

Ref# 600969

15 February 2017

Submitted electronically at www.iaasb.org, and to MattWaldron@iaasb.org

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Dear Matt

SAICA COMMENT LETTER ON THE IAASB'S REQUEST FOR INPUT: EXPLORING THE GROWING USE OF TECHNOLOGY IN THE AUDIT, WITH A FOCUS ON DATA ANALYTICS

The South African Institute of Chartered Accountants (SAICA) is the home of chartered accountants in South Africa – we currently have over 41,000 members from various constituencies, including members in public practice ($\pm 30\%$), members in business ($\pm 50\%$), in the public sector ($\pm 5\%$), education ($\pm 2\%$) and other members ($\pm 13\%$). In meeting our objectives, our long-term professional interests are always in line with the public interest and responsible leadership. SAICA is currently the only professional accountancy organisation that has been accredited by the Audit Regulator in South Africa, the Independent Regulatory Board for Auditors (IRBA).

In response to your **Request for Input: Exploring the Growing Use of Technology in the Audit, with a Focus on Data Analytics (RFI)**, please find included the comments prepared by SAICA.

We thank you for the opportunity to provide comments on this document.

Please do not hesitate to contact us should you wish to discuss any of our comments. You are welcome to contact Willie Botha (willieb@saica.co.za) or Hayley Barker Hoogwerf (hayleyb@saica.co.za).

Yours sincerely,

Signed electronically

Willie Botha
Senior Executive – Assurance and Practice

INTRODUCTION

1. The environment in which audits are conducted continues to evolve. To ensure that the auditing profession remains relevant to stakeholders' needs, the IAASB has noted the technological advances that are impacting on the profession and in-line with the objectives of serving the public interest, recognise the need to explore the most effective and efficient way to respond to the evolving business environment and changing needs of stakeholders.
2. Since the current International Standards on Auditing (ISAs) do not make specific reference to data analytics, there is uncertainty around establishing a link between the use of effective technological auditing techniques and the requirements of the ISAs. Furthermore, clarity is required around whether data analytics is an entirely new auditing approach which impacts on the scope and objectives of the audit or whether data analytics is merely another tool that the auditor can use in achieving the stated overall objectives of an audit.
3. SAICA therefore believes it is appropriate that the IAASB consider exploring its potential role as a standard-setter in providing guidance on the appropriate use of technology in the auditing process, whether it be by way of standard-setting, providing guidance to support practitioners or collaborating with and influencing others in this regard (or a combination of all of these initiatives).
4. It is our view that guidance in this area will promote the use of auditing tools that enables more extensive interrogation of the subject matter thereby enhancing the risk assessment process and risk response in more efficiently and effectively focusing the auditor's work effort and procedures.
5. Such guidance will ultimately lead to aligning the actions of registered auditors with the purpose of the IAASB, namely the protection of the financial interests of shareholders and creditors (and other affected stakeholders) and enhance the overall quality of the auditing process.

SAICA'S APPROACH TO RESPOND

6. SAICA's approach to informing our members about the RFI and its contents, and to gather information to inform our comment letter can be summarised as follows:
 - a. A SAICA internal working group studied and debated the RFI and prepared initial thoughts and input pertaining to the questions that have been posed (questions a to f). Areas where additional information-gathering was required were identified, as well as approaching specific organisations or individuals, where appropriate;
 - b. SAICA, in collaboration with the IRBA hosted two consultation forums on the RFI.

The consultation forums were attended by 21 delegates including representatives from the IRBA, SAICA, the Institute of Internal Auditors South Africa (IIASA), IT experts and practitioners from various audit firms and independent consultants and training providers; and
 - c. We requested members of the SAICA Assurance Guidance Committee (AGC) to provide additional inputs on selected questions in the RFI.

THE SAICA COMMENT LETTER IS ORGANISED INTO TWO SECTIONS, AS FOLLOWS:

Section 1: Response to Request for Specific Comments; and
Section 2: Response to Request for General Comments.

In Section 1, our comments are presented in the sequence of the questions as they have been included in the RFI. We have responded to all six questions. Appropriate sub-headings are used under individual questions, where required.

Reference in this comment letter to “**data analytics**” takes cognisance of the definition provided in paragraph 6 of the RFI, and in the context that computer-assisted audit techniques (CAATs) as included in the extant ISAs have evolved into what is now referred to as data analytics.

Furthermore, for purposes of this comment letter, we refer to “**IT expert**”, which means a professional (whether or not also a professional accountant or auditor) possessing skills, knowledge and experience in information technology and technology tools or applications that may be used to support or assist the audit engagement team during the audit process. In this context, the terms *IT expert* and *IT auditor* are used interchangeably.

SECTION 1: RESPONSE TO REQUEST FOR SPECIFIC COMMENTS

Question a

Have we considered all circumstances and factors that exist in the current business environment that impact the use of data analytics in a financial statement audit?

7. Experience has shown that auditors are able to come up with innovative ideas for the use of data analytics but when discussing the ideas with the client, many obstacles are identified which include the system not having the required reporting functionality, the volume of data is too large, etc. Our consultations highlighted the following challenges in addition to those already included in the RFI:

Understanding between the IT expert and the auditor

8. In practice, the challenge that is experienced is transferring knowledge from the IT expert to the auditor, where the auditor is not necessarily involved in the specific detail of the data analytics but still requires sufficient information around the data analytics performed to understand how this influences the audit. Currently, numerous auditors are not experienced in data analytics and are not able to sufficiently understand the data analytics performed and how the results thereof influence the audit. This lack of understanding gives rise to an expectation gap between the work actually performed by the IT expert and the auditor’s understanding of the work performed, which may result in insufficient or inappropriate audit evidence being obtained. There is a risk of overreliance by the auditor on the data analytics performed which would have an adverse effect on audit quality.
9. In terms of overreliance, we are aware that there is currently a misconception amongst some auditors that the performance of data analytics alone provides the auditor with sufficient, appropriate audit evidence and therefore negates the need for the auditor to perform additional testing. It is therefore essential for the auditor to have a clear understanding of the data analytics performed and the influence that this has on the audit to design and perform any further or additional audit procedures that may be necessary.
10. Data analytics cannot be seen as an alternative to the performance of traditional auditing methods but can rather be applied as a tool to complement these traditional methods, improve the quality of the auditing process and promote the performance of a more effective and efficient audit.
11. A big challenge is that the IT expert and the auditor are speaking different languages. The IT expert can add value to the auditing process if they had a better understanding of the

requirements of the ISAs. On the flipside, the auditor needs to make use of the data analytics performed and ensure that this is planned and performed in such a manner so as to achieve the auditor's objectives of obtaining sufficient appropriate audit evidence.

12. For auditors to reap the full benefits that can be derived from the use of data analytics, they need to invest in improving their IT knowledge. IT experts would have to reciprocate by improving their understanding of the auditing process. With ever evolving technology, there is no limit to the amount of information that the IT expert can extract for the auditor. However, the IT experts need to understand what information would be useful to the auditor in providing sufficient appropriate audit evidence from data analytics. This communication needs to take place upfront; either prior to or during the planning stage of the audit, followed by adequate interactions and communication during the course of the audit.
13. We have been made aware of instances in practice where the auditor is engaging with the IT expert as a mere formality to comply with the requirements of the ISAs. As an example, the ISAs require the auditor to perform a review of the general controls environment¹. The auditor may merely request the IT expert to perform a general IT control review without providing any further guidance. The auditor then performs all the planning, designs and performs test of detail etc., with little or no consideration of the results of the review of the general controls environment. Furthermore, the review of the general controls is often not performed timely enough for the auditor to consider the results of the review and the impact on the audit; or the auditor has the results of the general IT control review but does not consider the results in planning and performing of the audit.
14. The ISAs allow for flexibility in performing different procedures to obtain audit evidence; for example, information obtained by performing risk assessment procedures may also provide the auditor with audit evidence about classes of transactions, account balances and disclosure, as well as the operating effectiveness of controls, even though such procedures were not specifically planned as substantive procedures or tests of controls². In certain instances the IT expert and the auditor may be functioning in silos with little knowledge or understanding of the work of the other. With the lack of communication between the IT expert and the auditor, reliance cannot be placed on other procedures not specifically planned as either substantive procedures or tests of controls and creates an element of inefficiency in the performance of the audit. These silos need to be broken down and the communication between the auditor and the IT expert need to be improved for the auditor to realise the full benefits of data analytics.
15. A lack of mutual understanding also has an adverse effect on the value-add element for the client. As an example, a finding from the general IT control review may be that there is a lack of segregation of duties. Reporting this mere fact to the client might be of little value. Data analytics however has the ability to take this further by identifying conflicts that have occurred as a result of this lack of segregation of duties. The reporting of conflicts will add more value to the client than merely reporting the weakness identified.
16. Auditors need to focus on upskilling their ability to incorporate and apply technology in the auditing process. Currently, the profession is not seeing sufficient technological skills in auditors. Refer to paragraphs 73 to 83 of this document for insight into how SAICA is currently addressing this challenge.

Data acquisition – Acquiring the correct data

17. In addition to the challenges relating to access to large data sets, data security and privacy as well as insufficient infrastructure to store data³, a significant challenge faced by the IT expert is acquiring the correct data that is needed to perform the data analytics. The IT expert is also

¹ ISA 315 (Revised), *Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and its Environment* para 12 and 13

² ISA 315 (Revised), *Identifying and Assessing the Risks of Material Misstatement Through Understanding the Entity and its Environment* para A2

³ RFI para 18(a)

required to speak two languages in sourcing the relevant information, namely financial accounting talk as well as IT talk. The challenge comes in when the IT expert and the auditor are not able to bridge the gap between the two different languages. This challenge is particularly pertinent in the audit of a new client where there is no prior year knowledge/understanding of the data requirements.

18. Even once the data is received, it is often not in the format required by the IT expert and therefore the IT expert is required to further massage the data into a usable format.
19. The use of live systems that provide real-time data also can pose a challenge in acquiring the correct data. It is imperative for the IT expert to obtain the data dump at the correct point in time, to ensure that the information is complete in including all transactions that have occurred in the period under review, but also includes only valid transactions that do not in fact relate to the next reporting period. The auditor should be alert to the specific cut-off risks posed by real-time systems.

Data analytics as a specialised field

20. Within the South African environment, the expectation is that a Chartered Accountant (CA(SA)) has knowledge and an understanding of all aspects of an audit, as well as International Financial Reporting Standards (IFRS), taxation, IT, valuations etc., but with the volume of information it is getting to a point where this is no longer possible. A potential solution to this challenge may be found in the concept of developing a model where each CA(SA) has a basic knowledge and understanding of all areas and then specialise in a chosen field, with data analytics being one of the specialised fields.
21. In forming the audit opinion, the engagement partner who is ultimately responsible for the audit will consult with each of the specialists on matters identified and based on the evidence obtained by the pool of specialists and otherwise, the engagement partner can draw conclusions and form the audit opinion. With this approach, the engagement partner is required to understand the report prepared by the specialist and interpret the results of the testing.
22. The IAASB could explore how the principles in ISA 620⁴ and ISA 500⁵ could be applied by analogy to the work performed by a data analyst as part of the audit of the financial statements. Providing clarity in this regard may be useful and encourage auditors to explore the use of the work of a data analyst with the comfort that compliance with the ISAs is being maintained.
23. The concept of a data scientist as a career path has emerged. A data scientist has three core skills, being IT, business and statistics. From an audit point of view, the use of a data scientist is a more advanced analytical function that could be outsourced to an expert. The use and integration of technology into the auditing process can, however, not be fully outsourced. Since auditors are also users of technology, they need to improve on their own understanding and use of technology to enhance the effectiveness and efficiency of the auditing process. To this end, a key competency requirement should be the ability to audit through the system using technology.

Data quality – Accurate and complete information throughout the period under review and the effect of journal entries

24. Our consultations informed us about instances in practice where certain clients are more concerned with the year-end trial balance and the accuracy thereof, with little focus on the transactions for the year. Their view is then that closing journal entries can merely be passed at the end of the reporting period (or at closing dates throughout the year) to correct balances and totals that are ultimately reflected in the financial statements. In such circumstances the data generated throughout the reporting period may be inaccurate and therefore does not provide quality data for the performance of analytical testing that produces meaningful results.

⁴ ISA 620, *Using the Work of an Expert*

⁵ ISA 500, *Audit Evidence* para 8

25. The issue of poor data quality is relevant to items in the statement of financial performance, as well as the statement of financial position. Any evidence obtained by performing data analytics on the transactions that ultimately make up the total or closing balance would be overridden by journal entries that are processed.
26. It is the responsibility of the audit client (management and those charged with governance) to place a strong emphasis on internal control to ensure data quality. This will ensure that the data being produced is of an acceptable standard to enable the auditor to perform data analytics to produce accurate results that add value to the auditing process. This is a key consideration relating to the auditor's use of information produced by the entity in terms of ISA 500⁶, which could be enhanced in the context of the use of data analytics and other technology.
27. Exception reports can be used as a method to measure the quality of client data, which includes the identification of exceptional data processing. By using data analytics, the auditor is able to assess the quality of the data by identifying the nature and extent of exceptional items that are processed, i.e. transactions that have not been generated via the normal processing system. The quality of the data is then assessed based on the level of exceptional items identified, which includes journal entries that have been processed.
28. In those instances where the quality of the data is poor and the client merely processes journal entries to correct various totals and balances reported in the financial statements, data analytics in relation to normal transaction processing may provide little audit evidence because of the effect of override by way of journal entries.
29. Another equally important aspect of data quality is to ensure that the data obtained is complete in that it includes all the transactions. Inclusion of guidance on how the auditor verifies the completeness of the data that has been received from the client, either in the application paragraphs of the ISAs or in other separate guidance would be helpful.

Data quality – Capturing of information

30. Part of data analytics is analysing both financial and non-financial data. With the audit of financial statements, the focus has historically been on financial data but with the emerging use of data analytics, non-financial data is becoming increasingly relevant. Clients, however often do not complete all the fields in the table resulting in the omission of information that may have added to the breadth and depth of data analytics that could be performed.
31. In instances where all fields have been completed and all relevant non-financial data is available, another challenge that the auditor may face is to assess the accuracy and reliability of such data.

Quantity of data

32. Auditors of today are no longer focused solely on financial information obtained from a structured source but rather incorporate both financial and non-financial data from both structured and unstructured sources. With the significant volumes of data available, the challenge that IT experts face is identifying the correct data to be used in the performance of data analytics that are meaningful to the auditor.
33. This challenge is overcome by the IT expert having the required domain knowledge as well as communication with the auditor to understand the audit requirements (also refer to discussion relating to the understanding between the IT expert and the auditor, in paragraph 8 to 16 of this document).
34. Another challenge that auditors are faced with in relation to the quantity of data is that clients realise that auditors have (or should have) access to technology and are moving towards a more automated audit approach. They expect efficiencies as a result. Clients expect the request for

⁶ ISA 500, *Audit Evidence* para 9; A49 to A51

data to change in comparison to the performance of an audit in accordance with the traditional auditing procedures that have been performed.

35. In addition, certain clients are providing the auditor with a data dump with an expectation that the auditor will analyse the data for them, including identifying deficiencies in the system. This places an additional strain on the resources that are available, as well as creating time and cost pressures while the client has expectations of enhanced efficiencies. The auditor should also be mindful of independence requirements if services beyond the audit are provided.

Domain knowledge

36. Each client has their own unique business rules and domain knowledge. An IT expert may be required to obtain an understanding of the domain knowledge applicable to the client to enable the data analytics performed to be effective and useful to the auditor. The lack of domain knowledge may therefore create a hindrance to the auditor in performing data analytics.

Extraction of data from client systems

37. It has been found that clients are sometimes hesitant to extract data from their live production system and therefore establish a separate platform which is used to store this data. Clients often do not have adequate controls over the transfer of the data from the live production system to the separate platform. Furthermore, the auditor is not receiving data from the live production system which gives rise to an additional challenge in verifying the accuracy and completeness of the data on the separate platform. The auditor is therefore required to extend the testing or perform additional testing to address this challenge.

Storage of data obtained in prior years

38. The use of prior year data to identify and analyse trends is essential in performing certain data analytics. If the auditor is to retain such data, the question is: What are the requirements and rules with respect to the retention of client data and the use of this in subsequent audits.
39. A possible solution to this challenge is requesting the client to store such data but then the auditor may be required to perform validity, accuracy and completeness testing over the data each year that it is used.

Size of audit firms and availability of infrastructure

40. The large firms may have more capability in that they have access to the necessary resources and infrastructure that enable the use of data analytics equipped to handle volumes of data. The smaller firms may not have access to the required resources or infrastructure. Furthermore, certain countries in Africa may not have the necessary infrastructure to allow for connectivity and cloud computing as yet, which limits the possibility of using different technologies and methods driven by technology.
41. A business risk that has been identified from an audit practice point of view is that practitioners who are not upskilling and incorporating technology into their auditing processes are at risk of losing business.

Costs related to performing data analytics

42. Due to the costs involved in setting up data analytics, these techniques are usually limited to larger clients with complex systems which include system modifications. To this end, when data analytics is eventually rolled out to smaller clients, the challenges faced will be different to those relating to larger organisations.
43. In exploring this topic further, it is advised that the Data Analytics Working Group (DAWG) keep the distinction between the larger clients that are usually serviced by the larger audit firms and the Small and Medium-sized Enterprises (SME) that are usually serviced by the Small and Medium-

sized Practices (SMP) ”⁷. This could also include expanding the “considerations specific smaller entities” in the application material of the ISAs.

Different accounting packages

44. In the performance of data analytics, the focus is on the process followed in arriving at the end result, being the trial balance, as opposed to the correctness of the end results. With the many different accounting packages that are available, the process followed in arriving at the trial balance differs across these packages, including the structure of the system, the data that the system retains as well as the manner in which journal entries are processed. This gives rise to a practical challenge in that a standard methodology or test that may work for one client may not be compatible with the accounting package used by another client.

Traditional staffing model and available staff resources

45. In terms of the traditional staffing model applied at many firms, the first and second year trainee accountants would perform the detailed testing required to obtain sufficient appropriate audit evidence. With the emergence of data analytics, this model is turned onto its head. Knowledge of the business, knowledge of the industry and experience is required to analyse and interpret the results of data analytics and therefore the time, skills and experience of more senior staff is required. This creates a challenge in terms of the availability of work for junior trainee accountants and their involvement in certain work if there is an increase in the use of data analytics in the performance of an audit.

46. The RFI⁸ rightly makes mention of the investment required in re-training and re-skilling auditors. This will however not detract from the requirement of experience that can only be obtained over time in analysing and interpreting the results of data analytics.

Availability of an audit trail

47. There is often a lack of a clear or adequate audit trail between the data used in the performance of data analytics and the transactions and account balances included in the trial balance. This creates a challenge for the auditor in making and documenting the relevant and appropriate link and in assessing whether sufficient appropriate audit evidence has been obtained for a specific class of transactions, account balance or related disclosure.

Effective use of the client’s data analytic tools

48. A practical approach that could be employed by the auditor to overcome some of the identified challenges is to make use of the data analytic tools that the client has already implemented. Clients make use of their own data analytic tools to perform certain analyses that are required from a management and oversight point of view. It is possible for the auditor to base-line off the data analytic tools used by the client in the performance of the audit.

49. Instead of the auditor sourcing their own data and designing their own data analytic tools, it is possible to place reliance on the data analytic tools used by the client and performing tests to verify the validity, accuracy and completeness of the client’s data analytic tools. Guidance on how this could be achieved would be useful.

50. In practice, it has been found that in placing reliance on the data analytic tools used by the client, the auditor’s understanding of the business is enhanced. The level of comfort over the validity, accuracy and completeness of the data used in the performance of the data analytics is also enhanced in comparison to the auditor starting from scratch in sourcing data to be used in the performance of data analytics.

⁷ RFI para 23

⁸ RFI para 18(f)

51. However, the demand that this places on the auditor in terms of obtaining sufficient appropriate audit evidence, with specific reference to the requirements in ISA 500⁹, and the auditor's understanding of the entity and its environment in terms of ISA 315¹⁰, should not be underestimated. Any guidance to be provided to auditors in implementing the requirements of the ISAs would need to be specific, clear and comprehensive.

Question b

Is our list of standard-setting challenges accurate and complete?

52. Overall, we concur with the basic challenges as outlined in paragraphs 19 to 25 of the RFI. In the sections that follow, we offer some additional information and perspectives pertaining to certain of the challenges and identify a few additional challenges.

The current risk and response nature of the ISAs and the distinction between different types of audit procedures

53. Although this challenge has been outlined in the RFI¹¹, based on our consultations, we found that this challenge is of such significance that we have elaborated on this further, as follows.
54. Currently, there is not a clear distinction of the nature of data analytic procedures. The performance of data analytics can either be performed as a risk assessment procedure, a test of control or as a substantive procedure. A single data analytic can have a tri-purpose, in being used in the performance of the risk assessment, the testing of controls, as well providing substantive audit evidence. The structure of the current ISAs is that each individual auditing procedure is classified as either a risk assessment procedure, a test of control or a detailed substantive procedure. It is therefore a challenge for the auditor to now link the performance of data analytics back to the ISAs and classify each individual data analytical procedure into the three categories of testing.
55. There is not a clear distinction between risk assessment procedures performed using data analytics versus data analytics that constitute tests of control or substantive procedures.
56. ISA 315¹² recognises that, although risk assessment procedures by themselves do not provide sufficient appropriate audit evidence on which to base the audit opinion, such procedures could provide the auditor with audit evidence although such procedures were not specifically planned as substantive procedures or as tests of controls. Furthermore, substantive procedures or tests of controls can be performed concurrently with risk assessment procedures. ISA 330¹³ allows for dual-purpose testing in the context of performing a test of controls concurrently with a test of details, although the different purposes of the test need to be considered separately in evaluating its results. Guidance is required in relation to when a data analytic procedure is considered to be a risk assessment procedure, a test of controls or a substantive procedure. More often than not, the nature of the data analytics is risk assessment yet auditors have the misconception that the data analytics actually contain tests of detail. This gives rise to the risk that the auditor may not have obtained sufficient appropriate audit evidence in drawing his/her conclusions.
57. The nature of data analytics is such that multi-purposes may be achieved with a single test design. Therefore, data analytics can often not be limited to a single category of audit procedures. We concur with the reference in paragraph 19(f) of the RFI that risk assessment and risk response could often occur in one step when using data analytics. The IAASB should explore how

⁹ ISA 500, *Audit Evidence* para 7 to 9

¹⁰ ISA 315 (Revised), *Identifying and Assessing the Risk of Material Misstatement through Understanding the Entity and its Environment*

¹¹ RFI, para 19(e)

¹² ISA 315 (Revised), *Identifying and Assessing the Risk of Material Misstatement through Understanding the Entity and its Environment* para A2

¹³ ISA 330, *The Auditor's Responses to Assessed Risk* para A23

the principles already contained in the ISAs may be implemented and applied in the context of data analytics, including enhancing the relevant application material.

58. The proposed clarification around the multi-purpose nature of data analytics would also have to be extended to the testing of classes of transactions, accounts balances and related disclosures in that the results of data analytics may concurrently provide evidence in relation to various, but related financial statements items.

Distinction between data analytics and the use of technology in gathering audit evidence

59. Our consultations have confirmed the challenge that is highlighted in paragraph 11(c) of the RFI relating to the appropriate balance of audit evidence obtained from data analytics and that obtained for other substantive procedures or tests of controls. There is a misconception among some auditors that the use of data analytics will eliminate the need to perform other audit procedures; either in the form of traditional manual auditing procedures or using technology.
60. Furthermore, auditors are also not always clear on the distinction between data analytics and analytical procedures that are currently referred to in the ISAs. It is our understanding that data analytics includes, but is not limited to analytical procedures.
61. The auditor needs to apply both data analytics and auditing procedures performed by other means (manual or using technology), as may be required, to obtain sufficient appropriate audit evidence. Data analytics and other audit procedures must complement, rather than replace each other. It is about obtaining sufficient appropriate audit evidence in the most efficient and effective manner, including using the best “tools” available to reduce audit risk to an acceptable low level. Data analytics needs to evolve in such a manner to improve the quality of the audit.

Data analytics and the level of assurance obtained from different procedures

62. Data analytics enables the auditor to stratify the population more precisely than ever before thereby enhancing the understanding of the business and related transactions. The auditor is now able to stratify accounts into transactions that have been processed through different systems, subject to either manual or automated controls, identify routine and non-routine transaction, etc.
63. The advanced insight and understanding that the auditor is now able to obtain through the performance of data analytics further enhances the risk assessment process, including the auditor’s understanding of internal control relevant to the audit.
64. In relation to the design and implementation of controls, a question that was raised is whether data analytics changes the manner in which the auditor places reliance on tests of controls. With the enhanced insight, does this allow the auditor to place more reliance on the results of tests of controls, as opposed to a situation where the auditor may not have had the ability to stratify the account and merely selected a sample of items to perform traditional testing on.
65. Our view is that the level of assurance that is required in designing an appropriate audit response is a factor of the auditor’s risk assessment at the assertion level. This is to say, that for a particular level of risk, a particular level of assurance will be required, which may be obtained by applying either a combined approach or a substantive approach. The auditor exercises professional judgement to decide the most efficient and effective substantive procedures and/or tests of controls to perform in the circumstances. Therefore, it is not about placing “more reliance” on the tests of controls, but rather designing the most efficient and effective procedures to obtain the required level of assurance in the circumstances. The enhanced insight obtained from the use of data analytics may rather enable the auditor to identify more precisely what controls could be relied on and how best to test these controls.
66. It is suggested that additional guidance on the level of assurance that the auditor derives from the performance of certain procedures, linked to risk assessment at the assertion level, be provided.

67. With reference to ISA 500¹⁴, additional guidance on what is considered to be sufficient appropriate audit evidence would be useful, giving recognition to the iterative nature of data analytics.

Auditor's responsibility in assessing the tool used in performing data analytics

68. With the ever evolving technology, it is possible to perform any type of data analytic on any available data. The current ISAs do not make mention of any of the data analytic tools that are currently being used. The question that is then asked is what the auditor's responsibility will be in ensuring that the tool used in performing the data analytics functions in the manner intended for audit purposes.

69. To this end, data analytics is seen as a tool used by the auditor in obtaining sufficient appropriate audit evidence. The ISAs are not prescriptive with respect to the use of any such tools but rather includes a set of principles for the auditor to apply his own professional judgment in forming an opinion. Although there is a view that this approach should not be changed, additional guidance on the auditor's responsibility when using tools in the performance of data analytics or audit procedures in general would promote consistency in practice and thereby enhance audit quality.

70. There is a concern though that the ISAs may become too prescriptive in nature. The selection of a tool to be used in performing data analytics is a matter of professional judgment. The ISAs could provide clarity on the nature of the auditor's considerations, the minimum requirements relating to the documentation of these considerations and how the auditor satisfied himself/herself that the tool is reliable in providing the relevant information accurately. These requirements are not necessarily restricted to the actual data analytic tool but could also extend to the use of an IT expert, when applicable.

71. This is also applicable from a completeness point of view; not a completeness test but guidance for the auditor to ensure that the data population that the auditor uses to perform the data analytics is complete. Providing this guidance may stimulate the use of data analytics, since practitioners would have more certainty on how the use of data analytics links back to the ISAs.

Structure of the ISAs

72. The introduction of data analytics as a new standard is generally not seen as the solution to the challenges that have been highlighted, because there is a view that data analytics is merely a tool used by the auditor to gather sufficient appropriate audit evidence. Therefore, we are supportive of an approach to build on the principles already contained in the ISAs and adapt and expand these to address the new tools that have emerged as a result of evolving technology. We agree with the notion that the ISAs should also be able to accommodate developments, such as technology advancements) that occur in the future, without needing to be in a continual state of change¹⁵.

Auditor of the future

73. In concluding this section, a key matter that in our view needs to be considered is identifying what the audit of the future entails and competencies that the auditor of the future needs. To this end, SAICA is undertaking a project entitled CA 2025; a project aimed at defining what competencies the CA(SA) of the future should demonstrate.

74. Currently, the process for qualifying as a CA(SA) takes a minimum of seven years, including a three year undergraduate degree, a one year post graduate degree at which point students exit the academic programme and then complete a three year training programme. Prospective CAs (SA) are also required to pass the prescribed professional examinations during the period of their training contract. Those CAs(SA) who wish to become registered auditors (RAs) must comply with

¹⁴ ISA 500, *Audit evidence*

¹⁵ RFI para 17

the additional requirements of the IRBA, which include a post-qualification Audit Development Programme that takes a further 18 months to complete.

75. To ensure that CAs(SA) entering the profession have the required competence (defined level of knowledge, skills and attitudes), SAICA has developed a competency framework that drives the learning and training that happens during the academic programme (university period) as well as the training contract period. In terms of the current competency framework, there is no specific competence requirement in terms of data analytics. Having said that, some aspects of data analytics, such as the ability to analyse; the ability to solve problems and the ability to make judgement, which are considered to be pervasive skills, are already included.
76. Data analytics is, however, seen as being significant enough to warrant further specific research to assess the competence requirements and related learning outcomes that need to be included within the competency framework. Care must also be taken in not detracting from the core of the CA(SA) profession, that is seen as a multi-faceted discipline that produces business leaders and advisers, auditors, tax advisers, CFOs, CEO's, investors, etc. The question that needs to be answered is what specific aspects and level of competence on data analytic skills CAs(SA) require and when are these skills expected to be developed and demonstrated: is it when they leave university (before any practical training period); when they qualify as a CA(SA) or is this a specialist field to be developed post qualification (or a combination).
77. The CA 2025 research project currently being undertaken by SAICA follows an approach which includes both focus groups and one-on-one interviews with various stakeholders, including academics, members of the SAICA board, the SAICA management committee, CFO's, audit committee members, recruitment specialists and young professionals etc. This research will specifically identify the market requirements in detailing competencies the CA(SA) of the future should be able to demonstrate. The outcome of this project will be a revised competence framework for entry level CAs(SA) and RAs (as this research is being conducted with the IRBA).
78. Based on the initial results of the first research project focus group, a competency that has already been identified is Technological skills (*initial definition*): *Defined as* The ability to operate and think critically in an information and communication technology driven environment and being able to use technology in the management and analysis of big data. SAICA does, however foresee some challenges in that if new competency requirements are to be added; then other requirements may need to be removed or reduced as the current CA(SA) programme is already very extensive and may even be considered to be overloaded by some.
79. With the current challenge of programme/syllabus overload, life-long learning is quickly becoming the most important skill that SAICA can and should develop in the prospective CA(SA); a skill which will then enable CAs(SA) to reskill/upskill on an ongoing basis.
80. SAICA is of the view that there is definitely something that needs to be done in the qualification process to take into account the growing use of and exponential changes to technology as an enabler, including the application of data analytics; but this will probably not entail SAICA's competency framework focusing on data scientists competencies. It is our view that a CA(SA) needs to know enough to understand how technology is being used as an enabler and instruct someone on what to do and be able to exercise professional judgement in analysing the results and drawing conclusions.
81. Although we believe that CAs(SA) must have a reasonable knowledge and understanding of data analytics, it is our view that a data analyst expert is a specialised field, similar to that of a taxation expert, a VAT expert, a valuation expert etc. and that while the CA(SA) has the basic underlying competencies to be more IT focused, that this should be a post qualification specialisation.
82. A question that came up during our consultations was whether the profession has started considering developing data analytics competencies for its exiting members too late. In our view the answer is yes and no. Yes, because the profession is and always has continued to evolve but no because at this point, the full impact of data analytics is not yet known. Changes in technology are exponential and the profession is going to have to find a way to work around this if it wants to

remain relevant. There is a risk that professional accountancies body may undertake research that may be out-of-date by the time even the initial elements of the project are completed. This is however a risk that faces all professions today, not only the accountancy profession, although there is much research indicating that the accountancy profession is most at risk.

83. Since the focus of the RFI is on the auditor, the question was raised as to whether the required level of understanding in relation to data analytics is different depending on whether the CA(SA) chooses to remain in public practice as an assurance provider or move into business. Our view is that data analytics does not only apply in the auditing environment because businesses also need to use these to run their businesses and make management decisions.

Question c

To assist the DAWG in its ongoing work, what are your views on possible solutions to the standard-setting challenges?

84. For completeness sake, as part of the consultations that were held by SAICA and the IRBA, comments on the possible solutions to both the *Challenges posed by environmental factors and circumstances in the business environment (refer to question a)* as well as *Challenges encountered by auditors that may affect standard setting (refer to question b)* were obtained and included in the sections that follow. This additional information includes some suggestions on actions that the auditor can take to overcome the identified challenges.

Challenges posed by environmental factors and circumstances in the business environment

Data acquisition

85. First and foremost, the auditor needs to have a clear understanding of the objective or purpose of the procedure(s) to be performed by means of data analytics; a procedure which is designed based on an understanding of the client's business and in response to the risk assessment. In obtaining an understanding of the client's business, it is important that the auditor includes a business process walkthrough which identifies both the manual and automated controls and includes the involvement of the IT expert (as applicable). By the auditor and the IT expert obtaining an understanding of the business process together, the current silos in which some audits are being conducted will be eliminated and the gap in the understanding between the auditor and the IT expert will be bridged. Also refer to our related comments under question a, above.
86. Once the objective or purpose (or often multi-purposes) of the procedure is clear, the IT expert or auditor needs a clear understanding of the data requirements, which need to be communicated to the client in an understandable manner. If the IT expert or auditor is not clear on the exact data requirements, the task of acquiring data from the client will be further complicated. In addition, the IT expert or auditor needs to have a clear understanding of the source of the data to facilitate reconciling the data back to the historical financial statements that are being reported on.
87. The IT expert as well as the auditor need to comprehensively document the process followed in acquiring the data, including an audit trail containing sufficient details of the data used to enhance the understanding of the source of data for the current audit, as well as for purposes of subsequent engagements.

Access to large data sets

88. The existence of this challenge depends on whether the auditor is required to work with the data on-site or off-site. In practice, with the larger clients, this challenge has been mitigated by the client allowing the IT expert or auditor to work directly on their data base. The client provides the IT expert or auditor with read-only access to the required domain and therefore no transfer or storing of data is required.

89. In other instances, systems used by IT experts or auditors have evolved sufficiently to enable the IT expert or auditor to handle large volumes of data and this is therefore no longer considered to be a significant challenge.

Data security and privacy

90. South Africa is in the process of promulgating privacy legislation in the form of the Protection of Personal Information Act, 2013 (POPI). POPI is aimed at promoting the protection of personal information by public and private bodies. POPI has been signed into law but is yet to become effective. POPI does however contain principles that are of relevance to the RFI which are elaborated in the paragraphs that follow.

91. If it is assumed that the auditor is considered to be the operator¹⁶ as defined in POPI, the responsibilities assigned to the auditor in terms of POPI include the following:

- a. An operator or anyone processing personal information on behalf of a responsible party or an operator, must:
 - i. Process such information only with the knowledge or authorisation of a responsible party; and
 - ii. treat personal information which comes to their knowledge as confidential and must not disclose it¹⁷
- b. A responsible party must, in terms of a written contract between the responsible party and the operator, ensure that the operator which processes personal information for the responsible party establishes and maintains the security measures refer to in section 19 of POPI¹⁸.
- c. The operator must notify the responsible party immediately where there are reasonable grounds to believe that the personal information of a data subject has been accessed or acquired by an unauthorised person¹⁹.

92. Once POPI becomes effective, there will be a legal requirement on auditors in South Africa to ensure that the privacy and security of data and other information obtained from the client is protected.

Conceptual challenges

93. The auditor needs to be considerate in the timing of such requests and should not underestimate the time that it can take for the client to source the required data. The auditor needs to allow sufficient time for the client to source the required data, especially when the auditor is requesting data for the first time as a result of new procedures that may have been designed. It is therefore recommended that the auditor communicates a complete list of audit requirements to the client as early on as possible in the audit process.

94. The auditor also needs to be conscious of the client's system requirements in terms of change management control when loading new users etc. onto their system. These controls also need to be adhered to in extracting data in accordance with data requests received from the auditor. Timing of these requests is therefore crucial to success or failure of obtaining the required data.

95. The manner in which the request for new data is formulated, as well as the person to whom the request is directed is of vital importance. The auditor should explain the reason behind the request, including the proposed objective or purpose of the procedure as well as the reason for any change in the audit approach and in doing so, the client is more likely to cooperate in assisting the auditor with the data needs. At the same time, the auditor's communication should not undermine the reliability of the planned audit procedures and the auditor should be cautious in

¹⁶ An operator is defined as a person who processes personal information for a responsible party in terms of a contract or mandate, without coming under the direct authority of that party.

¹⁷ POPI, para 20

¹⁸ POPI, para 21(1)

¹⁹ POPI, para 21(2)

ensuring that the client does not impose limitations on the scope of the audit by interfering with, or diverting the audit work that the auditor believes is necessary in the circumstances.

Legal and regulatory challenges

Privacy and security and the transfer of data

96. When the IT expert is required to transfer data off the client's system and has to store such data, data encryption is used to protect the data security and privacy. Controls are also implemented, including policies and procedures at firms to control the physical security of the data rooms that house client's data. A clause clarifying the requirement of the auditor to implement policies and procedures to protect the security and privacy of the client's information is also generally included within the engagement letter.
97. The principle of protecting the security and privacy of the client's data is applicable to any data received from the client, regardless of the format that the data may take. All data, whether manual or electronic, needs to be protected.
98. Although the auditor is required to be conscious of the sensitivity of the client's data and is required to protect the security and privacy of such data, this was not considered to be a significant challenge.

Legal and regulatory requirements

99. This challenge is of particular relevance in the performance of group audits of multi-national organisations that are located outside the borders of South Africa. A practical solution to this challenge is making use of the local auditors in assisting in the performance of data analytics and report back to the group auditor on the results of the procedures performed. Here, the principles contained in the ISA 600 to 699 series²⁰ would be of relevance.

Resource availability

100. Although the challenge in the RFI²¹ makes reference to the shortage of centralised resources supporting the engagement team, an additional challenge faced in relation to the availability of resources also exists within the audit team itself.
101. In terms of ISA 330²², the auditor is able to select the audit approach, which can either be a substantive approach or a combined approach where reliance is placed on tests of controls in combination with further substantive testing²³. The audit approach is an outcome of the risk assessment procedures that are performed and should take into account the availability of the required resources.
102. With the allocation of staff resources, it has been found that the cost saving realised from less physical inspection of documentation versus the additional cost of the more skilled staff member required to perform the data analytics in many instances balance each other out. Although the auditor may incur additional once off costs in developing the data analytics, the cost saving is often realised in future years where these initial once off costs are not repeated.
103. The challenge faced in sourcing the required resources, including the additional costs that may be incurred is offset by the additional benefits that auditors reap from the performance of data analytics, which culminate in efficiencies and a more effective audit in that the coverage obtained is significantly improved and the quality of audit evidence is enhanced.

²⁰ ISA 600-699, *Using the Work of Others*

²¹ RFI para 18(d)

²² ISA 330, *The Auditor's Responses to Assessed Risk*

²³ ISA 330, *The Auditor's Responses to Assessed Risk* para 6 and expanded upon in para A 4-8.

104. ISA 520²⁴ indicates that before performing analytical procedures the auditor needs to assess the suitability of a particular substantive analytical procedure for a given assertion; taking into account the risk assessment and other detailed testing that may be performed²⁵. This principle can be extended to the performance of data analytics where these procedures should only be performed if considered suitable in providing sufficient appropriate audit evidence. Again, the principle of only allocating resources to work that will contribute to the achievement of the auditor's overall objectives.
105. It is our view that the principles relating to the performance of an audit remain unchanged regardless of the impact that evolving technology may have on the auditing process. Irrespective of the tools used by the auditor in gathering audit evidence, the performance of an audit in an effective and efficient manner is dependent on the auditor's ability to plan the audit appropriately.

How regulators and audit oversight bodies maintain oversight

106. The key to overcoming this challenge would appear to lie in the audit documentation. The ISAs currently require the auditor to document the key identifying characteristics of the specific items or matters tested²⁶. We agree, as stated in paragraph 19(i) of the RFI that the documentation requirements need not be any different when making use of data analytics, but that there are challenges in how the documentation requirements are applied.
107. As an example, is the auditor required to include the logarithm to enable the experience IT expert or auditor to rerun the actual data analytics or is it sufficient for the auditor to document the process followed. The IAASB should further explore what constitutes proper documentation in accordance with ISA 230²⁷ and other ISAs, as relevant.
108. Auditors will also be required to upskill in being able to understand and interpret the procedures performed by the IT expert to enable clear and concise documentation thereof in the audit file. In instances where there is a lack of understanding by the auditor of the work performed by the IT expert, an approach often followed by auditors is to merely include the report received from the IT expert without the auditor making the appropriate modifications and additions to ensure compliance with ISA 230.
109. In line with the requirement for general audit practitioners to upskill to become familiar and comfortable with the evolving technology, so too will regulators and other oversight bodies have to upskill to enable them to understand the audit procedures that have been performed.

The investment in re-training and re-skilling auditors

110. The knowledge gaps in the market need to be determined and the experts within the field of data analytics that are best positioned to provide the necessary education and training to upskill the role players identified. Education commences at university level and continues as part of the practical, on-the-job training. Therefore, this is a shared responsibility between the universities and the audit firms assisted by their professional accountancy organisations.
111. Qualified auditors also need to focus on upskilling their ability to incorporate and apply technology in the auditing process as part of continuous professional development. There is a perspective that the profession is not seeing sufficient technological skills in auditors; a challenge that needs to be addressed at both a pre-qualification and post qualification level. Also refer to paragraphs 73 to 83 of this document for additional information regarding SAICA's CA 2025 project.

²⁴ ISA 520, *Analytical Procedures*

²⁵ ISA 520, *Analytical Procedures* para 5(a)

²⁶ ISA 230, *Audit Documentation* para 9(a)

²⁷ ISA 230, *Audit documentation*

112. Another practical solution to this challenge may be found in the pairing of skills and resources. An example of the pairing of resources was seen in the aviation industry, when the new Boeings and Airbuses were brought into the market that were fully electronic. This created a challenge in that there was a lack of pilots with the skills and experience to fly these aircrafts. The new generation of pilots automatically learnt how to fly these aircrafts but did not have the experience. The older generation did not have the technical expertise but had the skills and experience required. The solution identified was to pair the new generation and older generation pilots to obtain the optimal mix of skills and experience required in flying the aircrafts.
113. Perhaps the auditing profession can implement a similar approach. The curriculum followed in teaching and training the new generation auditors should be updated to include relevant technological skills and advancements. These skills can then be paired with the practical experience of the older generation of auditing professionals thereby ensuring that an effective and efficient audit is performed using the correct mix of technology as well as practical experience.
114. Professional accountancy organisations globally are at the forefront of ensuring that the auditing profession stays relevant. The starting point must be fit-for-purpose education and training, and adapting and updating this on a timely basis thereby ensuring that auditors are up-to-date with any technological and other advances that have an impact on the profession.
115. During our consultations, a view was expressed that teaching the theory of data analytics is not as effective as on-the-job training. Experience has indicated theoretical knowledge adds little value to the understanding of and ability to perform data analytics. A true and thorough understanding of data analytics is best obtained through practical training and experience; again emphasising the shared contribution by the academic programme and the training programme (at pre-qualification level), as well as continuous professional development at post qualification level.

Challenges encountered by auditors that may affect standard setting

General IT Controls

116. The major risks associated with data analytics arise in the generation of data. General IT controls, including the entity's choice and implementation of its accounting and reporting system or package, contribute to an effective control environment. When a client is making use of a standard off-the-shelf package that has been accredited as a reliable accounting package the control environment may be assessed as stronger compared to a situation where the client is using an accounting package that has been developed in-house. However, this also depends on the client's system development and change controls. The extent of testing of the general IT controls would therefore differ depending on the client specific circumstances.
117. As indicated in the RFI²⁸, ISA 315 is not clear in providing guidance on what is considered to be the minimum level of general IT control testing. Exploring guidance to support practitioners in implementing the requirements of the ISAs would therefore be useful.
118. To improve the efficiency of the auditing process, a suggestion that has been made is for a single auditor to be responsible for the performance of certain elements of the general IT control review over standard off-the-shelf packages or similar standardised systems; confirming that the coding of the program can be relied upon thereby enabling other auditors to place reliance on the work performed. This will reduce the work effort for auditors across the spectrum of clients that use these packages or systems in achieving the same objective. However, program change controls and access controls would always require a level of testing or evaluation at the individual client level.

²⁸ RFI para 19 (a)(i)

Information produced by the entity

119. The RFI²⁹ includes the challenge relating to ensuring that the information obtained from the client is reliable. This challenge is further exacerbated by the poor quality of client data that auditors often receive. Also refer to discussion in paragraphs 24 to 29 of this document which is of relevance here.
120. The ultimate responsibility for ensuring that good quality, reliable data is produced is that of the client. The auditor should be responsible for ensuring that the client understands and acknowledges this responsibility.
121. The importance of the client maintaining good quality, reliable information is echoed in POPI. If it is assumed that the client is the responsible party³⁰, POPI³¹ includes a requirement for the responsible party to take reasonably practicable steps to ensure that the personal information is complete, accurate, not misleading and updated where necessary.
122. As we have already stated matters around data quality are key considerations relating to the auditor's use of information produced by the entity in terms of ISA 500³², which could be enhanced in the context of the use of data analytics and other technology.

Considering the relevance and reliability of external data

123. The question of interest in this section is *How is this different from the premise in the extant ISAs that the reliability of audit evidence is increased when it is obtained from independent sources outside of the entity?*³³ We believe that, in principle the data obtained from independent sources outside of the entity by means of data analytics or for purposes of applying data analytics is no different from other audit evidence so obtained. Some additional considerations relating to relevance and reliability, as currently addressed in the application material of ISA 500, may serve to address the evolving nature of information and the impact of technology.
124. It is our understanding that there are two main sources of data, namely structured data (where the data is generated from the client's formal accounting system, whether maintained internally or outsourced) and unstructured data (which is all other data sourced from sources other than the client's formal accounting system). This section of the RFI is not clear on which source of data is being referred to.
125. On the assumption that this relates to structured data obtained from an external service provider/service organisation, the available data may be limited to obtaining reports from the service organisation and the auditor may not have access to the underlying data to perform the data analytics. Despite the practical challenges that the auditor may face, the auditor would default to the principles contained in ISA 402³⁴.
126. Obtaining data from an external service provider to perform data analytics would, therefore be no different to obtaining any other data from an external service provider and therefore the guidance contained in ISA 402 should be appropriate.
127. The challenge that auditors face relates to the use of unstructured data obtained from a third party other than an external service provider generated by a system that may not necessarily have the controls required to ensure that the data is reliable. It may therefore prove to be more

²⁹ RFI para 19 (b)

³⁰ A responsible party is defined as a public or private body or any other person which, alone or in conjunction with others, determines the purpose of and means for processing personal information.

³¹ POPI paragraph 16 (1)

³² ISA 500, *Audit Evidence* para 9; A49 to A51

³³ RFI para 19 (c)

³⁴ ISA 402, *Audit Considerations Relating to an Entity Using a Service Organisation*

of a challenge to obtain audit evidence about the accuracy and completeness of the unstructured information obtained from such third party. In providing guidance, the DAWG could focus on these sources of data.

The nature of audit evidence in performing risk assessment procedures

128. The RFI³⁵ indicates that because the auditor is not developing an expectation, data analytics for the purpose of the performance of risk assessment procedures cannot be considered audit evidence from a substantive analytical procedure.
129. While we agree with this statement, currently, there is not a clear distinction between risk assessment procedures performed using data analytics versus data analytics that constitute tests of controls or substantive procedures. Our consultations have confirmed the challenge for the auditor to link the performance of data analytics back to the ISAs and classifying each procedure into the three categories concerned. Also refer to the discussion around this challenge in paragraphs 53 to 58 of this document.
130. Guidance on how the auditor establishes the link between data analytics and the requirements contained in the ISAs in terms of the performance of risk assessment procedures and further audit procedures should be explored. Furthermore, the inclusion of the concept of different types of data analytic procedures may assist auditors in assessing the nature of audit evidence obtained. This can also be linked to the concept of an exploratory data analytic procedure versus a confirmatory data analytic procedure as expanded on in paragraphs 143 to 147 of this document.

Current risk and response nature of the ISAs

131. In the performance of traditional auditing procedures, the auditor has been able to clearly link the audit procedure performed to the relevant assertions. In practice, the IT expert and the auditor are able to design well thought-out data analytics, but may experience difficulty in linking the data analytics back to the assertions. This is exacerbated by the challenge in determining the nature of the auditing procedure, i.e. risk assessment, test of controls or substantive procedure. The distinction becomes relevant in enabling the auditor to establish the link between the audit procedures performed and the requirements of the ISAs, including whether the auditor has obtained sufficient appropriate audit evidence.
132. The multi-purpose nature of data analytics should be recognised and explored. Also refer to our discussion relating to the distinction between data analytics and the use of technology in gathering audit evidence as contained in paragraphs 59 to 61 of this document, and data analytics and the level of assurance obtained from different procedures contained in paragraphs 62 to 67 of this document.
133. In addressing this challenge, two options were debated, as follows:
 - a. The ISAs and the principles contained therein need to be reviewed and revised to take into account the current capabilities of data analytics. The current risk-based approach would have to accommodate an approach where the testing of 100% of the population is possible, which may result in a fundamentally different approach to performing audits. The current concept of a staged approach to auditing (although still an iterative process) would need to be reconsidered, with a move towards the concept of continuous auditing, where the auditor is continuously obtaining data to analyse and respond to; or
 - b. The current principles contained in the ISAs are still appropriate and the ISAs need to be updated to take into account the new auditing tools that have emerged as a result of the evolving technological environment in which audits are being conducted. If this approach is followed, the principles contained in the ISAs would need to evolve in addressing more explicitly the multi-purpose nature of procedures performed using different tools and the

³⁵ RFI para 19 (d)

audit evidence so obtained, without the need for a different category of audit evidence generated from data analytics.

134. There is a notion that the auditor of the future is going to evolve from the current role of providing assurance to providing value added services, including auditors moving away from the traditional auditing approaches towards the concept of continuous auditing.
135. Continuous auditing is seen as a natural progression in the evolution of the control environment and audit efforts. It provides the auditor, as well as management of an entity with greater insight into processes, activities and transactions, thereby increasing the level of transparency within the organisation. This improved level of insight enhances the risk assessment process by enabling the auditor to more effectively identify areas susceptible to risk of material misstatements. This has a positive impact on the audit quality, in that the auditor is able to better allocate attention and resources³⁶.
136. Continuous auditing is an automated, on-going process that enables auditors to:
 - a. Collect from processes, transactions, and accounts data that supports internal and external auditing activities;
 - b. Achieve a timelier, less costly compliance with policies, procedures and regulations;
 - c. Shift from cyclical reviews with limited focus to continuous, broader, more proactive reviews;
 - d. Evolve from a traditional, static annual audit plan to a more dynamic plan based on continuous auditing results; and
 - e. Reduce audit costs while increasing effectiveness through IT solution³⁷.
137. A further benefit to continuous auditing is that it adds value to the client through, amongst others, improved compliance and risk management and an ability to achieve business goals. Continuous auditing, when combined with continuous monitoring brings a new level of systemisation and automation to the monitoring of controls³⁸.
138. The benefits of continuous auditing do not come without challenges. The Institute of Internal Auditors (IIA) has indicated that the effective use of data analytics is essential for an auditor to derive the full benefits from continuous auditing. Audit departments and audit teams need to develop increasing capabilities in using data analytics if they are to implement a technology-enabled continuous auditing methodology³⁹.
139. The IIA have further identified that a risk relating to continuous auditing is that the findings are not communicated to management; or not acted upon by management timeously to add value to the business through improved controls and business performance. To overcome this risk, it is essential for the auditor, in moving towards continuous auditing to review current reporting processes and adapt these as required to ensure that findings are communicated to management effectively and procedures are put in place to ensure that the identified issues are acted upon by management⁴⁰.
140. From an internal auditing perspective, the IIA is of the view that continuous auditing⁴¹ requires more than addressing technology issues and requires a paramount shift from the traditional auditing methods.

³⁶ Deloitte, 2010. *Continuous monitoring and continuous auditing: From idea to implementation*.
<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/audit/us-aers-continuous-monitoring-and-continuous-auditing-whitepaper-102910.pdf>. Accessed February 2017

³⁷ Deloitte, 2010.

³⁸ Deloitte, 2010.

³⁹ GTAG 16, *Data Analysis Techniques*

⁴⁰ GTAG 16, *Data Analysis Techniques*

⁴¹ The IIA have issued GTAG 3: *Continuous Auditing: Implications for Assurance, Monitoring, and Risk Assessment*, which provides further guidance on continuous auditing.

141. From an external audit perspective, we believe that the preference is for option b. in paragraph 133 above – the current principles contained in the ISAs are sound and a fundamental change is not required. In this context, the DAWG could also explore the possibility of issuing an International Auditing Practice Note (IAPN), which provides specific clarity on the following matters:
- a. Guidance on how data analytics links back to the principles contained in the ISAs. This should include clarity on considering the nature and purpose(s) of a data analytics, and achieving the required level of assurance in response to risk assessment at the assertion level. There are instances where auditors are shying away from using data analytics because the link between the data analytic procedures to the requirements of the ISAs cannot be established;
 - b. Whether and how the source of the data affects the auditor's evaluation of whether the information is sufficiently reliable for the auditor's purposes, including the need to test the completeness and accuracy of the underlying data;
 - c. In the performance of data analytics, what is considered to be sufficient appropriate audit evidence? If the auditor has performed a data analytic procedure that is confirmatory in nature and the results of the testing are satisfactory, is further detailed testing still required?

Nature of audit evidence in responding to risk

142. It is our understanding that the principle of the risk based approach will not change based on the emergence of data analytics. The challenge is rather how data analytics fits into the risk based approach.
143. In the White Paper issued by The American Institute of Certified Public Accountants (AICPA) entitled *Reimagining Auditing in a Wired World*⁴², reference is made to data analytical literature by J.W. Tukey, entitled *Exploratory Data Analysis*⁴³, where the concept of distinguishing data analytics into different models of analysis, exploratory and confirmatory is discussed. The AICPA have indicated in their paper that they are continuing this distinction in the context of their research on data analytics.
144. The two categories identified that are of relevance in suggesting the way forward include exploratory work, where the auditor is obtaining an understanding of the client and performing risk assessment and confirmatory work, where the auditor is performing audit procedures to gather audit evidence.
145. Exploratory work is inductive in nature and starts with the auditor asking questions to gain an understanding in areas such as:
- a. Understanding of the business;
 - b. Identifying what might go wrong in the business;
 - c. Identification and assessment of risk;
 - d. Identification of potential fraud risk indicators;
 - e. Focusing the auditor's attention on the relevant assertions; and
 - f. Assisting the auditor in developing the audit approach.

In performing the exploratory work, the auditor does not need to have a detailed technological understanding. In the methodology, there are certain standard items, relationships etc. that highlight trends which will enable the auditor to identify risks of material misstatement.

⁴² AICPA, 2014.

https://www.aicpa.org/interestareas/frc/assuranceadvisoryservices/downloadabledocuments/whitepaper_blue_sky_scenario-pinkbook.pdf, accessed 20 January 2017

⁴³ Tukey, J. W., 1977. *Exploratory Data Analysis*, Reading, MA: Addison-Wesley.

146. Confirmatory work is deductive and starts with the audit objective and related assertions. The purpose of confirmatory work is to provide the auditor with audit evidence in relation to the fair presentation of the financial statements. Here, the questions that the auditor would typically be asking would include:
- a. Is the subject matter, after applying the auditor's data analytics model, consistent with the auditor's expectations;
 - b. Are deviations identified;
 - c. If yes, are these deviations individually significant or do they form a pattern that is indicative of the potential for material misstatement.
147. We believe that the DAWG should explore how this conceptual distinction in terms of data analytics fulfilling two main functions, namely those of an exploratory nature and those of a confirmatory nature could be applied in assisting to address the challenges raised in paragraphs 19(d) to (f) of the RFI.

Appropriate level of work effort for exceptions identified

148. In determining additional work to be performed based on exceptions noted, the nature and purpose of the data analytic procedure performed need to be considered. For example, if the data analytic is recalculating a figure based on factual inputs as part of a detail substantive test and an exception is noted, this is considered to be a factual error that then needs to be evaluated in accordance with ISA 450⁴⁴. On the other hand, an exception noted during the performance of a predictive substantive analytical procedure will be treated differently in that the exception will be investigated further to confirm with this is in fact an error and whether other audit procedures may be required in the circumstances in accordance with ISA 520⁴⁵.
149. Some thoughts around the extent to which outliers are required to be tested, as discussed in paragraph 19(g) of the RFI: The auditor's approach will firstly depend on the nature, cause and circumstances of the outliers, including their source and reason for occurrence. This may naturally distinguish outliers into certain groupings that would be easier to address in terms of following up whether any exceptions are indicative of material misstatements in the population. An approach to sample outliers would only be appropriate if a particular group of outliers is homogenous so that it is possible to test a representative selection; and then the results would only apply to that particular grouping of outliers. All of these underlying principles are already contained in the ISAs.
150. In this regard, the approach to be applied could again involve building on the principles already contained in the ISAs and adapting and expanding these to accommodate new tools that have emerged as a result of the growing use of technology in the audit. With reference to the evaluation of exceptions, ISA 330, ISA 450, ISA 520 and ISA 530 are of particular importance.
151. In elaborating on this challenge, auditors must be careful in assuming that the data is correct. In addition, auditors must be careful not to doubt the results of data analytic procedures when these procedures do identify exceptions and ensure that these are followed up to understand their nature, cause and circumstances. Data analytics provides real insight into and a clear understanding of the client and confirms whether the auditor's expectations developed based on an understanding of the business were accurate.
152. The auditor must also be careful not to look at each data analytic procedure performed in isolation as the results of one test may provide insight into the performance of another procedure on an account balance or class of transactions where correlation is expected, or across various items. This again emphasizes the need to acknowledge, in the ISAs, the dual purpose or tri purpose of certain procedures.

⁴⁴ ISA 450, *Evaluation of Misstatements Identified during the Audit*

⁴⁵ ISA 520, *Analytical Procedures*

153. In accordance with the current ISAs, when the auditor applies a substantive approach (i.e. performing substantive procedures alone) in response to a significant risk, those procedures shall include tests of details⁴⁶. This also means that the only instance where the auditor would be able to rely solely on the results of substantive analytical procedures is when the risk is not considered to be significant. The question that arises is whether this principle could be reconsidered given the capabilities of data analytics. There is a view that the auditor is able to obtain more persuasive audit evidence through the performance of advanced data analytics as opposed to vouching a sample of transactions to supporting documentation. If a change in approach would be permissible, the key will be in verifying the validity, accuracy and completeness of the data. Once this has been done, the possibilities with the performance of data analytics become numerous.
154. There are endless possibilities when it comes to the performance of data analytics. It may therefore be useful to explore guidance to practitioners on the more common procedures that can be performed. This may encourage the use of data analytics because auditors will be able to link the procedures performed back to the ISAs.

Risk measurement

155. It is our view that the ability of the auditor to more efficiently and effectively analyse larger populations of data does not impact on the requirements for, and the basic process of risk assessment; it merely enhances the process and ensures that the risks identified are the actual risks that are present at the entity. The use of data analytics during the risk assessment stage will therefore enhance the quality of the audit performed. It would be appropriate to explore guidance to support practitioners in relation to the questions raised in paragraph 19(h) of the RFI.

Challenges in applying the documentation requirements when applying data analytics

156. Refer to paragraph 106 to 109 of this document for comments provided in relation to audit documentation.

The importance of establishing quality control processes

157. Currently, a quality control review is performed in accordance with ISQC 1⁴⁷ and ISA 220⁴⁸ (also taking into account the IAASB's current quality control project as highlighted in paragraph 33 to 34 of the RFI). The engagement partner is held responsible for the overall quality of the audit and the performance of the audit in compliance with the ISAs. Quality control reviews are also performed on the procedures performed by the IT expert, if applicable.
158. Again, we believe that the principles contained within the extant ISAs relating to quality control are sufficient to incorporate/accommodate the use of data analytics in the performance of an audit. A check should be performed to consider whether the quality control requirements and related application material may have to be enhanced to address an audit firm's development and change considerations pertaining to the use of technology and tools in an audit of financial statements, including data analytics.
159. Part of the audit firm's own control environment with respect to the use of technology will include its procedures and processes pertaining to the develop-or-purchase decision, related implementation, as well as program change controls and access controls.
160. With the move towards integrating the function of the IT expert and the auditor, where planning of the audit is performed together and the review of the general IT controls is performed together, the demand on the auditor with respect to direction, supervision and review may

⁴⁶ ISA 330, *The Auditor's Responses to Assessed Risk* para 21

⁴⁷ ISQC 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements and Other Assurance and Related Service Engagements*

⁴⁸ Isa 220, *Quality Control for an Audit of Financial Statements*

increase. The auditor will still be held ultimately responsible for the overall audit engagement which includes being satisfied that sufficient appropriate audit evidence has been obtained when an IT expert was involved and taking into account the various tools that may have been used in planning and performing the audit, including data analytics.

161. Due to the limited number of IT expert resources, the demands and pressures on them will increase – their involvement in audits will grow and as such, the extent of quality control review will increase. This could also have the unintended consequence of acting as a deterrent to auditors venturing into the IT arena.

Question d

Is the DAWG's planned involvement in the IAASB projects that are currently underway appropriate?

162. Based on our review of the IAASB projects that are currently underway as indicated in the RFI⁴⁹, we are satisfied that the DAWG's involvement in these projects is appropriate.
163. A matter that has been highlighted during our consultations is that data analytics has a role to play in assisting the auditor in obtaining an understanding of the entity and its environment. To this end, the focus of the DAWG should go beyond the use of data analytics as a tool for gathering audit evidence (i.e. performing substantive procedures and tests of control) taking cognisance of other capabilities of data analytics. This includes the use of data analytics during the planning stage in assisting the auditor in obtaining an understanding of the client, as well as in the performance of risk assessment procedures.
164. It is recommended that the DAWG perform a review of the entire suite of ISAs to identify the need for updating of the principles and/or enhancing the requirements and application material, taking into account the changes in the auditing environment that have occurred as a result of the growing use of technology in business and in the audit. This would focus the attention of the DAWG's continued work in IAASB projects to revise identified standards and may assist in deciding whether further, or more immediate guidance may be required in the form of an IAPN or staff publication.
165. It is further recommended that the scope of the DAWG's involvement in the current IAASB projects should not be limited to data analytics as such, but should also focus on the wider technological advancements that have been made in order for the standards to accommodate a broader scope of developments, both now and in the future.

Question e

Beyond those initiatives noted in the *Additional Resources* section of this publication, are there other initiatives of which we are not currently aware of that could further inform the DAWG's work?

166. The IIA has undertaken a similar project. IIA have developed a Global Technology Audit Guide (GTAG) which addresses how their members should make use of technology and incorporate this into the auditing process. They have created GTAG 16⁵⁰ which focuses on data analytics with the intention of providing guidance to their members on how the challenges surrounding data analytics can be overcome. The DAWG may find the information contained in GTAG useful as an additional reference source; some principles and material may find application by analogy in the circumstances of an external audit.

⁴⁹ RFI para 26 to 41

⁵⁰ GTAG 16, *Data Analysis Technologies*

Question f

In your view, what should the IAASB's and DAWG's next steps be? For example, actions the IAASB and DAWG are currently considering include:

- (i) Focusing attention on revisions, where appropriate, to ISAs affected by the IAASB's current projects.
- (ii) Exploring revisions to ISA 520.
- (iii) Hosting one or more conferences with interested stakeholders to collectively explore issues and possible solutions to the identified challenges.
- (iv) Continuing with outreach and exploration of issues associated with the use of data analytics in a financial statement audit, with a view towards a formal Discussion Paper consultation in advance of any formal standard-setting activities

167. Based on our comments provided in relation to questions a. to e. above, certain common themes have emerged. In accordance with these, the preference is for an approach that incorporates the actions in (i) and (ii) as presented in question f. of the RFI.
168. Having said that, and taking into account the pervasive and sometimes complex considerations around data analytics (and more broadly, the impact of technology) there is merit in pursuing the actions in (iii) and (iv). The distinction may probably be linked to the DAWG's continued involvement in current and future standard-setting projects, and undertaking a broader project to explore guidance to support practitioners in applying the existing ISAs.
169. The following is a summary to emphasise the key messages or themes that have emerged during our consultations, as discussed in the other sections of this comment letter:

Key messages or themes	Refer to the following paragraphs in this document
The principles in the extant ISAs are still appropriate. The challenges relating to the use of data analytics could be addressed by building on the principles already contained in the ISAs and adapting and expanding these to address new tools that have emerged as a result of evolving technology. In exploring the need for further or more immediate guidance to support practitioners, the DAWG could consider the possibility of issuing an IAPN or staff publication.	72; 131-141
The nature of data analytics is such that multi-purposes may be achieved with a single test design. This needs to be acknowledged and explored, including the link back to the ISAs in terms of the purpose of, and the evidence obtained from risks assessment procedures, tests of controls and substantive procedures. The related challenges should be addressed in the context that data analytics is seen as a tool used by the auditor in obtaining sufficient appropriate audit evidence. To this end, there is a need for additional guidance with respect to the level of assurance that the auditor derives from the performance of certain procedures, linked to risk assessment at the assertion level. Overall, data analytics present unique challenges in the context of the audit evidence model in ISA 500, including evaluating the accuracy and completeness of information used as evidence and the reliability of any tools used in performing certain procedures.	53-58; 59-61; 62-67; 68-71; 119-122; 131-141; 142-147
Data analytics has an important role to play in assisting the auditor in obtaining an understanding of the entity and its environment, and identifying and assessing risks of material misstatement. The focus of	116-118; 128-130; 163

Key messages or themes	Refer to the following paragraphs in this document
the DAWG should go beyond the use of data analytics as a tool for gathering audit evidence taking cognisance of other capabilities of data analytics, including its use in performing risk assessment procedures, while serving multi-purposes in certain circumstances.	
The auditor's documentation requirements need not be any different when making use of data analytics, but there are challenges in how the documentation requirements are applied. It would be important to further explore what constitutes proper documentation in accordance with ISA 230 and other ISAs, as relevant.	106-109
The growing use of technology in business and in the audit environment (including data analytics) should receive specific attention as part of the pre-qualification process (academic and training programs) and as part of the post qualification process (continuous professional development and the upskilling of professionals). This would have to be a shared responsibility between universities, the audit firms, professional accountancy organisations and standard-setters. Although initiatives are required to address some immediate knowledge and skills needs, the longer-term focus should be on the "auditor of the future".	73-83; 110-115

170. Based on our consultations, we are also left with the strong perception that the principles, concepts and challenges addressed in this RFI may extend, and should possibly extend beyond data analytics. The broader context is the evolution of big data, and business' and auditors' engagement with big data. This will naturally lead to the development of various methodologies and tools to analyse and interpret data for different purposes. From an audit point of view, the auditor's procedures and any tools used to perform those procedures must be fit for purpose. This will inevitably lead to new ways of testing populations and new and enhanced skills to analyse and interpret exceptions that will place different demands on the exercise of professional skepticism and professional judgement.
171. It may be beneficial for the IAASB to establish a dedicated IT Working Group that is engaged with on all future IAASB projects to ensure that the appropriate technological considerations are taken into account. The intension may be that the current DAWG and the related project advisory group that has been established will cover such broader scope.
172. In ensuring that the auditing profession remains relevant to the market, the competency framework has to be flexible and incorporate the ever-evolving business environment. This is however seen as a long term project. In the shorter term, professional accountancy organisations (and others) need to start creating awareness around basic technological advances that impact on business. With the current state of the economy, auditing practices, especially SMPs are experiencing significant fee pressure. This, together with the rising costs of running a business is placing strain on the existence of these practices. Awareness should therefore not only include technological advancements in auditing tools, but also focus on technology that has emerged that can assist a SMP owner to run a more efficient practice.

SECTION 2: RESPONSE TO REQUEST FOR GENERAL COMMENTS

Professional judgment and professional scepticism

173. Based on the feedback received during the consultation forums, it was noted that there is a call for additional guidance on the topics of professional judgment and professional scepticism and the documentation thereof. This is addressed in terms of the DAWG's involvement in current IAASB projects⁵¹, but could be expanded to focus on the challenges and opportunities created when performing data analytics, for example confirmation bias (as mentioned) and a deeper level of insight obtained by the auditor, respectively. Data analytics is a tool that is used to enhance audit quality. The auditor often uses data analytics to confirm audit evidence that has already been obtained, which heightens the attention on the adequate application of professional judgment and professional scepticism.

Timeframe for this project

174. With the rapid pace at which technology is evolving, the timeframe for completion of this project requires careful consideration. If the DAWG were to take two to three years to complete this project, the information may be out-dated by the time any publications are issued.

175. To this end, any standards that are developed have to be flexible and be able to accommodate developments in the business and auditing environment (in the context of the general constraint that nobody can predict the future). The standards cannot be prescriptive in setting out detailed requirements on how data analytics should be performed. With the rapid pace at which technology evolves, the standard-setters will not be able to keep standards with too specific requirements up to date, given the current timeframe taken to draft and issue standards.

⁵¹ RFI para 28-31