



August 28, 2023

Office of the Secretary
Public Company Accounting Oversight Board
1666 K Street, N.W.
Washington, DC 20006-2803

RE: PCAOB Release No. 2023-004, *Proposed Amendments Related to Aspects of Designing and Performing Audit Procedures that Involve Technology-Assisted Analysis of Information in Electronic Form*

Dear Madam Secretary:

We appreciate the opportunity to comment on the Public Company Accounting Oversight Board's (PCAOB or the "Board") *Proposed Amendments Related to Aspects of Designing and Performing Audit Procedures that Involve Technology-Assisted Analysis of Information in Electronic Form* (the "proposal" or the "proposing release").

Support for proposal

We commend the PCAOB on taking this first step to modernize its standards in light of the evolving and increasing use of technology by auditors in today's environment. Audits are becoming more data-driven and many firms like ours are developing and leveraging automated tools and techniques, which can benefit audit quality. As such, we support the PCAOB's efforts to address this evolution in practice through principles-based requirements and additional guidance where appropriate.

We appreciate the PCAOB's outreach on this topic prior to the release of the proposal which, as noted in the proposing release, was conducted with a wide range of stakeholders, including audit firms, investors, academics, preparers of financial statements, and members of the PCAOB Data and Technology Task Force. We also appreciate the outreach performed with the previous Standing Advisory Group (SAG), as well as the current PCAOB Investor Advisory Group (IAG) and Standards and Emerging Issues Advisory Group (SELAG).

Areas where further clarification or guidance is needed

While we support the overall direction of the proposal, there are certain areas where further clarification or guidance may be helpful to align requirements to the risk assessment framework in the PCAOB's standards and drive consistent interpretation and execution. Our views take into account how we are performing technology-assisted analysis today and how we presently envision its use may evolve in the future as more data becomes available.

External information in electronic form

It is important for auditors to consider the relevance and reliability of information to be used as audit evidence, including both external information maintained by the company in electronic form and other external information that may be used as evidence by the auditor (e.g., as an input to a technology-assisted analysis). We acknowledge the PCAOB's intent to "address the risk that the external information

*PricewaterhouseCoopers LLP, 400 Campus Drive, Florham Park, NJ 07932
T: (973) 236 4000, F: (973) 236 5000, www.pwc.com*



maintained by the company and provided to the auditor to be used as audit evidence may be incomplete or inaccurate (i.e., when compared to the original version that the company obtained) or that a company may otherwise modify the external information before providing it to the auditor.”¹

Nevertheless, we are concerned with the scope of the proposed requirement in paragraph .10A of Auditing Standard (AS) 1105, *Audit Evidence*, related to evaluating the reliability of external information maintained by the company in its information system in electronic form. We believe the requirement in paragraph .10A(a) to obtain an understanding of “the company’s procedures by which such information is received, recorded, maintained, and processed in the company’s information systems” is not practicable or necessary in all circumstances. The nature and extent of controls a company may have over what we believe is a wide variety of external information may vary significantly — and these controls are not necessarily part of a company’s information system relevant to financial reporting² or internal control over financial reporting (ICFR) depending on the circumstances. Additionally, the intent of certain terms in the requirement are unclear:

- “Information regarding” a purchase order or cash received in proposed footnote 3B to the requirement — it is not clear if this is referring to cash receipts data where the cash has been applied to customer invoices in the company’s detailed bank statements that is maintained in the company’s enterprise reporting system (ERP) system, the electronic data files received from the bank from the lockbox with cash receipt information, wire transfer information, information received through an EDI feed, or something else.
- “Test the company’s procedures discussed in subpart (a) of this paragraph” — this phrase is not used elsewhere in PCAOB standards. We believe this is intended to mean auditors may evaluate the reliability of the information by performing substantive procedures, which we believe is necessary as controls over external information may not exist or be formalized notwithstanding adequate procedures in place for financial reporting purposes as well as a company’s maintenance of its books and records.

To illustrate, auditors may use technology-based tools to match revenue transactions with subsequent cash receipts. The auditor may use bank statements provided by the company in PDF format as inputs to the tool. A company may not have formal controls over the maintenance of bank statements it provides to the auditor as the company is unlikely to consider these documents to be part of its information system relevant to financial reporting. The company may also only receive the bank statements in electronic form (e.g., as part of a source data file). We do not believe it would be practicable or necessary to suggest the auditor would need to understand how the bank statements are received, recorded, maintained and processed and test the company’s controls or procedures (if any) as contemplated by paragraph .10A(a)-(b). Rather, the reliability of the cash receipts data would be considered by other testing, such as procedures to validate that (1) cash received was from a bona-fide customer or expected payor, (2) the cash receipt and/or credit memo (as applicable) was applied as directed by the customer, and (3) the cash receipt is traced to a deposit in the company’s bank statement, and would be further supported by bank confirmation procedures. The nature and extent of this testing would also take into account the auditor’s assessment of the risks of material misstatement due to fraud. Accordingly, we believe a principles-based requirement related to evaluating the reliability of information is necessary to promote scalability.

¹ PCAOB Release No. 2023-004, *Proposed Amendments Related to Aspects of Designing and Performing Audit Procedures that Involve Technology-Assisted Analysis of Information in Electronic Form*, page 25.

² As addressed in AS 2110, *Identifying and Assessing Risks of Material Misstatement*, paragraph .28.



Additionally, auditors may use information from external sources as inputs in a technology-assisted analysis that are not maintained in the company's information systems; however, this is not addressed in the proposal. We suggest the PCAOB address information obtained directly from external sources and provide guidance that auditors should exercise professional judgment about the procedures performed to evaluate the relevance and reliability of information to be used as audit evidence, depending on the nature of that information and how it is used in the audit. We offer drafting suggestions to proposed paragraph .10A of AS 1105 in the appendix to this letter.

Classification of procedures as tests of details or substantive analytical procedures

We support the PCAOB's intent in clarifying the differences between a test of details and a substantive analytical procedure, and believe providing a description of a test of details may help illustrate how technology-assisted analysis is addressed by the PCAOB's standards.

Certain procedures using technology-assisted analysis are performed at an individual item level for all items in a population but, depending on the precision of the test, differences from what management has recorded may reasonably be expected at an individual item level similar to what would be expected in aggregate for a substantive analytical procedure. Accordingly, certain analyses performed in practice today may exhibit characteristics of both types of procedures. We support allowing for auditor judgment as to whether a procedure is a test of details or a substantive analytical procedure as defined by PCAOB standards. We believe that procedures performed using technology-assisted analysis, regardless of whether they are defined as tests of details or substantive analytical procedures, if performed at an appropriately disaggregated level and appropriately designed to address the risk at the assertion level, could be sufficient to address significant risks of material misstatement.³

For example, performing a technology-assisted analysis to test 100% of a population provides audit evidence about the population akin to a more traditional test of details. When technology-assisted analysis is used in this way, it is often done as part of a comprehensive testing strategy to address a financial statement line item. We believe it is important for auditors to be able to exercise professional judgment in evaluating the audit evidence obtained from using technology-assisted analysis, including whether such evidence is sufficient and appropriate to respond to the assessed risks of material misstatement at the assertion level. This judgment includes how auditors determine what represents a misstatement when items are identified for further investigation (often referred to as "notable items" or "outliers"). The auditor may take into account the precision of the analysis (e.g., when differences are reasonably expected), as well as the materiality of the differences. In practice, auditors obtain an understanding of why notable items or outliers have occurred to assess whether further procedures are necessary in order to determine whether a significant account is materially misstated (which may include assessing whether these items are in line with the auditor's expectations as to why there would be differences). Depending on the nature of the technology-assisted analysis and the other procedures performed (including tests of controls and substantive audit procedures), the auditor may ultimately conclude that the risk of material misstatement is reduced to a sufficiently low level without performing additional substantive audit procedures.

We believe this is the PCAOB's intent in including new paragraph .37A(c) in AS 2301, *The Auditor's Responses to the Risks of Material Misstatement*, which would require the auditor to consider whether the

³ Paragraph 9 of AS 2305, *Substantive Analytical Procedures*, notes that "For significant risks of material misstatement, it is unlikely that audit evidence obtained from substantive analytical procedures alone will be sufficient."



identified items represent a misstatement or indicate a deficiency in the design or operating effectiveness of a control. We agree with the PCAOB's decision not to prescribe the nature, timing, or extent of procedures for investigating the identified items. However, we believe this could be clarified in the requirement, and have suggested edits in the appendix to this letter.

Circumstances in which no items meeting auditor-established criteria are identified

In accordance with the proposed requirement in paragraph .37A of AS 2301, a scenario could arise in which the auditor is able to test 100% of the population using technology-assisted analysis, and no items are identified that meet the criteria established by the auditor (e.g., a 3-way match does not result in any notable items). If the auditor designed the procedure appropriately to address the relevant assertion at an appropriate level of disaggregation (in accordance with paragraph .07 of AS 1105), and tested controls over the accuracy and completeness of the information produced by the company, including, where applicable, information technology general controls and automated application controls (in accordance with paragraph .10 of AS 1105), no additional testing would be expected on the population. In the case of a significant risk account, no further procedures would need to be performed as the analysis would be classified as a test of details and the analysis performed (the successful execution of the technology-assisted analysis with no notable items) would provide sufficient appropriate audit evidence.

If this is not the PCAOB's intent, we believe further clarification is necessary, including expectations related to the nature, timing, and extent of procedures performed to evaluate data reliability as part of the auditor's overall requirement to obtain sufficient appropriate audit evidence to address the assessed risks of material misstatement. For example, it may be beneficial for the PCAOB to acknowledge in the release text of the final standard or authoritative guidance that there is a spectrum of risk to be considered when assessing data reliability and for applying auditor judgment in accordance with paragraphs .07-.09 of AS 1105 and paragraph .16 of AS 2305. In our view, the level of effort needed to assess data reliability should be based on the auditor's judgment of risk related to the data, which includes consideration of the source of the data, type of audit procedure being performed, level of desired assurance, and nature of account, among other considerations. This is consistent with the PCAOB's view in the accompanying release to AS 2501, *Auditing Accounting Estimates, Including Fair Value Measurements*, that "the determination of the data to be tested—and the nature, timing, and extent of that testing—should be based on and responsive to the assessed risks of material misstatement."⁴

Holistic approach to addressing the impact of technology in PCAOB auditing standards

Consider if classification of procedures in the standards remains appropriate

We support the PCAOB's clarification about the differences between tests of details and analytical procedures. We believe this is a helpful amendment to current standards that will provide clarity and help drive increased consistency in practice. However, as technology continues to evolve, we encourage the Board to monitor whether distinguishing between specific classifications of procedures across its standards remains necessary.

The standards today have distinct categories of procedures: risk assessment procedures or further audit procedures, which consist of tests of controls or substantive procedures (further classified as tests of

⁴ PCAOB Release No. 2018-005, *Auditing Accounting Estimates, Including Fair Value Measurements, and Amendments to PCAOB Auditing Standards*, page A3-18.



details or substantive analytical procedures).⁵ There are requirements in the standards that are driven based on how a procedure is classified. For example, for significant risks of material misstatement, the standards explain that it is unlikely that audit evidence obtained from substantive analytical procedures alone will be sufficient.⁶ As technology continues to evolve and auditors develop innovative techniques to plan and perform audits, procedures may become more difficult to fit into specific classifications as we note above. Placing auditor focus on the classification of procedures may not be as impactful to audit quality as a broader focus on the sufficiency and appropriateness of audit evidence obtained from performing procedures. As such, a shift away from the strict classifications in the standards, in our view, is worth exploring.

Broader consideration of technology and its impact on the audit

While we appreciate the Board's first step to provide a foundation in the standards related to the use of technology-assisted analysis, we believe technology will need to be an ongoing focus for the Board in its standard setting given the evolving nature of technology — and that broader change may ultimately be needed to take a more holistic approach to embedding considerations relating to management and auditors' use of data and technology into the suite of standards. We encourage the Board to be bold in its considerations in this area, although we recognize the need to acknowledge that more traditional techniques may continue to be employed depending on the facts and circumstances of the engagement and its auditor. As the Board tackles issues related to the use of technology, the challenge will be to strike a balance between modernizing the audit standards to be fit for purpose, acknowledging and giving appropriate recognition to how technological auditing techniques can support obtaining audit evidence, and avoiding requirements that inadvertently inhibit innovation.

Specific observations related to artificial intelligence (AI)

We were pleased to see AI as a topic at the recent SEIAG meeting and agree with the issues that were raised in that discussion. We support exploration of this topic on a priority basis as part of the PCAOB's Data and Technology research project. We encourage the PCAOB to consider the feedback received at the SEIAG meeting, and continue stakeholder outreach to determine if it is appropriate to amend auditing standards or provide guidance to auditors to address risks of material misstatement and support audit quality in this area.

Consider the interplay with other PCAOB standard-setting projects

We recommend the PCAOB consider this project in tandem with other projects on its standard-setting agenda to promote a cohesive, holistic approach and to clearly set out how the proposals are interconnected, including its projects to address substantive analytical procedures, updates to AS 2401, *Consideration of Fraud in a Financial Statement Audit*, and quality control. While the proposal states that it does not address the evaluation of the appropriateness of tools by the firm's system of quality control, we believe that it will be important for the PCAOB and audit firms to consider the interaction between proposed QC 1000, *A Firm's System of Quality Control*, and the technology-assisted analysis proposal, particularly as it relates to documentation about the purpose and objective of using a tool at the engagement level in the audit documentation. We believe it would be helpful for the Board to provide guidance explaining how the Board intends proposed QC 1000 and this proposal to interact.

⁵ AS 1105, paragraph 13.

⁶ AS 2305, paragraph 9.



Effective date

Assuming SEC approval in 2024, we recommend that the final standard be effective no earlier than for audits with fiscal years beginning on or after December 15, 2025 to allow sufficient time for audit firms to make the necessary updates to their methodology, training, and tools.

* * * * *

We appreciate the opportunity to provide input on the Board's proposal and would be pleased to continue a dialogue with the Board and its staff. Please contact Brian Croteau at brian.t.croteau@pwc.com regarding our submission.

Sincerely,

A handwritten signature in cursive script that reads "PricewaterhouseCoopers LLP".

PricewaterhouseCoopers LLP



Drafting suggestions

AS 1105, Audit Evidence

Evaluating the Reliability of External Information Used as Audit Evidence Maintained by the Company in Electronic Form

.10A The company may provide to the auditor information that the company received from one or more external sources and maintained in its information systems in electronic form,^{3B} or the auditor may obtain information directly from external sources.^{3C} When using such information as audit evidence, the auditor should ~~evaluate whether the information is reliable for purposes of the audit by performing procedures to:~~

- a. Obtain an understanding of the source of the information and, where necessary, the company's procedures over such information is received, recorded, maintained, and processed in the company's information systems, and
- b. Based on that understanding, design and perform procedures to evaluate whether the information is reliable for purposes of the audit.

~~Test controls (including information technology general controls) over the company's procedures discussed in subpart (a) of this paragraph or test the company's procedures discussed in subpart (a) of this paragraph.~~

Note: The nature, timing, and extent of procedures regarding the reliability of information obtained by the company or the auditor from external sources depends on how the information will be used in the execution of an audit procedure and the risks of material misstatement that are being addressed by the procedure. These procedures may include testing controls over the company's procedures discussed in subpart (a) of this paragraph, or performing procedures to otherwise obtain evidence about the reliability of such information (which may be done in conjunction with other procedures to respond to the assessed risks of material misstatement). The auditor may not be able to evaluate the completeness and accuracy of information obtained from an external source to the same degree as the auditor would evaluate the completeness and accuracy of information produced by the company as contemplated by paragraph .10.

^{3B} For example, information regarding a purchase order submitted to the company by a customer or regarding cash received by the company from a customer as payment for an invoice.

^{3C} For example, auditors may obtain interest rate information from the US Department of Treasury, which provides statistics specifically relating to daily treasury yield curve rates, daily treasury real yield curve rates, daily treasury bill rates, daily treasury long-term rates and extrapolation factors, and daily treasury real long-term rate averages.



AS 2301, The Auditor's Responses to the Risks of Material Misstatement

Substantive Procedures

- .37A When the auditor establishes and uses criteria to identify items for further investigation,^{17A} as part of designing or performing substantive procedures, the auditor's investigation should consider whether the identified items:
- a. Provide audit evidence that contradicts the evidence on which the original risk assessment was based;
 - b. Indicate a previously unidentified risk of material misstatement;
 - c. Represent a misstatement or indicate a deficiency in the design or operating effectiveness of a control; or
 - d. Otherwise indicate a need to modify the auditor's risk assessment or planned audit procedures.

Note 1: Inquiring of management may assist the auditor with this consideration. The auditor should obtain audit evidence to evaluate the appropriateness of management's responses.

Note 2: The nature, timing, and extent of procedures for investigating the identified items is a matter of professional judgment and depends on factors such as the materiality of the identified items, including whether they are clearly trivial, and whether it is possible to investigate items in the aggregate (e.g., because they represent a homogeneous population).

^{17A} For example, an auditor may identify balances or transactions that contain a certain characteristic or that are valued outside of a range.