

PROPOSED REVISED INTERNATIONAL STANDARD ON AUDITING 540**AUDITING ACCOUNTING ESTIMATES AND RELATED DISCLOSURES
(EXCLUDING THOSE INVOLVING FAIR VALUE MEASUREMENTS AND
DISCLOSURES)****CONTENTS**

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International Standard on Auditing (ISA) 540, “Auditing Accounting Estimates and Related Disclosures” should be read in the context of the “Preface to the International Standards on Quality Control, Auditing, Assurance and Related Services,” which sets out the application and authority of ISAs.

Introduction

1. The purpose of this International Standard on Auditing (ISA) is to establish standards and provide guidance on auditing accounting estimates and related disclosures, excluding those involving fair value measurements and disclosures. An “accounting estimate” is an approximation of a monetary amount in the absence of a precise means of measurement, and this term is used to describe items presented on the face of a financial statement or in notes to the financial statements. Accounting estimates may be required of, for example:
 - Bad debts.
 - Inventory obsolescence.
 - Warranty obligations.
 - Environmental remediation costs.
2. Some financial reporting frameworks require certain assets, liabilities or specific components of equity to be measured at fair value and recognized or disclosed in financial statements. ISA 545, “Auditing Fair Value Measurements and Disclosures” provides standards and guidance on auditing accounting estimates involving fair value measurements.
3. **The auditor should obtain sufficient appropriate audit evidence that accounting estimates are appropriately measured, and recognized or disclosed in the financial statements in accordance with the entity’s applicable financial reporting framework and are reasonable.**
4. The criteria for recognition in many financial reporting frameworks are:
 - (a) It is probable that any future benefit associated with the item will flow to or from the entity; and
 - (b) The item has a cost or value that can be measured reliably.

As a result of the uncertainties inherent in business activities some financial statement items cannot be measured with precision and need to be estimated for financial reporting purposes. The use of reasonable accounting estimates is an essential part of the preparation of financial statements and does not undermine their reliability. Where accounting estimates cannot be measured reliably they are not recognized in the balance sheet or income statement. However, many financial reporting frameworks require disclosures concerning such accounting estimates to be made in the notes to the financial statements.

5. Management is responsible for making accounting estimates and, where necessary, establishing financial reporting processes, including adequate controls, for measuring accounting estimates. Such processes include selecting appropriate accounting policies and prescribing estimation methods, developing assumptions about future conditions, transactions or events that affect accounting estimates, periodically reviewing the circumstances that give rise to the accounting estimates and re-estimating them as necessary.
6. Management is also responsible for accounting for changes to accounting estimates that arise from changes occurring in the circumstances on which an accounting estimate was based or as a

result of new information or more experience. Many financial reporting frameworks recognize that such a revision of an accounting estimate does not relate to prior periods and is not the correction of an error.

7. The focus of the auditor's work is on establishing whether management has met the requirements of the applicable financial reporting framework and evaluating whether accounting estimates are reasonable. Financial reporting frameworks do not always specify the precise way in which an accounting estimate should be measured; indeed many acknowledge the use of "reasonable estimates". In such circumstances the requirement for the auditor to establish whether an accounting estimate is measured in accordance with the applicable financial reporting framework also involves the auditor in evaluating whether an accounting estimate is reasonable.
8. Financial reporting frameworks often call for a quality of neutrality, that is, freedom from bias. However, estimation processes are usually imprecise and there is a risk that management may be motivated to achieve a predetermined result and allow their accounting estimates to be biased. The auditor is, therefore, alert for evidence that management's accounting estimates may be biased.

Risk Assessment Procedures

9. As required by ISA 315, "Understanding the Entity and its Environment and Assessing the Risks of Material Misstatement", the auditor obtains a sufficient understanding of the entity and its environment, including its internal control, to identify and assess the risks of material misstatement of the financial statements whether due to fraud or error, and sufficient to design and perform further procedures. Obtaining this understanding by performing risk assessment procedures calls for a continuous, dynamic process of gathering, updating and analyzing information throughout the audit.
10. **The auditor should perform risk assessment procedures to identify accounting estimates for which there is a risk of material misstatement, by obtaining an understanding of:**
 - (a) **How management identifies those transactions, events and conditions that may give rise to accounting estimates which are susceptible to material misstatement in the financial statements;**
 - (b) **The methods and related controls prescribed by management for making significant accounting estimates including supporting and documenting significant assumptions underlying them and where appropriate determining a range of reasonably possible outcomes; and**
 - (c) **The relevant requirements of the entity's financial reporting framework.**
11. Management's processes for identifying those transactions, events and conditions that may give rise to accounting estimates susceptible to material misstatement will depend on the nature of the entity and the requirements of the applicable financial reporting framework. In some cases, these processes may be formal and complex because the entity is required to estimate many financial statement items on a regular basis. In other cases, for example in some small entities

where accounting estimates are less prevalent, there may be little need to formalize the processes. In all cases, circumstances may arise that require management to respond to a condition or event for which an accounting estimate is required.

12. An entity may engage in new types of transactions or there may be changes in the terms of transactions that gave rise to accounting estimates. Especially in entities having many accounting estimates, management's control activities need to include a follow-up of the outcome, or subsequent re-estimation, of accounting estimates made in a prior period.
13. An important feature of internal control in the context of accounting estimates is the control environment, especially when accounting estimates are heavily influenced by management's attitudes and motivations, and predicated on judgments about the future. In some cases, there may be few control activities in place to address accounting estimates, for example, there may be few controls in place for addressing an unforeseen large legal claim, other than possibly a management policy for timely referral of such a claim to appropriate legal counsel. Where accounting estimates are of a routine or recurring nature, there need to be adequate controls over the data and information for calculating the estimates on a timely basis. Past experience of the entity in dealing with accounting estimates may be relevant to the auditor's view of internal control.
14. There is a risk that management fails to follow the courses of action that it had indicated it intended to. The extent of this risk can sometimes be identified by the auditor considering whether a difference between an accounting estimate made in a prior period and the later actual outcome (or re-estimation), arose either because of factors that management could have influenced or because of changes in assumptions that were outside the influence of management. The ability of management to forecast the outcome of uncertain future conditions, transactions or events for an accounting estimate can usually be evaluated by the auditor only in light of experience with such forecasts made by management in similar circumstances in the past. Consequently, the effectiveness of management's monitoring activities for following up the outcome, or subsequently re-estimating, significant accounting estimates made in a prior period is important to the auditor's understanding of management's processes and methodologies.
15. **The auditor should review the outcome, or re-estimation, of significant accounting estimates made in prior periods.**
16. The purpose of reviewing the outcome or re-estimation of significant accounting estimates made in prior periods is to:
 - (a) Provide qualitative evidence of the effectiveness of management's estimation processes in prior periods which may be indicative of the likely effectiveness of management's processes in the current period; and
 - (b) Provide audit evidence that is pertinent to the re-estimation of accounting estimates made in prior periods.

17. Ordinarily, changes in accounting estimates result from new information or new developments and, accordingly, are not correction of errors. In rare circumstances estimates are revised because of errors made in a prior period. Prior period errors can be distinguished from changes in accounting estimates because they arise from a failure to use, or misuse of, reliable information that:

- (a) Was available to management as of the completion date of the audit; and
- (b) Could reasonably be expected to have been obtained and taken into account in the preparation and presentation of those financial statements.

Such errors include the effects of mathematical mistakes, mistakes in applying accounting policies, oversights or misinterpretation of facts, and fraud. Many accounting frameworks contain guidance concerning distinguishing between changes in accounting estimates and errors.

18. The auditor's procedures are usually carried out in conjunction with the retrospective review of significant accounting estimates described in paragraph 80(b) of ISA 240, "The Auditor's Responsibility to Consider Fraud in an Audit of Financial Statements". The nature, timing and extent of the audit procedures undertaken is a matter of professional judgment. The auditor may decide to perform these procedures in interim periods.

METHODS AND ASSUMPTIONS USED IN MAKING ACCOUNTING ESTIMATES

19. Management prescribes the methods for making accounting estimates in a number of ways. It selects the policies for the entity to follow for significant estimates, consistent with the applicable accounting framework, and implements internal control procedures. It defines its own role and involvement with significant assumptions, subject in some cases to oversight by those charged with governance of the entity. Management may engage an expert having special skill, knowledge and experience in the methods or assumptions relevant to a particular accounting estimate. Where management relies upon the work of the expert with respect to the making of assumptions, the auditor regards the expert's assumptions as being those of management.
20. Recognition is the process of incorporating in the balance sheet or income statement those assets, liabilities, income or expenses that satisfy the criteria for recognition set out in the applicable financial reporting framework. Financial reporting frameworks require items that satisfy the recognition criteria to be recognized in the balance sheet or income statement. A failure to recognize such items is not rectified by disclosure of accounting policies used or by notes to the financial statements.
21. When an accounting estimate is recognized in financial statements management determines a single monetary amount representing its judgment about the most likely outcome of the uncertain future conditions, transactions or events that led it to make the accounting estimate. Such single monetary amounts are referred to as "best" estimates. In some cases there is likely to be a range of outcomes from which management is able to select a reasonable estimate to be the best estimate. Ranges of outcomes are discussed in more detail in paragraphs 54 to 57 under the heading "Responses to Significant Risks".

22. Measurement reliability is the susceptibility of a financial statement item to a lack of precision in its calculation because the outcome of future events is not known. The measurement reliability associated with different accounting estimates varies with the circumstances affecting them. Some circumstances that may give rise to lower measurement reliability are:
- The absence of measurement techniques for making precise estimations.
 - The extent to which the accuracy of an accounting estimate depends upon management's judgment about the outcome of uncertain future conditions, transactions or events.
 - The sensitivity of the accounting estimates to assumptions that are outside management's control.
23. To obtain an understanding of management's methods for determining accounting estimates, the auditor considers, for example:
- The types of accounts or transactions to which the accounting estimates relate (for example, whether the estimates arise from the recording of routine and recurring transactions or whether they arise from non-recurring or unusual transactions).
 - The experience and competence of those involved in determining the accounting estimates.
 - The extent to which management uses experts within or outside the entity.
 - How management ensures that the data used to develop accounting estimates are complete, relevant and accurate.
 - How management determines the range of outcomes, including how they evaluated whether there are some outcomes that are more likely than others or whether each outcome is as likely as any other.
 - How management determines the best estimate of the most likely outcome from the range of outcomes.
24. Accounting estimates may be determined as part of a continuing routine accounting system, or through a non-routine exercise at period end. Methods may differ among entities making similar accounting estimates. Methods used by smaller entities may be effective without being complex or formalized, though sometimes smaller entities may experience difficult and complex accounting estimates requiring specialized methods. Smaller entities sometimes engage outside experts to assist in making accounting estimates, while larger entities may employ experts internally.
25. Some aspects of an entity's internal control may influence the risk of material misstatements. Relevant aspects of internal control over accounting estimates include:
- Procedures for the accumulation of reliable underlying data on which to base an accounting estimate.
 - Assignment of qualified personnel to prepare accounting estimates.
 - Policies for the review and approval of accounting estimates by appropriate levels of management and, where appropriate, those charged with governance. This may include:

- Review of the significant assumptions used. Generally significant assumptions cover matters that materially affect the measurement of the accounting estimate and may include those that are:
 - Sensitive to variation or uncertainty in amount or nature. For example, assumptions about short-term interest rates may be less susceptible to significant variation compared to assumptions about long-term interest rates.
 - Susceptible to misapplication or bias.
 - Consideration of the need to use the work of experts.
 - Consideration of changes in previously established methods to arrive at accounting estimates.
 - Evaluation of the propriety of disclosures in the financial statements.
26. The auditor considers the sensitivity of the accounting estimate to changes in significant assumptions. Where applicable, the auditor encourages management to use such techniques as sensitivity analysis to help identify particularly sensitive assumptions. In the absence of such management analysis, the auditor considers whether to employ such techniques.
27. In developing accounting estimates, management often makes assumptions about uncertain future events and conditions, including matters within and outside its control. To provide an appropriate basis for accounting estimates, interdependent assumptions need to be consistent. A particular assumption that may appear reasonable when taken in isolation may not be reasonable when used in conjunction with other assumptions.
28. The auditor obtains an understanding of the assumptions underlying accounting estimates. Assumptions usually are required to support accounting estimates that are highly dependent upon management's judgment about the outcome of uncertain future conditions, transactions or events. The auditor also obtains an understanding of how management ensures that assumptions are consistent and where applicable, appropriately reflect management's intent.

UNDERSTANDING THE REQUIREMENTS OF THE FINANCIAL REPORTING FRAMEWORK

29. Some financial reporting frameworks require the disclosure of the estimation methods management used to make certain accounting estimates. In most instances, the monetary amount estimated for a financial statement item falls within a relatively narrow range of possible outcomes. In that case no disclosure of management's estimation methods is usually required. Certain estimated monetary amounts may be so sensitive to changes in assumptions or circumstances that the use of different assumptions could materially affect an amount recognized in the entity's financial statements. In such circumstances, financial reporting frameworks may require the disclosure of the estimation methods, including details of the underlying assumptions to which the monetary amount is particularly sensitive.
30. The range of reasonably possible outcomes may be so wide that a reliable estimate cannot be made. In such instances, the financial reporting framework often provides that an accounting estimate is not recognized in the financial statements, but the nature of the item, and possibly

information about the range of reasonably possible outcomes, is disclosed in the notes to the financial statements. In addition, financial reporting frameworks in some cases also provide for disclosure about accounting estimates that are recognized in the financial statements.

31. Some financial reporting frameworks require or permit disclosures that enable users of financial statements to understand the judgments that management has made about the future and the assumptions underlying accounting estimates. Some types of disclosures are:
- The nature of the assumptions or extent of measurement reliability.
 - The sensitivity of the accounting estimates to the methods and assumptions underlying their calculation, including the reasons for the sensitivity and the effect of changes in selected assumptions.
 - Management's views about the expected resolution of an uncertainty, the range of reasonably possible outcomes, including the effect on the accounting estimate and the financial statements.
 - An explanation of changes made in assumptions made in prior periods.

Assessment of the Risks of Material Misstatement

32. **Based on the information gathered from the risk assessment procedures, the auditor should identify and assess the risks of material misstatement for accounting estimates at the financial statement level and at the assertion level.**
33. The auditor's assessment of the risk of material misstatement takes into account:
- (a) The identified accounting estimates and what can go wrong at the assertion level, the significance of the accounting estimate, and the likelihood that the risks could result in a material misstatement;
 - (b) The auditor's evaluation of whether the degree of measurement reliability of an accounting estimate gives rise to a significant risk; and
 - (c) The extent to which the historical experience of management in making accounting estimates in prior periods may be indicative of the likely outcome of similar estimates made in the current period.
34. **The auditor should determine which, if any, of the risks identified give rise to low measurement reliability and are therefore significant risks, arising from:**
- (a) **A wide range of possible outcomes;**
 - (b) **Not being capable of being calculated from generally accepted methodologies;**
 - (c) **Weak internal controls over relevant systems;**
 - (d) **Historical experience of the entity not being indicative of the outcome of the item being estimated; or**
 - (e) **Any other factors that the auditor considers to be important.**

35. Making the assessment and determination required by paragraphs 32 and 34, enables the auditor to classify accounting estimates with risks of material misstatement in one of the following three categories:

Category A – High Measurement Reliability Accounting estimates where the measurement is highly reliable and therefore does not give rise to a significant risk. In this case the risk of material misstatement arises primarily from the significance of the monetary amount of the accounting estimate recognized in the financial statements.

Category B – Low Measurement Reliability Accounting estimates where a wide range of possible outcomes gives rise to a significant risk. In this case the risk of material misstatement arises from the potential for a different measurement of the accounting estimate recognized in the financial statements, rather than from the significance of the monetary amount of the estimate. ISA 315 discusses those risks of material misstatement that require special audit consideration and are, therefore, significant risks. ISA 330, “The Auditor’s Procedures in Response to Assessed Risks” discusses the consequences of the existence of a significant risk.

Category C – Reliable measurement not possible Accounting estimates where the measurement is not sufficiently reliable to meet the recognition criteria of the applicable financial reporting framework.

Appendix 1 provides further description of illustrative characteristics of each of these categories and provides illustrative examples of each.

Responses to the Risks of Material Misstatement

36. **The auditor should design and perform further audit procedures whose nature, timing and extent are responsive to the assessed risks of material misstatement of accounting estimates at the financial statement level and at the assertion level.**
37. This paragraph provides an overview of the Standards and guidance included in paragraphs 38 to 77 of this ISA that address the auditor’s response to the risks of material misstatement of accounting estimates:
- (a) Overall responses at the financial statement level are discussed in paragraphs 38 to 40.
 - (b) Required audit procedures responsive to the risks of material misstatement at the assertion level:
 - i. Events between period end and the date of the auditor’s report (Paragraphs 41 and 42).
 - (c) Other audit procedures responsive to the risks of material misstatement at the assertion level where subsequent events, that confirm an accounting estimate, have not occurred.
 - i. Testing the process used to develop the accounting estimate (Paragraphs 43 to 48).
 - ii. Making an independent estimate (Paragraphs 49 to 51).
 - (d) Responses to significant risks:

- i. Evaluating the design of controls relating to the accounting estimate, including relevant control activities and determining whether they have been implemented (Paragraph 53).
- ii. Obtaining the evidence about the operating effectiveness of internal controls that the auditor plans to rely on, from tests of controls performed in the current period (Paragraph 53).
- iii. Performing substantive procedures that specifically respond to the significant risk (Paragraphs 54 to 77).

OVERALL RESPONSES AT THE FINANCIAL STATEMENT LEVEL

38. Responses at the financial statement level that have an overall effect on how the audit is conducted may include:
- The impact of the assessed risk of material misstatement at the overall financial statement level on direction, supervision and review.
 - Emphasizing to the audit team the need to maintain a questioning mind and to exercise professional skepticism in gathering and evaluating audit evidence.
 - The selection of the engagement team, including where appropriate the engagement quality control reviewer.
 - The assignment of appropriately experienced team members.
 - Using experts.
39. **The auditor should determine the need to use the work of an expert.** The auditor may have the necessary skill and knowledge to plan and perform audit procedures related to accounting estimates or may decide to use the work of an expert. In making such a determination, the auditor considers the matters discussed in paragraph 7 of ISA 620, “Using the work of an expert”.
40. If the use of such an expert is planned, the auditor obtains sufficient appropriate audit evidence that such work is adequate for the purposes of the audit, and complies with the requirements of ISA 620.

RESPONSES AT THE ASSERTION LEVEL

41. **For accounting estimates that the auditor has identified and assessed as having risks of material misstatement, the auditor should determine whether events occurring between period end and the date of the auditor’s report confirm the accounting estimate made. If such confirming events have not occurred the auditor should use professional judgment in deciding which of the following approaches to adopt:**
- (a) **Testing the operating effectiveness of the process used to develop the accounting estimate and the data used to develop it;**
 - (b) **Making an independent estimate for comparison with management’s; and**
 - (c) **A combination of (a) and (b).**

Events between period end and the date of the auditor's report

42. Transactions and events that occur after the period end, but prior to completion of the audit, may provide persuasive audit evidence regarding an accounting estimate. To the extent that such events confirm the accounting estimate made, they may remove the need to either test the operating effectiveness of the process used to develop the accounting estimate or to make an independent estimate to assess the reasonableness of the accounting estimate. For example, a partial sale of inventory of a superseded product, shortly after the period end, may provide audit evidence relating to the estimate of the net realizable value of the entire inventory of the superseded product. The auditor exercises caution, however, when evaluating whether that evidence is sufficiently persuasive to confirm an accounting estimate. The partial sale may have been made to the only remaining customer for the product and the quantity sold may reflect the entire expected future demand for the product. The amount realized on the partial sale, therefore, may not be indicative of the likely recovery from the remaining inventory.

Testing the Process Used to Develop the Accounting Estimate

43. Evaluating how management (or an expert on behalf of management) developed the accounting estimate is likely to be an appropriate response when, for example:
- The accounting estimate is derived from the routine processing of data by the entity's accounting system, the entity's controls over such processing are strong and the auditor has tested the data used to develop the accounting estimate.
 - The historical experience of the entity in making estimates of a similar nature is likely to be indicative of the final outcome of the item being estimated.
 - The accounting estimate is based on a large population of items of a similar nature that individually are not significant.
44. Based on the understanding gained of the entity's internal control, including its control environment, the methods used by management to make accounting estimates and the assumptions underlying the estimates, the auditor considers the effect of the following on the nature, timing and extent of audit procedures to evaluate management's process:
- (a) Whether management's process is likely to give rise to a reasonable estimate;
 - (b) Whether employees making the accounting estimates are competent and whether management has an incentive and opportunity to override controls over estimates made by subordinates; and
 - (c) Whether the risk assessment leads the auditor to expect that controls are operating effectively.
45. When the auditor's assessment of risks of material misstatement at the assertion level is based on an expectation that controls over the process are operating effectively, ISA 330 requires the auditor to obtain audit evidence about the operating effectiveness of those controls.
46. The greater the judgment needed to be applied to make an accounting estimate; the less likelihood there is that control activities will be effective in preventing, detecting or correcting material misstatements in the accounting estimate. Possible reasons include:

- The risk of management overriding control activities.
 - The nature of non-routine or unusual transactions that pose difficulties in designing and implementing effective control activities.
47. The auditor's substantive procedures performed in response to the related assessment of the risk of material misstatement include testing whether the data on which the accounting estimate is based, including data used in the work of an expert, is accurate, complete and relevant, and whether that data was properly used in determining the accounting estimate. The auditor's substantive procedures may also include verifying the source of the data, mathematical re-computing, and reviewing information for internal consistency.
48. The auditor's testing of the operating effectiveness of the process used to develop an accounting estimate may suggest or establish that its reliability is highly dependent on management's assumptions, or that the accounting estimate is management's best estimate from a wide range of reasonably possible outcomes. The existence of a wide range of possible outcomes may indicate that an accounting estimate gives rise to a significant risk. Additional responses to significant risks are described in paragraphs 52 to 77.

Making an Independent Estimate

49. Making an independent estimate (for example by using an auditor-developed model) to compare with management's estimate is likely to be an appropriate response when, for example:
- An accounting estimate is not derived from the routine processing of data by the accounting system.
 - The historical experience of the entity in developing estimates is unlikely to be relevant to a particular accounting estimate.
 - The entity's controls within and over management's processes for determining accounting estimates are not well designed or properly implemented (as may be the case, for example, for non-recurring or unusual accounting estimates).
50. Although the auditor may develop separate assumptions to compare with management's accounting estimate the auditor still obtains an understanding of management's assumptions. The auditor uses that understanding to evaluate whether the auditor's model considers the significant variables and any significant difference from management's accounting estimate.
51. Making an independent estimate may reveal that the reliability of an accounting estimate is highly dependent on assumptions or that a best estimate has to be determined from a wide range of reasonably possible outcomes. This would indicate that the accounting estimate may give rise to a significant risk. Additional responses to significant risks are described in paragraphs 52 to 77.

Responses to Significant Risks

52. Accounting estimates in categories B or C, described in paragraph 35 give rise to significant risks. Management may have identified these risks and responded to them by designing and implementing controls to address them.

53. **For accounting estimates that give rise to significant risks the auditor should, in addition to the requirements of paragraph 41:**
- (a) **To the extent not already done, evaluate the design of the entity's controls, including relevant control procedures, and determine whether they have been implemented. Such an evaluation should be performed even where events occurring between period end and the date of the auditor's report confirm the accounting estimate made and where the auditor has made an independent estimate for comparison with management's;**
 - (b) **Obtain the audit evidence about the operating effectiveness of internal controls, that the auditor plans to rely on, from tests of control performed in the current period. Such audit evidence should be obtained only when the auditor has adopted an approach of testing the operating effectiveness of the process used to develop the accounting estimate; and**
 - (c) **Perform substantive procedures that specifically respond to the significant risks. Such procedures should, where appropriate, include those set out in paragraphs 60, 68, 71 and 75 of this ISA.**
54. With respect to accounting estimates that fall in categories B or C, management may have developed a range of reasonably possible outcomes within which it believes an accounting estimate will fall. This is particularly likely where the entity's financial reporting framework requires the consideration of ranges and possibly disclosures relating to ranges of reasonably possible outcomes. Once a range of reasonably possible outcomes has been established, management undertakes an analysis to determine a best estimate, within the range, to be recognized in the financial statements. Such an analysis may involve the assignment of probabilities to the likelihood of possible outcomes within the range.
55. Management may conclude from their analysis that no amount in the range is more likely than any other amount, and that, therefore, the range consists of a continuous range of "reasonably and equally possible outcomes". In such circumstances some financial reporting frameworks indicate that the accounting estimate should be the mid-point of the range.
56. When the range of reasonably and equally possible outcomes is very wide, it may not be possible to make a reasonable estimate. In such circumstances, it is likely that the financial reporting framework would not permit an estimate to be recognized in the financial statements and the accounting estimate would fall into category C.
57. The auditor's substantive procedures in response to significant risks will depend upon the particular circumstances of the accounting estimate. Where management has made its accounting estimate with reference to a range of reasonably possible outcomes the auditor's response is likely to include evaluating the reasonableness of management's assumptions in determining the range of reasonably possible outcomes, and how management determined the accounting estimate from the range.

58. Where management has determined a best estimate without establishing a range of reasonably possible outcomes, because for example management decided that a particular outcome was probable, the auditor's response is likely to include evaluating the reasonableness of management's assumptions. The auditor evaluates management's support for the accounting estimate, and may conclude that the evidence supports management's view.
59. Where the auditor concludes that the evidence does not support management's view this ISA requires the auditor to independently develop (with or without using the work of an expert) a range of reasonably possible outcomes and to evaluate the likelihood of possible outcomes occurring. The auditor then evaluates the reasonableness of management's estimate in relation to the range developed by the auditor and the auditor's probability assessments concerning the possible outcomes.

EVALUATING THE REASONABLENESS OF MANAGEMENT'S ASSUMPTIONS

60. **For accounting estimates that give rise to significant risks, the auditor should evaluate whether the significant assumptions made by management, taken individually, and as a whole provide a reasonable basis for the accounting estimates and related disclosures in the entity's financial statements.**
61. In developing accounting estimates, management makes assumptions about matters both within and outside its control. Examples of assumptions outside the control of management include, interest rates, exchange rates, mortality and morbidity rates (for example, relating to a particular population of insurance policy holders) and inflation rates.
62. Because the making of assumptions involves predicting the future they are inherently uncertain. This is especially so when they relate to when (or whether) events or conditions are going to occur, or when they relate to events or conditions that may exist far into the future. Information to support assumptions on such matters as the likely direction of interest rates and securities prices is sometimes available from reputable external sources.
63. Assumptions about matters that management is able to control include, for example, the population of employees that are expected to be terminated as a result of a personnel redundancy program, or the timing and duration of such a program. Management also may decide to initiate a plan of asset sales to eliminate, for example, a particular type of product line; and management controls the process by soliciting bids, negotiating the terms of transactions and other actions to accomplish the plan. In some cases management needs to consider the circumstances of the entity, such as pre-existing contractual commitments or restrictions imposed by law or regulation. Those charged with governance may be involved in authorizing specific actions depending on the significance of the actions management proposes to take, and the authority delegated to management.
64. Management's support for accounting estimates comes from the entity's information systems and its continuing processes of strategic analysis and risk management. Even if the entity does not have formalized processes the auditor may be able to evaluate the assumptions through inquiries of management and further corroborative procedures.

65. The auditor considers the assumptions, collectively and individually, in evaluating whether the assumptions reasonably support the accounting estimates. Assumptions are frequently interdependent, and, therefore, need to be internally consistent. A particular assumption that may appear reasonable when taken in isolation may not be reasonable when used in conjunction with other assumptions. Assumptions made by an expert used by management to assist in making accounting estimates are treated as though they were management's.
66. An accounting estimate often reflects management's intent to carry out courses of action relevant to the accounting estimate. Management often documents plans and intentions relevant to specific assets or liabilities and the financial reporting framework may require it to do so. While the extent of audit evidence to be obtained about management's intent is a matter of professional judgment, the auditor's procedures usually include:
- Considering management's past history of carrying out its stated intentions.
 - Reviewing written plans and other documentation, including, where applicable, budgets, minutes, etc.
 - Considering management's stated reasons for a particular course of action.
 - Considering management's ability to carry out a particular course of action given the entity's economic circumstances, including the implications of its existing commitments.
 - Obtaining appropriate representations from management.
67. The auditor's consideration of management's assumptions is based on information available to the auditor. The auditor is not responsible for predicting future conditions, transactions or events that, if known at the time of the audit, might have significantly affected management's actions or management's assumptions underlying the accounting estimates and disclosures.

MANAGEMENT DETERMINES AN ACCOUNTING ESTIMATE FROM A RANGE OF REASONABLY POSSIBLE OUTCOMES

68. **For accounting estimates that give rise to significant risks, where management has determined an accounting estimate from a range of reasonably possible outcomes the auditor should evaluate how management determined the best estimate from within the range.**
69. Management is responsible for supporting how it has selected an accounting estimate from a range of reasonably possible outcomes. If the auditor believes that, based on audit procedures undertaken and an evaluation of management's process management has not adequately supported the accounting estimate, the auditor requests management to perform other procedures and provide persuasive evidence to provide the necessary support. Management may need to engage an expert to assist in obtaining the support, or management may need to perform analysis of data or obtain information from industry or other sources to support its view.
70. Where there is a wide range of reasonably possible outcomes, there may not be an outcome in the range with a sufficiently high probability to justify being the single best estimate. In such

circumstances, management chooses an accounting estimate from the range of reasonably possible outcomes. Financial reporting frameworks suggest various ways to determine the best estimate. For example, the best estimate may be derived by weighting all possible outcomes according to their probabilities. This method of estimation is sometimes referred to as “expected value” and often it is applied to a large population of data.

THE AUDITOR INDEPENDENTLY DEVELOPS A RANGE OF REASONABLY POSSIBLE OUTCOMES

71. **For accounting estimates that give rise to significant risks, where management has not adequately supported a best estimate, the auditor should independently develop a range of reasonably possible outcomes and evaluate the likelihood of possible outcomes occurring. The auditor should evaluate the reasonableness of management’s accounting estimate in relation to the auditor-determined range.**
72. The auditor can independently develop a range of reasonably possible outcomes in a number of ways. In some cases, the auditor may use a model, proprietary or commercial, to which the auditor may introduce entity-specific data. The auditor may employ or engage an expert with specialized expertise to develop or execute the model or to provide relevant assumptions. In some cases, the auditor’s model contains assumptions used by management that the auditor deems appropriate, while in other cases all assumptions are unique to the auditor’s model. A sensitivity analysis involves evaluating the effect on an accounting estimate of varying an assumption (within the parameters of supportable premises) while maintaining other assumptions constant. For example, an accounting estimate may be based on an assumed future exchange rate between two currencies. A sensitivity analysis involves calculating the effect on the accounting estimate of changes in the exchange rate from the assumed rate. The range of reasonably possible outcomes, therefore, varies according to the assumptions used.
73. In determining a range of reasonably possible outcomes, the auditor takes into account considerations similar to those that apply to the making of an independent accounting estimate. If, for example, management’s best estimate is not within the auditor’s range of reasonably possible outcomes, the auditor seeks to understand the reasons why.
74. The auditor may conclude that management’s accounting estimate is adequately supported and, therefore, reasonable in the circumstances. Alternatively, the auditor may conclude that the evidence points to an estimate that is other than management’s estimate, and that the difference between the auditor’s estimate and management’s estimate constitutes a financial statement misstatement (see paragraphs 78 to 89).

EVALUATING THE RELIABILITY OF THE MEASUREMENT OF THE ACCOUNTING ESTIMATE

75. **For significant risks the auditor should evaluate whether the audit evidence obtained is sufficient to support management’s judgments about whether the measurement of the accounting estimate is sufficiently reliable to recognize the accounting estimate.**
76. Management may conclude that it is unable to make an accounting estimate whose measurement is sufficiently reliable to meet the recognition criteria. In such circumstances, it may be appropriate under the applicable financial reporting framework to disclose information about the

item in the notes to the financial statements, including in some cases information about the range of possible outcomes. For example, if the validity and amount of a claim for damages under a legal action are disputed, it may be inappropriate for the entity to recognize a liability for the claim. However, it may be appropriate to disclose the circumstances of the claim in the notes to the financial statements, including possibly the amount of the claim or the range of exposure to loss.

77. The auditor evaluates whether the audit evidence obtained is sufficient to support management's judgments about whether the recognition of an accounting estimate is appropriate. If management has recognized an accounting estimate in the financial statements, the auditor evaluates whether the measurement of the accounting estimate is sufficiently reliable to meet the recognition criteria of the applicable financial reporting framework. The auditor also evaluates whether the measurement of an accounting estimate that has not been recognized is not sufficiently reliable to meet the recognition criteria of the applicable financial reporting framework. With respect to accounting estimates that have not been recognized the auditor considers the adequacy of the disclosures in the notes to the financial statements and whether the auditor's report needs to be modified by adding an emphasis of matter paragraph. ISA 700 "The Auditor's Report on Financial Statements" provides standards and guidance concerning such paragraphs.

Evaluating Audit Evidence and Determining Misstatements

78. **The auditor should evaluate the sufficiency and appropriateness of the audit evidence with a view to determining whether the accounting estimates are appropriately measured, and recognized or disclosed in accordance with the entity's applicable financial reporting framework and are reasonable, or whether any are misstated.**
79. This ISA provides Standards and guidance relating to the auditor's determination and documentation of misstatements relating to accounting estimates. However, standards and guidance relating to the auditor's evaluation of misstatements relating to accounting estimates are not provided in this ISA. [Proposed revised] ISA 320, "Materiality in the Identification and Evaluation of Misstatements" provides standards and guidance on the auditor's evaluation of the effect on the financial statements of all misstatements identified during the audit, including those relating to accounting estimates.
80. [Proposed revised] ISA 320 distinguishes between the following categories of misstatements:
- (a) Known misstatements;
 - (i) Misstatements of fact;
 - (ii) Misstatements involving subjective decisions; and
 - (b) Likely misstatements.

The following paragraphs provide guidance to assist the auditor to classify misstatements relating to accounting estimates.

KNOWN MISSTATEMENTS – MISSTATEMENTS OF FACT

81. A misstatement of fact relating to an accounting estimate arises when the auditor obtains conclusive audit evidence that in making an accounting estimate management has:
- (a) Made mistakes in the gathering or processing of data;
 - (b) Not followed the requirements of the applicable financial reporting framework; or
 - (c) Misinterpreted or overlooked facts.

KNOWN MISSTATEMENTS - MISSTATEMENTS INVOLVING SUBJECTIVE DECISIONS

82. A misstatement involving subjective decisions arises from differences between management's and the auditor's judgment concerning the reasonableness of accounting estimates. Such misstatements contrast with misstatements of fact because the audit evidence is persuasive rather than conclusive.
83. The auditor may have independently developed a range of reasonably possible outcomes with which to evaluate the reasonableness of management's accounting estimate. If the auditor is able to make a probability assessment concerning the likelihood of possible outcomes within the range then the auditor may be able to determine an amount within the range that is the most likely outcome. The way in which the most likely outcome is determined is a matter of auditor judgment. For example the auditor might determine that the best estimate is the amount within the range having the highest probability of being the actual outcome. Another approach to determine the best estimate may be the expected value method described in paragraph 70. The known misstatement involving subjective decision is the difference between management's accounting estimate and the auditor's best estimate.
84. If the auditor is unable to make a probability assessment concerning the likelihood of possible outcomes, the auditor presumes that each possible outcome is equally likely to occur. Where each possible outcome within the auditor-developed range is equally likely, the auditor concludes that an accounting estimate is not misstated if it falls within the range and the location of the accounting estimate within the range has not changed from period to period (see examples 1 and 2 in Appendix 2). In this case the auditor determined range is described as being of reasonably and equally possible outcomes.
85. If management's accounting estimate lies outside a range of auditor determined reasonably and equally possible outcomes there is a known misstatement involving subjective decisions of, at least, the difference between management's accounting estimate and the nearest point of the range of auditor determined reasonably and equally possible outcomes (see examples 3 and 4 in Appendix 2).

Changes in location of accounting estimates within the range from one period to another

86. As described in paragraph 84 the auditor does not consider an accounting estimate to be misstated if it falls within the range of reasonably and equally possible outcomes and the location of the estimate, within the range, has not changed from period to period. An accounting estimate is misstated if, without good reason, the location of the accounting estimate within the range moves from one period to another.

87. For example, management may change from recognizing a warranty liability from the mid point of the range to the low end of the range. In order for users to be able to compare the financial statements of an entity many financial reporting frameworks require the measurement of the financial effect of like transactions to be made in a consistent way over time. The result of moving an accounting estimate within the range in this way would mean that the financial statements were inconsistent over time in that recognized income would increase without any corresponding improvement in the underlying quality of the entity's earnings.
88. In this example, the misstatement would be measured as the difference between the accounting estimate made by management and what the accounting estimate would have been if management had used the same location in the range of reasonably and equally possible outcomes that they had used in the previous period.

LIKELY MISSTATEMENTS

89. These are misstatements that the auditor considers likely to exist based on an extrapolation from audit evidence obtained. For example, the amount obtained by projecting known misstatements identified in an audit sample to the entire population from which the sample was drawn. Audit evidence relating to accounting estimates may give rise to likely misstatements when the auditor finds sampling errors when testing the data underlying an accounting estimate.

Indicators of Bias

90. **The auditor should evaluate whether there is any audit evidence indicating bias in the making of accounting estimates. Where there is evidence of bias the auditor should quantify the bias.**
91. As described in paragraph 84, when considered individually, an accounting estimate is not misstated if it falls within a range of reasonably possible outcomes. Within any constraints imposed by the applicable financial reporting framework, management has the ability to choose where an accounting estimate should lie within a range of reasonably possible outcomes. Management may be motivated to choose an accounting estimate or assumptions that, tend to increase (or avoid decreasing) the carrying amount of assets and accounting estimates that tend to understate liabilities, as a means of managing earnings. This is management bias, which the auditor needs to quantify and evaluate as it may give rise to a misstatement when considered with other evidence of management bias. Management bias, with respect to accounting estimates, arises when the selection of an accounting estimate from a range of reasonably possible outcomes is not neutral. With respect to a range of reasonably and equally possible outcomes there is a rebuttable presumption that the mid-point of the range is free from bias and therefore neutral.
92. Bias with respect to accounting estimates arises in those circumstances where the applicable financial reporting framework does not specify which point in a range, of reasonably and equally possible outcomes, is recognized. In these circumstances indicators of bias may arise, for example, in the following two circumstances:

- (a) A number of accounting estimates may each lie at one boundary of their respective ranges of reasonably and equally possible outcomes. For example, an entity may have a provision for bad debts of \$100,000 and a provision for obsolete inventory of \$200,000. If the ranges of reasonably and equally possible outcomes are \$100,000 to \$110,000 and \$200,000 to \$220,000 respectively it follows that:
- (i) Each accounting estimate is not misstated because each falls within the range of reasonably and equally possible outcomes; and
 - (ii) If the mid point of each range is used as a benchmark against which to measure neutrality then bias in these two accounting estimates can be quantified as \$15,000.
- (b) Where management's accounting estimate lies outside the auditor's range of reasonably and equally possible outcomes then as described in paragraph 85 there is a misstatement of the difference between management's accounting estimate and the nearest point of the auditor's range. The auditor also quantifies the difference between the nearest point of the range and the mid point, as this may be a further indicator of bias in the financial statements.

The quantification of misstatements and bias, and their interrelationship, under a number of scenarios that may be possible under different accounting frameworks are illustrated in Appendix 2.

93. This ISA provides Standards and guidance relating to the auditor's determination, quantification and documentation of indicators of possible bias with respect to accounting estimates. However, standards and guidance relating to the auditors evaluation of the audit evidence relating to possible management bias are not provided in this ISA. [Proposed revised] ISA 320 provides Standards and guidance on evaluating whether bias identified and quantified during the audit, when considered collectively, give rise to a misstatement involving subjective decisions.

Evaluating the Disclosure of Low Measurement Reliability in the Financial Statements

94. If the auditor determined range of reasonably and equally possible outcomes is greater than materiality, the auditor may be unable to conclude whether or not there is a financial statement misstatement (see examples 2 and 4 in Appendix 2). In such circumstances the auditor evaluates the adequacy of the disclosure of the low measurement reliability in the notes to the financial statements.
95. **Where an accounting estimate falls within an auditor determined range of reasonably and equally possible outcomes and that range is greater than materiality, the auditor should evaluate whether the disclosures in the financial statements meet the requirements of the applicable financial reporting framework and adequately disclose the fact that the accounting estimate has been selected from a wide range of possible outcomes.**
96. Some financial reporting frameworks prescribe the disclosures that may be made under headings such as:
- Key sources of estimation uncertainty.
 - Critical Accounting Estimates.

In other cases, the auditor may encourage management to describe, in the notes to the financial statements, the circumstances giving rise to the wide range of reasonably possible outcomes.

Management Representations

97. **The auditor should obtain written representations from management regarding the reasonableness of significant assumptions, including whether they appropriately reflect management's intent and ability to carry out specific courses of action on behalf of the entity.**
98. ISA 580, "Management Representations" discusses the use of management representations. Depending on the nature, materiality and extent of estimation uncertainty, management representations about accounting estimates recognized or disclosed in the financial statements may include representations about:
- The appropriateness of the measurement methods, including related assumptions, used by management in determining accounting estimates within the applicable financial reporting framework, and the consistency in application of the methods.
 - The completeness and appropriateness of disclosures related to accounting estimates under the entity's financial reporting framework.
 - Whether subsequent events require adjustment to the accounting estimates and disclosures included in the financial statements.
 - Management's intent to carry out courses of action relevant to the accounting estimate.

Documentation

99. **The auditor should document:**
- (a) **The results of the auditor's risk assessment procedures to identify accounting estimates for which there is a risk of material misstatement;**
 - (b) **The results of the review of the outcome or re-estimation of significant accounting estimates made in prior periods;**
 - (c) **The assessed risks of material misstatement of accounting estimates at the financial statement level and at the assertion level, and the nature, timing and extent of further audit procedures responsive to the risks;**
 - (d) **Misstatements identified by the auditors;**
 - (e) **Indicators of possible bias; and**
 - (f) **The auditor's evaluation of whether the disclosures in the financial statements adequately disclose low measurement reliability affecting accounting estimates.**
100. **With respect to those accounting estimates that give rise to significant risks, the auditor should also document;**
- (a) **The accounting estimates that give rise to significant risks and the auditor's responses to those risks;**

- (b) **The auditor's evaluation of the significant assumptions made by management;**
- (c) **The auditor's evaluation of management's determination of best estimates;**
- (d) **Where applicable, the ranges of reasonably possible outcomes determined by the auditor, and the auditor's evaluation of the reasonableness of management's best estimate in relation to the auditor determined range and the evaluation of the likelihood of possible outcomes occurring; and**
- (e) **The auditor's evaluation of whether the audit evidence obtained is sufficient to support management's judgments about whether the measurement of the accounting estimate is sufficiently reliable to recognize the accounting estimate.**

101. The extent to which these matters are documented is for the auditor to determine using professional judgment.

Effective Date

102. This ISA is effective for audits of financial statements for periods beginning on or after [*insert date*].

Public Sector Perspective

<i>The need for, and if so the content of, this section to be considered by the Public Sector Committee</i>

Categories of Accounting Estimate Subject to a Risk of Material Misstatement

Appendix 1

Category	Illustrative characteristics	Illustrative examples
<p>A. <u>High Measurement Reliability</u>. Accounting estimates where the measurement is highly reliable and therefore does not give rise to a significant risk.</p> <p><i>The risk of material misstatement arises primarily from the significance of the monetary amount of the accounting estimate recognized in the financial statements.</i></p>	<p>Accounting estimates in this category are those, for example:</p> <ul style="list-style-type: none"> that are capable of being calculated from generally accepted methodologies; or that are not dependent upon management's judgment of the outcome of uncertain future conditions, transactions or events; or where the accounting estimate is derived from the entity's accounting system and the internal controls over the relevant systems are strong; or where the historical experience of the entity is likely to be indicative of the final outcome of the item being estimated; or where the amount being estimated involves a large population of items of a similar nature that individually are not significant. 	<ol style="list-style-type: none"> 1 Depreciation expense of a fleet of vehicles used by administration staff 2 Valuation of bulk raw materials such as coal or timber 3 Liability for refunds of deposits on reusable containers returned by customers 4 Warranty provision relating to a long established product line 5 Bad debt provision with respect to credit cards issued by a financial institution to credit worthy customers
<p>B. <u>Low Measurement Reliability</u>. Accounting estimates where a wide range of possible outcomes gives rise to a significant risk.</p> <p><i>The risk of material misstatement arises from the potential for a different measurement of the accounting estimate recognized in the financial statements, rather than from the significance of the monetary amount of the estimate</i></p>	<p>Accounting estimates in this category are those for example:</p> <ul style="list-style-type: none"> that are highly dependent upon management's judgment of the outcome of uncertain future conditions, transactions or events that are remote in time or may not occur; or that are not capable of being calculated from generally accepted methodologies or derived with some degree of precision from available data; or where the accounting estimate is derived from the entity's accounting system and the internal controls over the relevant systems are weak; or where the historical experience of the entity is unlikely to be indicative of the final outcome of the item being estimated; or where the amount being estimated involves a small population of items having dissimilar probabilities of final outcome. 	<ol style="list-style-type: none"> 1 Future sales of a new drug in order to determine whether carrying amount of development costs is impaired. 2 Provision for environmental remediation costs 3 Estimate of ultimate liability in respect of a line of Property & Casualty Insurance business where the controls over the timely input of reported claims are weak 4 Warranty provision relating to a newly introduced product. 5 Additional revenues on long term contracts where the contractor is negotiating for additional payments from customers
<p>C. <u>Reliable Measurement Not Possible</u>. Accounting estimates where the measurement is not sufficiently reliable to meet the recognition criteria of the applicable financial reporting framework.</p>	<p>The characteristics of accounting estimates in this category are qualitatively similar to the characteristics of the preceding category. The difference is that management is unable to make an accounting estimate that can be depended upon by users of the financial statements to be free from material error. Consequently an asset or liability exists that is not recognized but may be disclosed as a contingent asset or liability as required by the financial reporting framework.</p>	<ol style="list-style-type: none"> 1 Estimated financial effect of a contingent liability . 2 Obligations for which an entity is jointly and severally liable to the extent that it is expected that the provision will be settled by other parties.

Examples of Circumstances Giving Rise to “Known Misstatements Involving Subjective Decisions”, Bias, or Disclosure of Low Measurement Reliability.

	Example 1	Example 2	Example 3	Example 4
Common Fact Situation				
Range of reasonably and equally possible outcomes for provision for warranty expense as determined by the auditor.	\$95,000 to \$102,000	\$95,000 to \$102,000	\$95,000 to \$102,000	\$95,000 to \$102,000
Mid point of range	\$98,500	\$98,500	\$98,500	\$98,500
Management's recognized accounting estimate	\$96,000	\$96,000	\$80,000	\$80,000
Materiality	\$8,000	\$4,000	\$8,000	\$4,000
Financial reporting framework requires the lowest point in the range to be recognized				
Misstatement involving subjective decisions.	(1,000)	(1,000)	15,000	15,000
Bias.	0	0	0	0
Disclosure of wide range of possible outcomes	No need to evaluate	Evaluate	No need to evaluate	Evaluate
Financial reporting framework requires the mid-point in the range to be recognized				
Misstatement involving subjective decisions..	2,500	2,500	18,500	18,500
Bias.	0	0	0	0
Disclosure of wide range of possible outcomes	No need to evaluate	Evaluate	No need to evaluate	Evaluate
Financial reporting framework requires the highest point in the range to be recognized				
Misstatement involving subjective decisions.	6,000	6,000	22,000	22,000
Bias.	0	0	0	0
Disclosure of wide range of possible outcomes	No need to evaluate	Evaluate	No need to evaluate	Evaluate
Financial reporting framework does not specify a point in the range to recognize. Presumption that the mid point represents information that is neutral and free from bias				
Misstatement involving subjective decisions.	0	0	15,000	15,000
Bias.	2,500	2,500	3,500	3,500
Disclosure of wide range of possible outcomes	No need to evaluate	Evaluate	No need to evaluate	Evaluate

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