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Draft Frequently Asked Questions
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DRAFT FREQUENTLY ASKED QUESTIONS (FAQ) REGARDING THE USE OF AUTOMATED TOOLS AND TECHNIQUES WHEN IDENTIFYING AND ASSESSING RISKS OF MATERIAL MISSTATEMENT IN ACCORDANCE WITH ISA 315 (REVISED)

This publication has been prepared by a Working Group of the International Auditing and Assurance Standards Board (IAASB) following the approval of International Standard on Auditing (ISA) 315 (Revised), *Identifying and Assessing the Risks of Material Misstatement Assessment* in September 2019. It is intended to provide further guidance on the use of automated tools and techniques when performing risk assessment procedures in accordance with ISA 315 (Revised). This publication does not amend or override the ISAs, the texts of which alone are authoritative. Reading the publication is not a substitute for reading the ISAs. In conducting an audit in accordance with ISAs, auditors are required to comply with all the ISAs that are relevant to the engagement.

The questions addressed in this publication are not exhaustive and the examples are provided for illustrative purposes only.

ISA 315 (Revised) refers to the use of automated tools and techniques in the risk assessment process. In particular, the application material to the standard describes and explains aspects of automated tools and techniques under discreet headers with the title '*Automated Tools and Techniques*.' Such paragraphs provide guidance and further explanations on how automated tools and techniques may be used in performing the relevant requirements. Although written in the context of the identification and assessment of risk in accordance with ISA 315 (Revised), the scope of this FAQ publication provides guidance that may also address other standards, such as ISA 230[1] and ISA 500.[2]

1. What are automated tools and techniques?

Automated tools and techniques are IT-enabled processes that involve the automation of analysis, modelling and visualization; robotics, artificial intelligence (e.g. speech recognition, translating text to speech, machine learning); drone technology and others. Such automated tools and techniques can supplement or replace manual, administrative, and repetitive tasks.

When performing risk assessment procedures in accordance with ISA 315 (Revised), automated tools and techniques can assist the auditor in evaluating data sets to develop a detailed understanding of an entity's business and processes to identify areas where risks of material misstatement may be present and to gather evidence that supports the basis for the auditor's identification and assessment of risks of material misstatement s.

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[1] ISA 230, *Audit Documentation*

[2] ISA 500, *Audit Evidence*

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Examples of automated tools and techniques that can be used during the risk assessment process include:

- Data analytics, which are used to evaluate entire data sets by discovering and analyzing patterns and trends, identifying and investigating unusual items, deviations and anomalies, through the use of, for example, predictive analytics. The auditor can also obtain other useful information from large data sets relevant to the preparation of the financial statements that may not have been as easily visible through the use of more traditional or existing practices, such as a statistical sampling approach.

- Robotics is an automated way of processing structured data by using a software that automates activities that humans perform on their computers and are typically repetitive tasks that require minimal judgment. For example, robotics can be used to perform general ledger analysis, such as identifying journal entries that do not balance, are duplicated, are over a defined threshold, or display certain characteristics .

- In artificial intelligence techniques, machine learning technology is trained to recognize patterns in vast volumes of data, including unstructured data such as emails, social media, contracts, invoices, images and conference call audio files. Auditors can use artificial intelligence in gathering information from various sources to assist in the auditor's risk assessment procedures.

| 2 | How can automated tools and techniques be used in performing risk assessment procedures? |

In performing risk assessment procedures, the auditor may take into account a broad variety of information from internal and external sources. In today's business environment, the available sources of information are characterized by the pervasive use of IT and the increased availability of large amounts of data, mostly in a digital format. Through the use of automated tools and techniques, the auditor may perform procedures on large volumes of data (from the general ledger, sub-ledgers, or other internal data), for analysis, recalculations, reperformance or reconciliations. The audit evidence obtained through these procedures may assist the auditor in identifying risks of material misstatement, the assessment of such risks, or both. As noted by ISA 315 (Revised),[3] risk assessment procedures, by themselves, do not provide sufficient appropriate audit evidence on which to base the audit opinion.

Examples:

Risk Assessment Procedures	Examples
Understanding the information system, including business processes[4]	Analyzing sales transactions using stratifications, trends, ratios and relationships between sales and other account balances or classes of transactions (such as cost of sales and inventories)

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[3] ISA 315 (Revised), paragraph x

[4] Also see examples in ISA 315 (Revised), paragraphs A49a and A141e

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	Process mining on the purchase to pay cycle, visualizing standard transactions versus outliers using the unique elements of a transaction such as transaction ID, date/time and action performed.
Understanding the entity's IT environment, including general IT controls	Analyzing authorization settings, configurations parameter settings in the IT system.
Understanding the entity's journal entries[5]	Analyzing which journal entries are manual vs system-generated in order to focus more on the manual sources/non-recurring/non-standard journal entries where controls might be more easily overridden. Analyzing how journal entries are initiated, recorded and processed in the general ledger or sub-ledgers.

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3   When automated tools and techniques are used to obtain information as part of risk assessment, are there unique considerations with respect to such information?

Irrespective of the use of automated tools and techniques, the auditor considers the relevance and reliability of the underlying data, for purposes of the risk assessment, in accordance with ISA 500.[6]

In particular, the following requirements of ISA 500 are applicable in relation to information to be used as audit evidence:

* Paragraph 8: Where information has been prepared by a management's expert; and
* Paragraph 9: Using information produced by the entity.

ISA 500 further recognizes that the reliability of information to be used as audit evidence and, therefore, of the audit evidence itself, is influenced by its source and the nature and the circumstances under which it is obtained, including the controls over its preparation and maintenance, when relevant.

Consistent with the principles in ISA 500, irrespective of whether automated tools and techniques are used in the performance of risk assessment procedures, the nature and extent of the procedures to consider the reliability of the underlying data may vary depending on:

* The nature of the data;

* The source of the data; and

* The process used to produce the data.

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[5]   Also see example in ISA 315 (Revised), para. A175a

[6]   ISA 500, *Audit Evidence,* paragraph 7

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> **4.   How can the auditor's professional skepticism be enhanced in relation to risk assessment, including through the use of automated tools and techniques? When using automated tools and techniques, are there unique risks to exercising professional skepticism?**

Professional skepticism is an attitude that includes a questioning mind, being alert to conditions which may indicate possible misstatement due to error or fraud, and a critical assessment of evidence.[7]

With the advancement of technology, the auditor has access to a wide array of data obtained from varying sources. Through the use of automated tools and techniques, these procedures may be used to enhance the auditor's ability to analyze the data to identify patterns, correlations and fluctuations in relation to financial information produced by the entity. In analyzing or evaluating management's assertions, the auditor may identify   audit evidence that contradicts other audit evidence obtained.[8] For example, by analyzing data obtained from varying sources, the auditor's understanding of complex revaluations or the evaluation of the entity's ability to continue   as a going concern may be enhanced. Further, using artificial Intelligence (machine learning) to base outcomes on data input and compare to outcomes produced by management may reduce the risk of confirmation or anchoring bias.[9]

In the ever-changing environment of technology use, it is important to avoid being overconfident in the use of automated tools and techniques or over relying on the outputs of such tools and techniques. As powerful as these tools may be, they are not a substitute for the auditor's knowledge and judgment, and the exercise of professional skepticism. In this context, auditors are reminded of overarching quality control requirements included in ISQC 1 and ISA 220:

- ISQC 1: '*The firm shall establish policies and procedures designed to provide it with reasonable assurance that engagements are performed in accordance with professional standards and applicable legal and regulatory requirements...*'
- ISA 220 paragraph 15: '*The engagement partner shall take responsibility for the direction, supervision and performance of the audit engagement in compliance with professional standards and applicable legal and regulatory requirements…*'

Accordingly, when performing engagement procedures, including through the use of automated tools and techniques, auditors are required to exercise professional skepticism and be satisfied that professional standards are complied with. It follows that when the auditor uses automated tools and techniques, it is reasonable to expect that the auditor (or firm) would obtain a reasonable understanding of such tools or techniques, including the outputs thereof and be in a position to interpret what that means in terms of the individual audit engagement.

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[7]   ISA 200, *Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with International Standards on Auditing*, paragraph 13(l)

[8]   ISA 200, paragraph A20

[9]   Confirmation bias is the potential tendency for an auditor to put more weight on information that is consistent with his initial beliefs or preferences. Anchoring bias is the potential tendency to make assessments by starting from an initial numerical value and then adjusting insufficiently away from that initial value in forming a final judgment. *Source: https://www.thecaq.org/wp-content/uploads/2019/03/professional-judgment-resource.pdf*

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5. **How can automated tools and techniques be applied in the identification of events and conditions that may indicate the existence of risks of material misstatement, and in doing so, identify possible characteristics that may be associated with such events and conditions? This may include the inherent risk factors as described in ISA 315 (Revised) (i.e. complexity, subjectivity, change uncertainty, susceptibility to misstatement due to management bias or other fraud risk factors insofar as they affect inherent risk)**

Automated tools and techniques provide auditors with an opportunity to more efficiently review and analyze larger data sets and information. In doing so, the auditor may obtain an understanding about the characteristics or the composition of the population and the auditor may identify or derive unique insights about the data or information, which may be indicative of events or conditions that affect susceptibility to misstatement of an assertion about a class or transaction, account balance or disclosure.

For example, an account balance may comprise many potential data sources, with different characteristics, and the processing of that data may involve many interrelated steps. Using automated tools and techniques to analyze such data (for example through visualization techniques) may result in an understanding of how and by whom such transactions were initiated, captured and processed. This understanding may highlight certain trends, patterns or even anomalies (i.e. events and conditions) that increase inherent risk to varying degrees. Examples of such analyses or techniques may include:[10]

- Analyzing the payroll ledger may reveal unusual or unexpected activity in processing the data, either because of the timing thereof or because of the responsible individual (management bias or fraud).

- Reviewing large volumes of daily investment security pricing data that may reveal significant volatility (change, uncertainty).

- Analyzing a provision account, such as a warranty, decommissioning or bonus provision, may identify unusual variations in source data related to the model or the underlying assumptions (subjectivity and management bias).

- Examining the data used in a stock valuation calculation may identify various sources with different characteristics or the application of sophisticated algorithms (complexity).

- Comparison of persons authorized to initiate or approve journal entries to persons actually recording journal entries may reveal susceptibility to misstatement due to fraud (management bias or fraud).

- Analyzing transaction detail at period end may identify unusual activity (fraud).

- Process mapping of an entire class of transactions for a period may provide insight into the complexity involved with processing such transactions (complexity).

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[10] Note that the examples include analytical review procedures in the context of risk assessment procedures. Subject to complying with the requirements of ISA 520, some of these analytical review procedures may also represent substantive analytical review procedures,

6.   What are the auditor's considerations regarding the use of machine learning or artificial intelligence in risk assessment procedures? Are there any different considerations when this technology is used by the entity?

ISA 500 does not distinguish between manual or automated procedures and requires the auditor to design and perform audit procedures in such a way as to enable the auditor to obtain sufficient appropriate audit evidence to be able to draw reasonable conclusions on which to base the auditor's opinion. As such, one risk assessment procedure on its own may not provide sufficient appropriate audit evidence for the auditor's intended purpose of identifying risks of material misstatement. It follows that if the auditor places more reliance on certain automated tools and techniques in the performance of risk assessment procedures, the auditor still applies the same underlying principles of ISA 500 in considering the relevance and reliability of the underlying data or information that is to be used as audit evidence to support the auditor's risk assessment.

As noted in the response to question 4, ISQC 1 and ISA 220 place a responsibility on the firm and auditor (respectively) to comply with professional standards. In this context, when using automated tools or techniques, the auditor's considerations may include:

- Obtaining an understanding of the nature of calculations performed by the tool and the effects on potential outcomes;

- The pervasiveness of audit evidence to be collected with the use of predictive analytics or tools that incorporate machine learning or artificial intelligence;

- The ability to validate the model using alternative audit procedures available; and

- The possibility of continuously validating and tuning the model.

For tools that are classified as off-the-shelf software, the auditor may assess whether or not the tool or the service provider was subject to an assurance engagement (for example ISAE 3402[11] if likely to be relevant to user entities' internal control as it relates to financial reporting) or an alternative form of certification). When off-the-shelf software uses machine learning or artificial intelligence, the considerations are generally not different from traditional off-the-shelf software, but becomes more important when the volume of the audit evidence collected with the tool increases.

Another approach may include the development of a parallel testing procedure through the use of an alternative tool. The alternative tool may be used to determine whether the output or result remains the same in all material respects. In addition, the auditor may evaluate the controls around these tools.

The same considerations may apply when:

- The auditor uses a tool that was self-developed by the audit firm; or
- The entity itself is using tools that incorporate machine learning or artificial intelligence.

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[11]   International Standard on Assurance Engagements (ISAE) 3402, *Assurance reports on Controls at a Service Organization*

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7. **What are the considerations in documenting the auditor's use of automated tools and techniques in performing risk assessment procedures?**

ISA 230[12] does not differentiate between the use of manual or automated procedures with respect to audit documentation requirements. When using automated tools and techniques in performing risk assessment procedures, the auditor complies with relevant documentation requirements, including those set out in paragraph 54 of proposed ISA 315 (Revised), *Identifying and Assessing the Risks of Material Misstatement*, as well as the requirements in paragraphs 8 and 9 of ISA 230.

For example, consistent with paragraphs 8 and 9 of ISA 230, when using automated tools and techniques in the performance of risk assessment procedures, documentation may include:

- The objective of the automated tool or technique;

- The source of the underlying data and how it was considered to be relevant and reliable (as necessary in the context of the procedure being performed);

- The tools or techniques used to perform the procedure;

- An explanation for how the procedure was designed to meet its objective;

- The results of the procedure, including a screenshot or extract of the visualization (if applicable);

- How the results of the procedure were analyzed; and

- Identifying characteristics of the specific items considered during risk assessment procedures.

As noted in paragraph A12 of ISA 230, identifying characteristics will vary with the nature of the audit procedure and the item or matter tested. ISA 230[13] also notes that the auditor may include abstracts or copies of the entity's records as part of audit documentation. However, given the voluminous data that may be used by automated tools and techniques, it is not practical nor necessary to include in the audit file all data used in audit procedures or abstracts or copies of all the entity's records used in automated tools and techniques.

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[12]   ISA 230, *Audit Documentation*

[13]   ISA 230, paragraph A3