NON-AUTHORITATIVE SUPPORT MATERIAL RELATED TO TECHNOLOGY: FREQUENTLY ASKED QUESTIONS (FAQ)—THE USE OF AUTOMATED TOOLS AND TECHNIQUES WHEN IDENTIFYING AND ASSESSING RISKS OF MATERIAL MISSTATEMENT IN ACCORDANCE WITH SLAuS 315 (REVISED 2019)

In light of the increasing use of automated tools and techniques in performing audit procedures, the revised standard focuses on different aspects of automated tools and techniques (ATT) under discreet headings titled '*Automated Tools and Techniques*.' Such paragraphs provide application material and further explanations about how automated tools and techniques may be used in performing procedures in accordance with the relevant requirements. Although written in the context of the identification and assessment of the risks of material misstatement in accordance with SLAuS 315 (Revised 2019), the scope of this FAQ publication also provides support for the implementation of other standards, such as SLAuS 230[1] and SLAuS 500.[2]

What are ATT?

Audit procedures can be performed using a number of tools or techniques, which can be manual or automated (and often involving a combination of both). Practitioners may use various terms in practice to describe tools or techniques that are automated. For example, applying automated analytical procedures to data during risk assessment procedures are sometimes referred to as data analytics.

Although the term 'data analytics' is sometimes used to refer to such tools and techniques, the term does not have a uniform definition or description. This term is too narrow because it does not encompass all of emerging technologies that are being used when designing and performing audit procedures today. In addition, technologies and related audit applications will continue to evolve, such as artificial intelligence (AI) applications, robotics automation processes and the use of drones. Therefore, this uses the broader term automated tools and techniques.

Applying the SLAuSs: Use of ATT

In applying the SLAuSs, an auditor may design and perform audit procedures manually or through the use of ATT, and either technique can be effective. Regardless of the tools and techniques used, the auditor is required to comply with the SLAuSs.

In certain circumstances, when obtaining audit evidence, an auditor may determine that the use of ATT to perform certain audit procedures may result in more persuasive audit evidence relative to the assertion being tested. In other circumstances, performing audit procedures may be effective without the use of ATT.

Technology is ever-changing

As technology evolves and new approaches to auditing develop, the relevance of a particular ATT and its relative advantages may change.

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[1]   SLAuS 230, *Audit Documentation*

[2]   SLAuS 500, *Audit Evidence*

FAQ – Use of Automated Tools and Techniques When Performing Risk Assessment Procedures in Accordance with SLAuS 315 (Revised 2019)

1. What types of automated tools and techniques could be used in risk assessment procedures?

Automated tools and techniques, for the purpose of an audit, are IT-enabled processes that involve the automation of methods and procedures, including the analysis of data using modelling and visualization, robotic process automation, artificial intelligence and machine learning, and drone technology to observe or inspect assets.[3] Using such automated tools and techniques can supplement or replace manual or repetitive tasks.

Examples of automated tools and techniques that could be used to perform risk assessment procedures include:

- Data analytics[4]—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 identification and assessment of risks of material misstatement that may not have been as easily visible or obvious through the use of more traditional tools or techniques.

- Robotic process automation (RPA)—the processing of structured data by using a software that automates activities that humans perform, typically repetitive tasks that require minimal judgment. For example, RPA 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.

- Artificial intelligence techniques—machine learning technology 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 the auditor in identifying risks of material misstatement.

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

When performing risk assessment procedures in accordance with SLAuS 315 (Revised 2019), automated tools and techniques can assist the auditor in obtaining their understanding of an entity's business and organizational structure, and in understanding flows of transactions and processing as part of the auditor's procedures to understand the information system.[5]

For example, the auditor may use automated tools or techniques to obtain direct access to, or a digital download from, the databases in the entity's information system that store accounting records of transactions. By applying automated tools or techniques to this information, the auditor may confirm the understanding obtained about how transactions flow through the information system by tracing journal

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[3]   SLAuS 315 (Revised 2019), paragraph A35

[4]   SLAuS 315 (Revised 2019), paragraph A31

[5]   SLAuS 315 (Revised 2019), paragraph A57

entries, or other digital records related to a particular transaction, or an entire population of transactions, from initiation in the accounting records through to recording in the general ledger. Analysis of complete or large sets of transactions may also result in the identification of variations from the normal, or expected, processing procedures for these transactions, which may result in the identification of risks of material misstatement.[6]

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, more information is available from external sources and is characterized by being in an electronic or digital format. Information technology (IT) is used extensively to access and process these increasingly vast amounts of information. Using automated tools and techniques, the auditor may therefore perform procedures on these large volumes of data (from the general ledger or sub-ledgers, or other internal or external data).

The use of automated tools and techniques to understand flows of transactions and processing as part of the auditor's procedures to understand the information system may provide information about the entity's organizational structure or those with whom the entity conducts business (e.g., related parties, vendors, customers),[7] and may help demonstrate how audit evidence has been obtained that supports the basis for the auditor's identification and assessment of risks of material misstatements.

Examples:

Procedures Required by SLAuS 315 (Revised 2019)	Examples
Understanding the entity's information system[8]	Using automated tools and techniques to analyze data (e.g., using visualization techniques) to understand how, when and by whom transactions are initiated, captured and processed.
	Process mining on the purchase to pay cycle, which includes 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[9]	Using automated tools and techniques to analyze authorization settings, configurations and parameter settings in the IT system.

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[6] SLAuS 315 (Revised 2019), paragraph A137

[7] SLAuS 315 (Revised 2019), paragraph A57

[8] SLAuS 315 (Revised 2019), paragraph 25 (a)

[9] SLAuS 315 (Revised 2019), paragraph 25(a)(iv)

Understanding controls over the entity's journal entries[10]	Analyzing how journal entries are initiated, recorded and processed in the general ledger or sub-ledgers.
	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, including identifying journal entries where there may be an increased risk of fraud due to management override (e.g., journal entries made by a member of management or personnel other than who would be expected to make such entries).
Identifying significant classes of transactions, account balances and disclosures[11]	An entire population of transactions may be analyzed to understand their nature, source, size and volume. By applying automated techniques, the auditor may, for example, identify that an account with a zero balance at period end was comprised of numerous offsetting transactions and journal entries occurring during the period, indicating that the account balance or class of transactions may be significant (e.g., a payroll clearing account). This same payroll clearing account may also identify expense reimbursements to management (and other employees), which could be a significant disclosure due to these payments being made to related parties.[12]

3. How can automated tools and techniques be used to support the auditor's exercise of professional skepticism when performing risk assessment procedures? Are there any special considerations to demonstrate the exercise of professional skepticism when using automated tools and techniques?

SLAuS 200[13] requires the auditor to plan and perform an audit with professional skepticism recognizing that circumstances may exist that cause the financial statements to be materially misstated. 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. [14]

With the advancement of technology and the tools used to perform audit procedures, and access to more information from a wide array of data, including from varying sources, the auditor's ability to critically assess audit evidence gathered when identifying and assessing the risks of material misstatement may be improved.

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[10]   SLAuS 315 (Revised 2019), paragraph 26(a)(ii). Also see example in SLAuS 315 (Revised 2019), paragraph A161

[11]   SLAuS 315 (Revised 2019), paragraph 29

[12]   SLAuS 315 (Revised 2019), paragraph A203

[13]   SLAuS 200, *Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with Sri Lanka Auditing Standards*, paragraph 15

[14]   SLAuS 200, paragraph 13(l)

For example, procedures performed using automated tools and techniques may be used to analyze data to identify patterns, correlations and fluctuations in relation to financial information produced by the entity. In performing this analysis using automated tools and techniques for the purpose of identifying or assessing risks of material misstatement, the auditor may also be alerted to audit evidence from the analysis that is not biased towards corroborating the existence of the risks of material misstatement or that may be contradictory to the existence of such risks.[15]

Areas where access to a wide array of data, including from varying sources, may enhance the auditor's ability to identify and assess risks of material misstatement (with the exercise of appropriate professional skepticism) may include:

- Obtaining and analyzing data obtained from varying sources when considering the entity's ability to continue as a going concern, including whether such analysis corroborates or contradicts management's assessment.

- Using different sources of underlying data when auditing complex valuations.

- Using artificial Intelligence (machine learning) to base outcomes on data input and compared to outcomes produced by management, which may help reduce the risk of confirmation or anchoring bias,[16] and assist with an enhanced identification of risks of material misstatement.

However, as technology continues to change, 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 professional judgment. Further, although the auditor may have access to a wide array of data, including from varying sources (i.e., increased quantity), the exercise of professional skepticism is still necessary to critically assess both the quality and reliability of the data as well as the outputs from using automated tools and techniques.

For example, the use of judgment and the exercise of professional skepticism is still needed to consider the relevance and reliability of the information (or the outputs from the automated tool or technique) to be used as audit evidence (i.e., the quality of audit evidence being produced), as well as the questioning of contradictory audit evidence obtained.[17]

Demonstrating the exercise of professional skepticism when using automated tools and techniques is no different to demonstrating how professional skepticism is exercised when performing other types of audit procedures. SLAuS 315 (Revised (2019) explains that documentation of various matters required by the standard may provide evidence of the auditor's exercise of professional skepticism. This includes, for example, documenting how the procedure was performed and how the audit evidence from the risk assessment procedure was evaluated, including documenting any professional judgments made.[18]

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[15]   SLAuS 315 (Revised 2019), paragraph A12

[16]   Confirmation bias is the potential tendency for an auditor to put more weight on information that is consistent with their 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*

[17]   SLAuS 500, paragraph 7

[18]   SLAuS 315 (Revised), paragraph A238

4.	How can automated tools and techniques be helpful when the auditor is considering the inherent risk factors in the identification and assessment of risks of material misstatement?

Automated tools and techniques may provide auditors with an opportunity to more effectively review and analyze larger data sets and consider information from a variety of sources. In doing so, the auditor may obtain unique insights about the data or information, such as a deeper understanding about the characteristics or composition of the population. This understanding may help identify events or conditions that affect the susceptibility to misstatement of a class or transaction, account balance or disclosure, or provide more information for supporting the basis for the auditor's assessment of the identified risks.

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 highlight certain trends, patterns or even anomalies that could be indicative of inherent risk to varying degrees. Examples of such analyses or techniques may include:[19]

- Analyzing the payroll ledger, which may reveal unusual or unexpected activity in processing the data (management bias or fraud).

- Reviewing large volumes of daily investment security pricing data that may reveal the significance of the price volatility, which may assist the auditor in determining where on the spectrum of inherent risk the identified risk is assessed(i.e., taking into account the inherent risk factors of change and uncertainty in assessing inherent risk).

- Examining the data used in a share-based payment valuation calculation may identify various sources with different characteristics or the application of sophisticated algorithms used for the calculation (indicating a higher susceptibility to misstatement because of complexity).

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

- Analyzing transaction details at period end may identify unusual activity, which may reveal susceptibility to misstatement due to fraud (management bias or other fraud risk factors).

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

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[19] The examples include analytical procedures in the context of risk assessment procedures. SLAuS 520, *Analytical Procedures*, sets out requirements and application material when the auditor is performing analytical procedures, for whatever purpose.

> ### 5. What are the auditor's considerations regarding the use of machine learning or artificial intelligence by the entity when performing risk assessment procedures?

Artificial intelligence (AI) and machine learning technology, in the simplest terms, is technology that replicates the thinking and actions of humans through use of algorithms programmed in software. When AI or machine learning is used by the entity, the objectives of the auditor's risk assessment (as compared to the risk assessment when such technology is not used by the entity) do not change. For example, in a non-AI environment, the auditor may make inquiries of entity personnel responsible for making decisions related to the processing of transactions. In this setting, the auditor would inquire about factors considered by the decision maker, data used in forming the decision, and so on, and determine further risk assessment procedures based on the answers to those inquiries.

In an AI (machine learning) environment, the auditor would be interested in obtaining the same information (i.e., factors and data used in forming the action taken through AI). However, the auditor may need to consider the algorithms embedded in, and the learning by the AI as a complement to the human thinking and decision-making process. As such, the auditor's understanding of how the creation and modification of the algorithms operating are controlled and maintained may be important.

> ### 6. What are the considerations in documenting the auditor's use of automated tools and techniques in performing risk assessment procedures?

SLAuS 230[20] does not differentiate between the use of manual or automated audit procedures with respect to what is required to be documented. When using automated tools and techniques in performing risk assessment procedures, the auditor complies with relevant documentation requirements in paragraphs 8 and 9 of SLAuS 230, as well as those set out in paragraph 38 of SLAuS 315 (Revised 2019).

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[20]   SLAuS 230, *Audit Documentation*