in reviewing the AM models.
Analysys Mason	Chorus engaged Analysys Mason to build the models and documentation forming part of this response. AM rely on data provided by Chorus for their work, and have the opportunity to liaise with Chorus on their understanding of the data to confirm it meets their requests.
Incenta	Incenta provide external assurance as economic experts, and assist (as necessary) in ensuring that the data requested from AM (and provided by Chorus) meets that request.
Sapere	Sapere provide external assurance regarding WACC compliance, including that the estimates of the risk free rate and debt premium of each year has been performed in accordance with the relevant Input Methodologies.
KPMG	<p>KPMG are external experts who perform the following:</p> <ul style="list-style-type: none"> - Year end Financial Statements audit - Half-year audit review - Information Disclosure audit (current regime) - RP1 submission assurance - Internal financial controls and general IT controls audit - Other minor legal compliance and Treasury related engagements <p>Where relevant these are discussed in more details on page "The Assurance Framework – further checks (cont's)"</p>

The Assurance Framework – further checks

The data input information provided to Analysys Mason can be broadly placed into 3 categories:

- Historical financial data from Chorus
- Future forecast information from Chorus; and
- Non-financial (or operational) data from Chorus’ operational systems;

The table below illustrates who provides assurance over the categories listed above. Further description of these assurance topics has already been discussed in this pack or is discussed on the next slide.

	PwC review	Deloitte review	Review from experts (AM/Incenta)	3-tier Chorus certification	Reconciles to KPMG audited Fin Statements	System subject to internal audit	Included in Board and Exec reports	KPMG audited Info Disclosure
Chorus data inputs – financial historical data			✓	✓	✓	✓	✓ some	✓ some
Chorus data inputs – forecast information			✓	✓			✓	
Chorus data inputs – non-financial/operational data			✓	✓		✓ some	✓ some	✓ some
AM models	✓	✓	✓					

At the core of all this data is Chorus’ financial system controls and operational processes. We ensure integrity of these as they are periodically audited by PwC and KPMG, information reconciles through to audited financial statements and information from these systems and processes also forms part of reports to the Board.

The Assurance Framework – further checks (cont'd)

In addition to the internal certification process that wraps around the input data, further confidence is gained as to the quality of the data through the means detailed below:

Area of assurance	Detailed explanation
Reconciles to audited Financial Statements	<ul style="list-style-type: none"> Historical financial information provided as a data input to the models is sourced from Chorus' financial systems. These systems and data also underpin the audited financial statements of Chorus which are audited by KPMG each year. As part of the provision of this data to AM, summary checks were done by AM and Chorus to ensure this data at an aggregate level could be reconciled back to the Financial Statements. Similarly, Technical Leads performed this check as part of providing their certificate on the data.
System subject to internal audit	<ul style="list-style-type: none"> Each year Chorus' ARMC determine a programme of internal audit work with Chorus' internal auditors (PwC or KPMG). These comprise a range of areas in the business on a rotational basis for controls and systems to be reviewed. The findings of these areas are reported back to the ARMC. Additionally, KPMG perform a controls audit over key controls and systems used to underpin the financial data for the financial statements. Their findings and observations are similarly reported to the ARMC as part of the finalisation of the annual financial audit.
Included in Board and Exec reports	<p>Forecast financial information, at a disaggregated level, is provided to the Board in June each year for the next 5 years (the 5 Year Business Plan). The data input files provided to AM that contain financial forecast information is taken from this source providing comfort over the level of review and scrutiny it has had.</p> <p>Additionally, financial and non-financial data is prepared and reviewed on a monthly basis as well by Chorus management and Board. As such systems, controls, and processes are closely monitored as part of that regular monthly process (includes checklists, review discussions, segregation of duties, reconciliations across the balance sheet etc).</p>