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Data Controls and the Use of Generative Artificial Intelligence in Preparing IFRS 17 Insurance Reports

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Abstract: This article develops a conceptual framework for controlling the quality of data used in reporting under IFRS 17 Insurance Contracts and defines a limited supporting role for generative artificial intelligence (GenAI). The method combines comparative analysis of the Standard, published research and the findings of EIOPA's 2025 GenAI survey with process mapping and an illustrative calculation. Of the 347 insurers responding to the EIOPA survey, 65% reported using GenAI and a further 23% expected to introduce it within three years. The proposed framework links policy records, actuarial measurement, rule-based analytics, draft explanations prepared with GenAI and professional approval. In the illustrative case, an upfront premium receipt of 1,200 units gives rise to 300 units of insurance revenue for the first quarter under explicitly stated assumptions. Because the framework has not been tested on company data, its operational effectiveness remains an empirical question.

Keywords: IFRS 17; insurance contracts; generative artificial intelligence; insurance revenue; data quality; internal controls; technology risk.

Introduction

IFRS 17 Insurance Contracts applies to annual reporting periods beginning on or after 1 January 2023 and replaced IFRS 4. It combines current measurement with recognition of profit as insurance contract services are provided and presents the insurance service result separately from insurance finance income or expenses [1]. Consequently, the receipt of a premium and the recognition of insurance revenue need not occur in the same reporting period.

Policy administration, payment, claims, reinsurance and actuarial data commonly originate in different operational systems. Without a consistent link between each contract, its IFRS 17 group and the reporting period, movements in revenue, insurance service expenses and contract liabilities become difficult to trace. This article asks how an insurer can establish an auditable path from source records to IFRS 17 disclosures. Its purpose is to develop a conceptual control framework connecting the Standard's reporting requirements with operational data checks.

GenAI may accelerate document processing and the drafting of explanations, but the accuracy of a generated response cannot be presumed. A related research question is therefore how insurers can use such tools while preserving reproducibility of the accounting calculation and human accountability for the final reporting decision.

Literature review

The IFRS Foundation describes fulfilment cash flows, including an adjustment for non-financial risk, and the contractual service margin (CSM) as central elements in the measurement of relevant groups of insurance contracts. Losses on onerous groups are recognised immediately; insurance revenue excludes investment components [1]. The IASB's effects analysis explains why revenue follows the provision of insurance contract services rather than the collection of premiums [2]. These

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sources establish reporting principles but do not prescribe a particular software architecture for an insurer.

Puławska and Strzelczyk analysed submissions from 68 market participants and identified annual cohorts, onerous contracts, discount-rate methods and the premium allocation approach as significant implementation challenges [3]. Their findings support closer scrutiny of grouping decisions and the history of measurement assumptions; they do not directly estimate the effectiveness of an individual insurer's data-control system.

EIOPA analysed the first-year transition using 2023 half-year financial statements from 53 insurance or reinsurance groups in 17 Member States and reported heterogeneous effects on insurance liabilities and equity [4]. Alhawtmeh examined measurement, disclosure and perceived reporting quality in a field study of Jordanian insurers [5]. Together, these sources indicate the need to connect accounting rules to transaction-level data and a reviewable audit trail. The present article develops a framework for that connection.

A separate EIOPA market survey, published on 2 February 2026, drew on responses from 347 insurers in 25 EU and EEA countries. It reported that 65% already used GenAI and a further 23% planned to implement it within three years. Most reported use cases were still at an experimental or proof-of-concept stage [6]. Current applications span customer service, claims management, sales and distribution, while fraud detection was the area with the highest planned future adoption. EIOPA also identified inaccurate outputs, cyber risk, data protection and dependence on third-party providers as concerns [6]. That survey did not measure GenAI performance in IFRS 17 accounting; its application to reporting in this article is a conceptual proposal.

Methodology

This is a conceptual, descriptive study. Sources were selected to cover the official IFRS 17 requirements and explanatory material [1, 2], published research on implementation [3, 5], and separate EIOPA evidence on IFRS 17 adoption and GenAI use [4, 6]. It is neither a systematic literature review nor a meta-analysis. Requirements, observed findings and the author's proposed controls were classified separately. A process map and a matrix of permitted GenAI tasks and review controls were then developed. A hypothetical case illustrates the distinction between an upfront premium receipt and revenue recognised for insurance services in a reporting period. The EIOPA respondents do not constitute a sample collected for this study, and no causal effect of AI on IFRS 17 reporting is estimated.

The unit of analysis is a group of insurance contracts within a reporting period. Proposed input fields include contract identifier, coverage term, product, portfolio, annual cohort, cash flows, claims, directly attributable expenses and the version of actuarial assumptions. A basic internal check reconciles the opening balance plus movements during the period to the closing balance. This is presented as a process control, not as a new measurement rule under IFRS 17.

Three operational indicators are proposed for a future implementation study: the proportion of policies without a group assignment; the proportion of groups with unexplained reconciliation differences; and the proportion of measurement records without an assumption version. Their respective denominators are policies in the period, groups included in the reconciliation and measurement records. No regulatory threshold or empirical baseline is claimed for these proposed indicators.

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Analysis and results

IFRS 17 requires insurance contracts to be organised into portfolios of similar risks managed together and then separated into specified profitability groups. Contracts issued more than one year apart cannot be included in the same group [1, 2]. The reporting process must therefore preserve a traceable link between a source policy and the group used for measurement. Table 1 sets out the proposed process controls.

Table 1. Data and control points in an IFRS 17 reporting process

Stage	Core data	Control question and evidence
1. Classification	Policy, coverage, risk and product	Is significant insurance risk present? Is the portfolio and cohort assignment documented?
2. Grouping	Contract ID, inception date, expected profitability	Is each contract assigned to the appropriate group? Reconcile to the group register.
3. Measurement	Cash flows, discounting, risk adjustment, CSM	Are the assumption version and approval date recorded? Retain the calculation log.
4. Recognition	Coverage service, claims and expenses	Are revenue and expenses attributed to the appropriate period? Link calculations to the ledger.
5. Reporting	Opening and closing balances, movements	Are balances reconciled by group? Retain a register and explanation of differences.

The proposed framework uses a unique contract identifier and a historically traceable group key to connect policy administration, actuarial calculations and general ledger entries. Versioned assumptions and documented approval prevent prior-period inputs from being silently overwritten. A reconciliation then permits differences to be investigated along the policy–group–measurement–journal entry–disclosure chain. This is the author's proposed data architecture, not a software requirement expressly imposed by IFRS 17.

Illustrative calculation. Assume that on 1 January an insurer receives a premium of 1,200 units in its bank account for 12 months of evenly provided coverage. The case assumes that the conditions for applying the premium allocation approach are met. It excludes an investment component, insurance acquisition cash flows, discounting, reinsurance and an onerous group. Claims of 180 units and directly attributable insurance service expenses of 30 units arise during the first quarter. The service pattern is assumed to be uniform throughout the coverage period.

Table 2. First-quarter insurance service result in the illustrative case

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Item	First quarter	Explanation
Insurance revenue	300	1,200 × 3/12 under the assumed even pattern of coverage.
Insurance service expenses	210	Claims of 180 plus directly attributable service expenses of 30.
Insurance service result	90	300 − 210; insurance finance income and expense are excluded.

Recognising the full 1,200-unit cash receipt as first-quarter revenue would overstate the volume of services provided in the period. Under the stated assumptions, first-quarter insurance revenue is 300 units. The 90-unit insurance service result is specific to this hypothetical case; it does not represent the profit of an actual insurer. In practice, coverage units, acquisition cash flows, the applicable measurement approach and finance effects require separate assessment [1, 2].

The proposed control distinguishes the bank record, which confirms receipt of 1,200 units, from the coverage schedule, which supports the 300-unit revenue calculation. If the whole receipt were posted to revenue, the first-quarter revenue in this illustrative case would be overstated by 900 units. The review therefore extends beyond the journal amount to the service period, group key and revenue allocation schedule. The 900-unit difference is an illustrative control exception, not an observed error.

At the reporting level, separately coded opening balances, newly recognised groups, services provided, changes in assumptions and cash movements make it possible to identify the source of a closing-balance difference. If a previous assumption is overwritten, it becomes difficult to explain whether a change relates to insurance service or finance effects. The proposed timestamp, version number and approval trail support the auditability of the calculation without replacing any recognition criterion in the Standard.

A further layer of the conceptual framework follows the sequence “IFRS 17 source data → rule-based checks and GenAI-assisted review → management decision → professional approval → internal control → reassessment of technology risks”. A deterministic check identifies a mismatch in a group key or reconciliation. GenAI may draft an explanation using approved source documents, but cannot independently validate the accounting amount. An actuary and an accountant compare that draft with the underlying record, approved assumptions and ledger entry; only approved adjustments reach the financial statements. This is a proposed governance arrangement, not an IFRS 17 requirement to use GenAI.

Table 3. Proposed boundaries for GenAI use in the IFRS 17 process

Process	Supporting GenAI task	Principal risk and control
Policy and claims documents	Extract fields and flag missing documents.	Extraction error: sample-check against source documents.

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Group reconciliations	Draft an explanation of a difference from approved documents.	Incomplete or inaccurate explanation: compare with rule-based calculations and record reviewer approval.
Management analysis	Summarise period-to-period movements in plain language.	Disclosure of confidential data: access controls and de-identification.
Third-party model service	Process restricted queries against approved internal data.	Vendor dependence: audit trail, contractual oversight and fallback process.

The framework deliberately distinguishes GenAI from conventional data analytics. Rule-based methods are suited to repeatable calculations of reconciliation differences, period boundaries and grouping conditions. GenAI is potentially useful for reviewing unstructured text and preparing draft explanations. EIOPA found that 64% of reported use cases targeted internal processes and that inaccurate generated outputs were the most frequently cited GenAI risk [6]. Recording rejected AI suggestions alongside accepted, reviewed outputs would create additional evidence for internal audit.

A future practical test would compare (a) the policy register with the group register, (b) actuarial measurement with ledger entries, and (c) ledger entries with the financial reporting schedule each month. Exceptions would be logged by group and assumption version, together with their cause, reviewer and resolution date. Comparing grouping errors, unresolved reconciliation differences and reporting time under consistent definitions before and after implementation could test the framework's usefulness. No such measurements were made in the present study.

Conclusion

Insurance revenue under IFRS 17 is linked to insurance contract services and cannot automatically be equated with premiums collected. The proposed framework combines source data, rule-based analytics, GenAI-assisted drafting, professional approval and internal control. The illustrative calculation shows why the part of an upfront premium attributable to current-period services must be assessed. EIOPA's findings establish the practical relevance of examining GenAI use among insurers, but do not demonstrate that AI has improved IFRS 17 reporting [6].

Before implementation, an insurer would need to adapt the controls to its products, measurement approaches and accounting policies. Future research could use appropriately de-identified operational data to compare grouping errors, reconciliation differences and reporting time before and after adoption. Such evidence would be necessary to assess the framework's practical effectiveness.

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