

**Responses to ED-315<sup>1</sup>**  
**Comments on ‘Automated Tools and Techniques’**  
**NVivo Report 4A**  
**(FOR REFERENCE)**

**01. Basel**

All references to automated tools are in the application material or appendix. We would recommend that the “requirements” section of the standard, e.g. paragraph 18 of ED-315, include a reference to automated tools as their use is prevalent today. In this regard, we note that the Executive Summary in the Explanatory Memorandum for ED-315 states that the standard has been revised to explicitly acknowledge how auditors may use automated tools to perform risk assessment procedures.

**05. IAIS**

The application material explicitly and rightly acknowledges how auditors may use automated tools and techniques including data analytics, to perform risk assessment procedures. The IAIS believes these tools and technologies will likely have a significant impact on the result of the risk assessment and consequently on the audit procedures. Thus, we believe that the application material could include additional guidance regarding their use.

**06. IFIAR**

The use of automated tools and emerging technologies including data analytics will likely have a significant impact on risk assessment and other audit procedures in the future. We believe the standard should include additional discussion of their use in the application guidance to support the risk assessment process.

We also note that paragraph A15 indicates that procedures performed for risk assessment, including data analytics, could also be considered substantive procedures or could be performed concurrently with substantive procedures. We are concerned that this statement on its own could lead to auditors erroneously considering risk assessment procedures to have provided substantive assurance.

**08. IRBA**

We agree with the approach taken to enhance ED-315 in relation to automated tools and techniques, including data analytics, using examples to illustrate how these are used in an audit. We further support the use of the term “automated tools and techniques” instead of “data analytics” as the former encompasses data analytics and more, which will ensure that the ISA is fit-for-purpose.

We, however, recommend that the IAASB defines what is meant by automated tools and techniques to ensure consistent application of the term by auditors. The definition should be broad to accommodate changes in technology (i.e. the definition must be fit-for purpose). Further, the definition should include material to remind the auditors that the use of automated tools and techniques should not eliminate the application of professional judgment and professional scepticism, but rather support the process of risk assessment and identification.

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<sup>1</sup> Exposure Draft International Standard on Auditing 315, *Identifying and Assessing Risks of Material Misstatement*

#### 09. UK Financial Reporting Council

We agree with the approach taken by the IAASB to enhance ED-315 in relation to automated tools and techniques, including data analytics, through the use of examples. We also agree that the examples provided in the application material are sufficiently comprehensive in clarifying in what circumstances the auditor might use automated tools and techniques.

We support the IAASB's decision to avoid prescriptive requirements about how audit evidence is obtained through automated tools and techniques. Detailed requirements that focus on specific technological advancements, such as data analytics, would lack the necessary flexibility to be adaptable to changing circumstances and may inhibit innovation. We also agree that the use of such automated tools and techniques have greater implications for other ISAs, such as those related to audit evidence, particularly ISA 500.

We strongly agree with the IAASB's decision to use the broader phrase 'automated tools and techniques' to recognise evolving technologies collectively, inclusive of data analytics.

#### 11. Australian A&A Standards Board

Yes, the AUASB agrees with the approach taken of using examples to illustrate how automated tools and techniques may be used in risk assessment. Our stakeholders support the explicit reference to and inclusion of examples of automated tools and techniques. We are also supportive of avoiding terminology that may become outdated quickly.

We consider that ED 315 could be further enhanced by addressing:

- How automated tools and techniques may be used for risk assessment, and how they meet or impact the requirements of ED 315. This is to avoid automated tools and techniques being applied in addition to the current requirements.
- What are the requirements in relation to understanding and/or obtaining evidence over the reliability of underlying data (information produced by the entity) used within automated tools and techniques that are used for risk assessment (including the nature, timing and extent of testing).
- Risk factors relating to the use of big data and automated analytics technology.

In addition, paragraphs 54 and A15, A18 and A32 – 33 could be enhanced by including:

- Risk considerations or documentation requirements specific to the use of predictive analytics or analytic tools that incorporate machine learning or artificial intelligence (AI) by both entities and auditors, particularly the nature of what is considered "audit evidence".
- Documentation requirements for analytic procedures to allow for re-performance where machine learning is used by an entity and/or the auditor.
- Consideration of the requirements in relation to General Information Technology Controls testing and database control assurance required when using automated tools as part of risk assessment.
- Documentation requirements on the appropriateness and reliability of external data sets (being data sets external to the entity's sphere of control).

- Guidance on how audit analytics and automated tools can be used to assess qualitative inherent risks factors described in section A5.

## 12. Canadian AASB

Yes, we support the approach taken in relation to automated tools and techniques. We agree it should be acknowledged and kept general as changes in this area happen quickly. This is the best approach to future proof the standard.

## 13. CNCC-CSOEC

We agree with the willingness of the IAASB to modernize and update the ISA to make it fit for purpose in today's technological environment. We agree with the approach taken to enhancing ED-315 in relation to automated tools and techniques including data analytics, through the use of examples to illustrate how these are used in an audit.

Nevertheless, we are of the view that the considerations regarding data analytics and automated tools and techniques could be made more visible in the text of the standard. We are of the view that the ED-315 is not disruptive enough and remain old-fashioned with respect to the issue of automated tools and topics. We suggest that the ED further explains how the use of automated tools and techniques, including data analytics, may affect the nature and extent of certain "traditional" risk assessment procedures.

Developing the topic of using data analytics and automated tools and techniques in the application material tends to minimize the importance of using technology tools from the earliest stages of the audit, especially in risk identification and assessment process. We therefore suggest IAASB add a specific point in paragraph 18 (i.e. 18d) to indicate that the risk assessment procedures shall include the data analytics when the engagement team has decided to use automated tools and techniques for its audit.

## 14. Hong Kong Institute of CPAs

It is helpful for IAASB to enhance its guidance on the use of automated tools and techniques.

## 15. IDW

We agree with the approach taken in the draft in relation to automated tools and techniques, including data analytics, through the use of examples to illustrate how these are used in an audit. There are, however, many issues that remain unresolved with respect to automated tools and techniques as identified in responses to the IAASB consultation paper on data analytics, but we recognize that the project to revise ISA 315 may not be able to resolve these. For these reasons, we very much welcomed the initiative by the IAASB in its previous consultation on the issue and urge the IAASB to address these issues as part of its contemplated new project on audit evidence in the near future.

## 16. Japanese Institute of Certified Public Accountants

We support that ED-315 provides examples of how the automated tools and techniques are being used, and that the standard does not define the term "data analytics." In this regard, we propose to eliminate the second sentence in paragraph A33: "Applying automated analytical procedures to the data may be referred to as data analytics." The term "data analytics" appears only in this sentence, and the reference to "data analytics" appears to contradict the proposal not to define the term. Additionally, because of the second

sentence in paragraph A33, some readers may misunderstand that the term “a spreadsheet” in the third sentence refers to only “data analytics” due to the structure of this sentence.

#### 17. Malaysian Institute of Accountants

We agree with the adopted approach taken in relation to automated tools and techniques. We recommend that the IAASB consider providing guidance on the need to gather an understanding of the data sources and the underlying reliability of the data sources.

We also urge the IAASB to expedite revisions to other auditing standards to acknowledge how an auditor may use automated tools and techniques, including data analytics, to obtain substantive audit evidence.

#### 18. Nederlandse Beroepsorganisatie van Accountants

Automated tools and techniques are mentioned in the ED but only in the application material with some examples. We recommend that the IAASB gives this more prominence and pay more attention as to how these tools and techniques can be applied in practice to provide sufficient and appropriate audit evidence.

We acknowledge that automated tools and techniques are mentioned, but only in the application material. We understand IAASB’s reluctance to prescribe too much in detail (and rules based), but we consider only examples not to be sufficient to enable the use of automated tools and techniques. In our opinion, more attention should be paid as to how these tools and techniques, including data analytics can be applied in practice. For example how data analytics provides sufficient and appropriate audit evidence.

#### 19. National Board of Accountants (Tanzania)

We agree with the approach taken to enhancing ED-315 in relation to automated tools and techniques, including data analytics, through the use of examples to illustrate how these are used in an audit

#### 20. NZ Auditing and Assurance Standards Board

Yes. The proposed approach is appropriate. The NZAuASB believes that the reasoning in paragraphs 20 to 23 of the Explanatory Memorandum soundly supports the adopted approach in ED-315. The NZAuASB has not identified any areas where additional guidance is needed in relation to automated tools and techniques.

#### 21. Altaf Noor Ali Chartered Accountants

Yes.

Nature of further guidance. The data analytics may also involve further splitting of the underlying data into sub-categories, for further understanding and valid conclusions about account balances, class of transactions and disclosures. ‘Audit Schedules’ are prepared by auditors or by the client on direction of the auditors for further analysis or validating conclusions. As audit evidence these schedules become a part of working papers. Data is transformed into information, often not available readily on information systems. Such audit scheduling by auditors is one technique used by auditors to learn about the composition of data which may in turn point to the risks. Is there a need to recognise such practice as helpful in the process of identifying risk?

## 22. BDO International

Yes, on balance we are supportive of the approach adopted by the IAASB to use the term 'automated tools and techniques' as a means of modernising the ISA to reflect increasing use of technologies in a continually evolving environment. This explicit reference is a step in the right direction (moving the ISAs away from the current position of not expressly prohibiting use of technologies while also not promoting them either).

We agree that making reference to the concept of audit data analytics only would have been unnecessarily restrictive and may have limited the use of emerging technologies (artificial intelligence, bots, drones, etc.).

The term and usage of automated tools and techniques provides flexibility within the Exposure Draft:

- To enable auditors to make use of new and emerging technologies as part of the risk assessment procedures, and
- Not to prescribe it (as a requirement) when auditors may not have these resources available to them or the audit work may be best performed through non-technology procedures.

The approach adopted by the IAASB takes into the account the increasing pace of technological change, varying levels of investment or areas of technology focus by audit firms and the efforts they are taking within the profession to help improve audit quality and audit efficiency (as well as providing improvement recommendations provided to audit clients) through increased use of technology. As a result, we support the use of examples within the Application and Other Explanatory Materials as a means to convey the potential use of these technology solutions without being unnecessarily prescriptive or restrictive.

We support the amendment to A15 to highlight the potential for using technology on large volumes of data which can enable auditors to examine a full dataset in order to look for: (i) information to support risk identification and assessment and (ii) recurrence of data anomalies or exceptions which may also help auditors identify potential RMMs as being remote or not. Acknowledging the potential use of automated tools and techniques as part of A18 also helps to provide reassurance, and potentially some encouragement, for auditors to consider how they can use alternative technology-led approaches to perform risk assessment procedures.

The specific examples in A33 (extracting data from an entity's information system and analysing this data through use of visualisation techniques), A48 (using technology to understand the flows of transactions and processing as part of understanding the Information System) and A175 (automated procedures to analyse full population of journal entries, including personnel and authorisation) are simple, yet practical examples of how technology could be used by auditors as part of risk assessment procedures. The way in which these examples have been presented also does not appear to restrict future innovation as technologies continue to develop and auditors identify additional steps that can be undertaken using other (automated) tools and techniques, including tools for the assessment of soft controls for example.

An area where the IAASB may need to consider the provision of further implementation support (whether as guidance or staff papers) is when technologies are initially being used for risk assessment purposes and through continual refinement of data or improved understanding of the data, change into becoming a procedure that has the potential to generate audit evidence (perhaps through modification of the initial risk assessment procedure itself). Such guidance would emphasise a much more iterative audit approach and would help to remove the distinction between the planning and execution phases of the audit. Also, as we note in our responses to Questions 8 and 10 below, we take the view that the IAASB's revision of ISA 315 should seek to remove unnecessary or potentially duplicative requirements (such as paragraph 18 in ISA

330) to reflect how increasing use of automated tools and techniques and being able to ‘see’ entity data through a digital lens can potentially provide for a more rigorous risk assessment process.

In this type of scenario it can be difficult to determine whether a risk assessment or obtaining audit evidence procedure is being performed (or the tipping point at which it moves from one to the other). For example, some technologies can be used to look at the flow of data (such as process mining) within a system and potentially across an entire dataset and financial period. While this could help identify gaps in the flow of data (and highlight whether certain online processes or controls have or have not been performed, or certain transactions put through an alternative part of the system), it could also give rise to a question about whether the residual data population (i.e. the population that successfully went through all the controls, processes and the financial system) has the potential to generate some level of audit assurance, whether further audit procedures are necessary, and if so, what those procedures would be. These hybrid types of procedures may become increasingly common as audit firms continue to experiment and expand their auditor toolkit of procedures and it would be a useful area for the IAASB to consider this type of issue as part of the work of Data Analytics Working Group.

#### 24. Crowe International\

We agree with the adoption of the term “automated tools and techniques”. The development of new audit applications is changing the way that audit is conducted, and further rapid change can be envisaged. Whatever applications are applied, it is critical that audit fundamentals are respected.

Taking account of this, we welcome the table in Appendix 1. It is important that the standard illustrates how applications can be used to support the application of the fundamentals of the standard. That said, as IAASB formed a data analytics group in 2015, we might have expected the content of this table to be more extensive. We recommend that after the comment period closes, IAASB takes the opportunity to discuss with auditors how applications are currently being applied to enable the examples in the final standard to be more extensive and reflective of how auditors are working at the time the standard is issued.

#### 25. Deloitte

Inclusion of automated tools and techniques

The inclusion of automated tools and techniques within ED-315 has modernized the proposed standard to better reflect the risk assessment procedures being performed by auditors today, and in the future. DTTL believes that the advancement of automated tools and techniques will continue to improve the auditor’s ability to perform a more thorough and thoughtful fact-based risk assessment and as a result, will support audit quality. DTTL supports the Board’s focus on the relevance of ED-315 for today’s audit as well as the audit of the future. DTTL encourages the Board to continue to consider if additional guidance is needed to support the incorporation of automated tools and techniques, such as guidance around the use of data within automated tools and techniques (**see response to question 3 in Appendix I**).

As discussed in our cover letter, DTTL believes that the inclusion in the proposed standard of automated tools and techniques, including data analytics and visualization techniques, was fundamental in updating the proposed standard to correspond with the technology used in audits today and in the future. DTTL believes that the use of such tools, if available to the auditor and appropriate in the circumstances, is critical in supporting a fact-based risk assessment. Finally, DTTL believes that it is important that the inclusion of automated tools and techniques be incorporated through examples rather than requirements,

as tools and techniques may not be available to all auditors and DTTL does not believe that the board intends to inadvertently create barriers to audit innovation.

DTTL believes that additional enhancements should be considered to the ISA standards regarding the use of automated tools and techniques. Specifically, the Board should consider if guidance is needed on procedures the auditor should perform relating to data that is being utilized in automated tools and techniques to evaluate its reliability, such as procedures around obtaining data, the preparation of data and the evaluation of the output of the automated tool or techniques. DTTL believes that this guidance could be incorporated into the IAASB's project on ISA 500, Audit Evidence, either as part of a revision to the proposed standard or through non-authoritative guidance.

#### **26. EY Global Limited**

Yes, we agree with the approach taken, as noted in the introductory paragraphs of our letter. We believe that automated tools and techniques, including data analytics, can play a key part in the audit, and that their role in the audit will increase over time.

#### **27. Grant Thornton**

We agree with the approach taken to enhance ED 315 in relation to automated tools and techniques, including data analytics, and through the use of examples to illustrate how they are used in an audit. However, we would recommend that the IAASB consider the potential for working on a definition of "automated tools and techniques" in the future, as artificial intelligence becomes more prominent in the profession.

#### **28. KPMG IFRG Limited**

We agree with the approach taken and find the illustrative examples helpful. We believe this is appropriate in terms of the objective of modernising the standard and making it fit for purpose in today's technological environment.

We are supportive of the approach to avoid the use of terminology that is overly precise/narrow, or may be understood differently by various groups, as this is a rapidly developing field and we recognise the IAASB's intention not to outdate itself at the outset.

However, we suggest the IAASB further explore the impact of Data and Analytics (D&A) specifically on risk assessment, in terms of whether and how the nature and/or extent of the risk assessment procedures as currently described may change in an audit environment in which the auditor is able to incorporate information about all transactions, and at any point in the processing cycle, into its risk assessment process. If the IAASB includes further clarification, as we suggest in our overarching comments, as to the purpose of the "understanding" that is obtained in respect of each component, as well as the specific areas that are "evaluated", this will assist an auditor in determining whether D&A techniques may be applied as an integral part of risk identification and assessment, or may constitute the identification, assessment and the response concurrently. Paragraphs A33 and A213 touch on this but at a very high level. We recognise that there is a discrete IAASB project to consider the implications of this on an audit. However, given the significant advances in technology and innovation that have fundamentally changed the way in which businesses operate, and the related considerations as to how the audit profession may harness technology to continually improve the audit process, it would be helpful to further acknowledge this area in the ED at least to pave the way for change or recognise the general direction of travel.

### 29. MNP LLP

We think that ED-315 sufficiently addresses the use of automated tools and techniques. The guidance provided is detailed enough for application; however, it is not so prescriptive that it will limit an auditor's use of automated tools and techniques.

### 30. PwC International

We are supportive of the approach taken within the ED, referring broadly to technology and the use of the generic term "automated tools and techniques", rather than "data analytics", as an umbrella term that seeks to avoid prematurely prescribing certain techniques or inadvertently implying unduly narrow boundaries on how such techniques may be used and what evidence they can provide. We do, however, note that not all tools are necessarily automated. Therefore, the Board may wish to consider whether a term such as "technology enabled (or assisted) tools and techniques" may be more appropriate.

Recognising and embracing the opportunities that technology can bring to an audit of financial statements is, in our view, critical to maintaining the relevance of the profession and driving audit quality in the future.

We feel that the guidance included in the ED strikes broadly the right balance for the topic at this time, but highlight two points for the Board's further consideration. Firstly, we believe it is important, as the use of such technology tools increase, to recognise that in many cases these can replace the more traditional risk assessment procedures the auditor might perform. We don't believe the intent was to suggest that such tools are incremental to other procedures and we would encourage that point to be made clear, avoiding any use of terms that might imply otherwise (for example see paragraph A155 that refers to identifying "additional" risks).

Secondly, we believe it would be helpful to give further consideration to the future technology enabled environment and, specifically, in the context of GITCs, the impact of cloud-based solutions on how the auditor would consider such controls. Likewise, seeking to understand GITCs around Artificial Intelligence systems may be quite fundamentally different. Cryptocurrency and blockchain also raise similar questions. ISA 315 cannot reasonably answer all these questions at this time. However, we believe it would be useful for the Board to consider if, and to what extent, the standard can acknowledge the impact of such technology on the auditor's risk assessment considerations.

Consideration of the need for any broader changes should be addressed through the IAASB's proposed Audit Evidence project, when matters can be considered on a more holistic basis across the audit, taking into account the implications for the execution standards. For example, what evidence (credit) can be taken from analysing 100% of a population, or what if such analysis concludes there are no apparent anomalies and hence no risk – is some form of further testing still needed?

### 31. RSM International

We welcome the paragraphs and associated guidance in the ED which deal with automated tools and techniques. However, without the accompanying completion of the project on data analytics by the IAASB, it is incomplete.

### 32. Office of the Auditor-General of Alberta

Yes – we agree with the approach taken and consider the approach taken to incorporate scalability, specifically 315.A30 – .A34. We note the ED does not include any subsequent amendments to ISA 520 Analytical procedures. We agree the Board should consider possible amendments to ISA 520 given the

proposed amendments to 315, specifically amending 520.05-.06<sup>2</sup>. Secondly, additional amendments should be made to 330 to incorporate what impact, if any, the automated tools and techniques have on substantive procedures – specifically sample sizes.

### 33. Office of the Auditor-General of Canada

Yes, we found the references to automated tools and techniques, including data analytics, appropriate and relevant. Other areas where automated tools and techniques are used in audit is in understanding and evaluating the design of general IT controls.

### 35. US Government Accountability Office

We agree with the approach taken to enhance ED-315 in relation to automated tools and techniques. We have not identified other areas within ED-315 where further guidance related to these is needed.

### 36. Swedish National Audit Office

Yes, we agree with the approach taken. Considering the evolving nature of this area, we also believe it might be the only relevant approach.

### 37. Wales Audit Office

We very much welcome the enhanced focus on information technology and in, particular, the recognition of the increasingly important role of 'data analytics'.

We consider that there is a need to strengthen the guidance to the effect that, if data analytics are to be relied on by the audit team, then sufficient work needs to be carried out on the controls applied to the systems providing the data. It is only appropriate to rely on conclusions gathered from data if that data can itself be relied upon.

### 38. ACCA-CAANZ

We agree with the approach taken in relation to automated tools and techniques, such as data analytics. We are particularly in favour of recognising that there are various automated tools and techniques with data analytics only being one of them. Furthermore, it is positive to see that it is also recognised that not all audits will involve the use of automated tools and techniques.

We therefore consider it vital that the guidance is included, allowing practitioners to be comfortable in using such tools and techniques. The guidance can be enhanced by referring to specific examples of how such automated tools and techniques can be applied to less complex audits. The guidance can also make reference to when it is appropriate to use such tools and techniques and when it can be relied on.

We welcome the recognition in the Application and Explanatory Material that risk assessment procedures may sometimes be performed concurrently with substantive procedures or tests of controls. It would be helpful for there to be further guidance on how this might be documented, including how the auditor should satisfy themselves on data integrity. One often-raised question on data integrity relates to the difference in work effort that might be applied to data used solely for the purpose of risk assessment as compared to data that forms part of the evidence in a test of control or substantive procedure.

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<sup>2</sup> This comment was incorporated into the analysis of comments on conforming amendments

### 39. Accountancy Europe

The examples illustrating how to leverage their use in the early stages of the audit are helpful. Nevertheless, the considerations regarding data analytics and automated tools and techniques could be made more visible in the text of the standard. Pushing the topic of using data analytics and automated tools and techniques in the application material seems to minimize the importance of using technology tools from the earliest stages of the audit. As part of the revision of ISA 500 on audit evidence, there is a lot more to be done by the IAASB to promote the use of automated tools and techniques.

Although in the current environment the use of automated tools and techniques is not uncommon, at least at a basic level, the standard should specify that (i) the use of such techniques in the risk identification and assessment process is a matter of professional judgement, since many small or medium practice firms do not have access to automated tools and techniques and the circumstances do not require their use; (ii) data analytics and automated tools and techniques are not adding to the work effort required in the risk assessment and identification process, as leveraging on their use should replace part of the extant procedures.

### 40. AICPA

We agree with the approach taken, and we believe that no further guidance is necessary in the application material of the standard. However, we encourage the IAASB to consider additional projects to develop guidance for which the auditor's understanding of potential data analytics, including use of emerging technologies, could be further enhanced.

### 42. Chartered Institute of Public Finance & Accountancy

CIPFA is content with this approach.

### 43. CPA Australia

We welcome the incorporation of automated tools and techniques in the standard along with the examples provided. Although deeper consideration of how the risk assessment may be altered by the use of such techniques and the kind of techniques which may be useful in risk assessment could be explored, even if it is in separate guidance material.

Further application material may be helpful on the use of big data from sources outside of the entity's information system as well as information held within the entity which is outside of the management information and financial reporting systems, such as within email and document management systems.

### 44. EFAA

We agree with the IAASB's approach to use the term automated tools and techniques in the ED.

The rapid integration of digital technologies into the financial reporting and auditing process is a key challenge for the profession. Accordingly, ISAs need to accommodate and anticipate this development and demonstrate the compatibility of the risk-based audit approach of the ISAs with such automation. The Board, therefore, is right to modernize this ISA and others for such developments.

As we state under our general observations above while we welcome the inclusion of automated tools and techniques in ED-315 we note this is only done in the application material supported by some examples. We suggest the Board affords this more prominence and consider how these tools and techniques can be used to provide sufficient and appropriate audit evidence.

We believe that the term 'data analytics' is too narrow since it may not encompass all of the emerging technologies that are being used when performing a risk assessment and audit procedures. While we accept that this will be considered further as part of the IAASB's upcoming Audit Evidence project, we believe it would be very helpful if separate implementation support could be developed to cover significant existing challenges in practice. We especially welcome guidance on the audit procedures for commercial off the shelf software, how to deal with security issues when using

#### 45. Finnish Association of Authorised Public Accountants

In our opinion, the automated tools and techniques (ATTs) are "only" tools and techniques, and should therefore not be incorporated in standards. It should, though, be made sure that the standards do not restrict or prevent the efficient use of ATTs.

#### 46. Fed of Prof Council of Economic Sciences (Argentina)

We agree with ED-315's approach to the use of such tools and techniques, as well as the understanding of the need not to require the use of tools and techniques that might not be available to all auditors and that could, in judgment of the auditor, not being necessary or appropriate in the circumstances. We consider important the development of application material in ED-315, and with providing examples of how automated tools and techniques are used.

Are there other areas within ED-315 where further guidance is needed in relation to automated tools and techniques, and what is the nature of the necessary guidance?

We do not detect other areas.

#### 47. FSR Danske Revisorer

A number of users of the extant ISAs believe that the ISAs need to be redrafted as they do not support the use of automated tools and techniques, including data analytics. It is important to make it clear to the users that the use of these tools is possible and to inform the users how these tools can help improve audit quality, including the robustness and effectiveness of the risk assessment, especially when auditing large complex entities.

Describing the possible use of automated tools and techniques in other places in the standard besides the application material would support the importance of using automated tools and techniques as part of the risk assessment.

As the relevance and importance of using automated tools and techniques increase with an entity's complexity, it could be relevant to include this as part of the scaling considerations. This could also be seen in the light of SMPs not having the same access to automated tools and techniques as larger firms.

#### 48. Interamerican accounting association (South America)

Yes, we agree with the approach adopted in the improvement of ISA 315 (Revised), including the analysis of data through the illustrative examples that are presented especially in Appendix 1; Moreover, we understand that the incorporation of technology, especially automated techniques, is an imposition of its application in full fact, since nowadays a high percentage, around 20% of global audits are being conducted with the robotics help, be understood by audit software.

Definitely, there are other areas such as planning, the determination of materiality (in its various classes), programming, data capture (not only the analysis) and the preparation of the audit report require the assistance of automated techniques.

#### 49. Instituto dos Auditores Independentes do Brazil

Yes, we are supportive to the use of the term 'automated tools and techniques' to reflect a continually evolving environment. Recognising and embracing the opportunities that technology can bring to an audit of financial statements is critical to maintaining the relevance of the profession and driving audit quality in the future. However, making reference only to data analytics can be prejudicial in limiting further emerging technologies, such as artificial intelligence, drones, data mining etc. Thus, we suggest including just as examples in the application material.

#### 51. Institute of Chartered Accountants in England and Wales

The manner in which IAASB has dealt with automated tools and techniques is adequate, but only just. Our outreach indicates that respondents had expected considerably more in this space given that data analytics are currently used principally in the risk assessment. Nevertheless, we look forward to the discussions concerning data analytics in IAASB's forthcoming audit evidence project.

#### 52. Institute of Chartered Accountants (Ghana)

Yes, we agree with the approach taken to enhancing ED-315 in relation to the automated tools and techniques. We agree with the fact that the approach considers the use of automated tools in performing risk assessment procedures. The use of automated tools and techniques to understand the entity and its environment and finally the use of automated tools to assess the nature and extent of controls over journal entries. It is important for the auditor to consider an entity's use of Information Technology considering the nature of complexities and maturity of the client's technology through the use of IT audit tools. The suggestions are excellent in the application of data analytic techniques to the risk assessment process, such as identifying more areas of possible misstatement, understanding the entity and also understanding the controls or lack of controls that exist in interfacing with the accounting information system especially in identifying whether all SCOTABD have been identified.

We are not aware of any other areas to apply automated tools/techniques.

#### 53. Institute of Chartered Accountants of Pakistan

In general, we are supportive of the IAASB consideration of the technological environment in the revised standard. Therefore, we agree that discussion on the matter through application material (Appendix 1) and observe that the examples are very relevant for auditor's risk assessment process.

However, we understand that further guidance (definition, scope etc.) on automated tools and techniques including data analytics should be given in the revised standard for reader's understanding. This is also necessary owing to the fact that data analytics is an emerging concept and its use is not common in most of the underdeveloped countries, especially on less sophisticated audit clients. Therefore, the practicability aspect of the use of automated tools and techniques and data analytics requires further consideration.

#### 54. Institute of Chartered Accountants of Scotland

With regard to how the use of automated tools and techniques, including audit data analytics, might be incorporated within ISA 315, much of this will be determined based on the auditor's judgement and the revisions only make reference to the use of such tools and techniques without explaining the impact of their use on the risk assessment or audit process. However, we acknowledge that ISA 500 might be more appropriate for dealing with this issue.

Although the use of automated tools and techniques is becoming more widespread, at least at a basic level, the standard should make it clear that the use of such techniques in the risk identification and assessment process is not a requirement, since many small or medium practice firms do not have access to automated tools and techniques. Furthermore, the ED could highlight that the use of data analytics techniques and automated tools and techniques do not increase the work effort required in the risk assessment and identification process, as leveraging on their use might replace some of the current procedures.

#### 55. Institute of Chartered Accountants (Zimbabwe)

Yes

With the evolution of technology globally and impact on financial reporting and controls this moves auditing to an advanced level and places a further expectation on the part of the auditor

The IAASB does need to ensure that the examples cover a wide array of scenarios in which automated tools are used covering different industries.

There were no other areas that require further guidance in relation to automated tools and techniques were noted.

#### 57. Institute of Public Accountants

The IPA disagrees with the approach to "data analytics". It fails to consider what audit procedures are required to be undertaken to place reliance on the data that is being used by such data analytical procedures. Such procedures are required to determine the validity of the data being analysed and will take a combination of test of controls on the underlying data transaction streams and tests of applicable general controls. The IPA also notes the approach to data analytics is inconsistent with the process required by ISA 520 which requires the consideration of the reliability of data and indicates testing operating effectiveness of controls relating to data subject to analytical review procedures.

Furthermore, ISA 315 (or another standard) needs to address the use of "big data" or "meta-data" arising from client data warehouses where the data has been sourced from systems (internal or external) that are not subject to internal controls often applied to financial reporting systems.

Finally, the IPA is concerned the example in ISA 315.A15 stating that analytical procedures performed using data analytics during the risk assessment process can be used to provide substantive audit evidence. This example implies that no audit procedures are required to ensure the validity of data used in such procedures.

#### 59. Malaysian Institute of CPAs

Yes, the Institute welcomes the inclusion of guidance, through the use of examples, on the use of automated tools and techniques, a term which is broader than mere "data analytics".

ED-315 does not require auditors to use automated tools and techniques. However, if they choose to do so the examples provided in the application material should suffice to guide accordingly.

#### 60. New York state society of CPAs

The revisions noted in the exposure draft will promote a more robust process as they address scalability and "...recognizes that the auditor's ability to serve the public interest includes the ability to apply the standard to the audits of financial statements for all entities, ranging from small, simple, non-complex entities to large complex, multinational entities" (paragraph 13). However, the extant standards do not address the evolving business environment and changes in economic, technological and regulatory changes over the years. We support the changes as to the modernization of the standards, which will provide a more relevant and robust risk identification and assessment process. Nevertheless, the risk identification and assessment process should provide for more frequent updates of the standards, since changes in technologies and impacts on global economies are accelerating.

Standards are generally neutral as to identifying specific applications, since technology changes so rapidly. Specifying how auditors should adjust their risk assessments to take into account exciting new technologies of the day is appealing; we suggest, however, that the Board adopt a more principles-based approach. This is because it is possible that the guidance relating to the most "new" technologies may become outdated by the time the standard is finalized and may never be implemented in the manner the Board intends. For example, we suggest that the standard explain that when new technologies are implemented that affect financial transactions and audit procedures, auditors should understand and document the following risks, for instance:

- Developer bias
- Inferences developed with inaccurate and incomplete information
- Automated decision making with invalid inferences
- Computer code and services that have misleading names are not what they purport to be, and may have fatal flaws that are not widely known and that result in irreversible material financial consequences.

#### 61. PAFA

PAFA is comfortable with the approach taken with regards to data analytics in recognition of the advancements in technology and their use in the audit process. The examples provided are also useful in providing insight on how the automated tools and techniques are being used without trying to be exhaustive and thus putting the standard at the risk of being dated.

#### 62. SAICA

When asked if there were any further enhancements needed or other approaches that the IAASB should consider in respect of the use of automated tools and techniques, a large number [42% (56/132)] of survey respondents were unsure at this stage and [39% (52/132)] said 'No'. The other survey respondents who provided suggestions, requested further guidance and examples, including whether a clearer distinction could be drawn between some more complex applications in this regard and those that are simpler (e.g. using Excel to sort, filter and analyse a data set). Specific guidance requested, includes:

- It should be clarified what the auditor should focus on in the small and medium-sized environment, when that environment is not conducive to using automated tools and techniques. Apart from indicating a need to better understand the smaller and less complex entity's context, this comment could also be interpreted as relating to an understanding of when (under what circumstances) it is appropriate to use automated tools and techniques; i.e. when and how can automated tools and techniques provide sufficient appropriate audit evidence. This would probably have to be addressed as part of the IAASB's intended Audit Evidence project.
- Clarification around the level of work and documentation required in respect of how the tool/ technique functions or how it produces information to be used as audit evidence. Again, probably something to be addressed as part of the Audit Evidence Project.

SAICA agrees with the term 'automated tools and techniques' and its use throughout the standard. It is appropriate not to require the use of automated tools and techniques as explained in the explanatory memorandum, as well as not to attempt to describe the term definitively by the work on this project alone.

#### 63. SMPC

The SMPC agrees with the IAASB's approach to use the term automated tools and techniques in the ED. We support the view that the term 'data analytics' is too narrow because it may not encompass all of the emerging technologies that are being used when performing a risk assessment and audit procedures.

We recognize this will be further considered as part of the IAASB's forthcoming Audit Evidence project, but believe that it would be very helpful if separate implementation support could be developed to cover existing challenges in practice, for example:

- Guidance on the audit procedures for commercial software that the entities do not have access to the underlying source code.
- Guidance on how to deal with security issues when using the cloud.
- Guidance on how to ensure the integrity of the general ledger from a software package, particularly if the auditor is using a separate data analytics tool.
- Guidance on how to audit primarily online or app businesses and the risks.

#### 64. Wirtschaftsprüfer

The accelerated integration of new technology into the financial reporting process and into the audit process ("digitalisation") is one of the key challenges for the profession. Accordingly the audit standards need to reflect this development and show the compatibility of the risk-based audit approach and the use of automated tools and techniques. The work undertaken to update and modernize the standard in relation to information technology is a right step given the fast-paced and evolving business environment.

At the same time we believe that further consideration is needed, perhaps as part of the IAASB's forthcoming Audit Evidence project, in order to provide guidance as well as implementation support and to outline advantages (scalability) and risks associated with automated tools (such as audit software, electronic working papers, cloud solutions) and techniques.

#### 65. Chartered Accountants Academy (Zimbabwe)

Yes, we agree with the approach taken to enhancing ED-315 in relation to automated tools and techniques, including data analytics. With new technology that is being developed, for example block chain and robotics, this moves auditing to an advanced level and places a further expectation on the part of the auditor to be able to audit transactions processed through such advanced technology, hence these sections should help address that. The auditors need to keep abreast with new technologies and emphasize on critical thinking so that their relevance is seen by the public at large. It is also important that the examples of automation be added in the standard as they can also help the auditor to understand how to apply the requirements of ISA 315 (Revised). The IAASB does need to ensure that the examples cover a wide array of scenarios in which automated tools are used covering different industries.

No areas that require further guidance in relation to automated tools and techniques were noted.

#### 66. FocusRoi Inc.

We agree with the new material and guidance.

#### 67. Lynessa Dias

Agree with the approach to include electronic data available in relation to automated tools and techniques for understanding the entity and its business model as noted in Appendix 1.

The use of analysis, recalculations, reperformance and reconciliations will help to compile and summarize information, as well as draw conclusions on the illustrated examples provided.

These examples are useful in understanding business operations and processes for risk evaluation. However, understanding an operating entity for the purposes of developing a risk assessment involves obtaining a relative assurance about the degree of reliability that can be placed on management's assertions. These assertions include:

- Existence or occurrence;
- Rights and obligations;
- Completeness;
- Valuation; and
- Disclosures

Utilizing the examples illustrated will help practitioners make an assessment on these assertions. The Board may consider including wording to emphasize the focus on these assertions, as they assist in identifying the presence of potential inherent risks and the degree of effectiveness of entity controls. By including these assertions in the flowchart diagrams the audit methodology would be more comprehensive.

#### 70. S Dianne Azoor Hughes

As a director, I observe that auditors are still requesting information to examine (relatively) small samples, when they could be examining the whole population. Further, when auditors present requests for information in their client packages to promote audit efficiencies, any "stumble across" issues are unlikely to be identified. When we consider the over-arching objective of the IAASB is public interest, I question whether it is acceptable in today's business environment for an auditor to **not** examine the whole population for anomalies and unusual items, when there are tools which make this process entirely accessible.

There are various audit tools available that enable a whole population of transactions or balances to be examined for significant or unusual items. Larger audit firms may use their own proprietary software to produce a summary report/dashboard of items needing further examination in the audit, whereas smaller firms may purchase audit software such as IDEA, CaseWare Analytics or TeamMate Analytics to achieve similar results (note: these audit tools are included as examples only in no particular order and with no endorsement). In addition, there are various tools in Excel that enable data analysis. 2018 Excel can be used to import populations and characteristics up to more than one million rows and more than 16,000 columns i.e. more than adequate for examining and sorting data in low cost audits. In very small companies, the whole population can be examined by simply reviewing transaction reports. When auditors have used audit software to examine whole populations, their reports to management on matters arising from the audit are far superior to the more 'traditional' management letter and the value of an audit is clearly visible.

There are arguments about costs of audit software being prohibitive, but audit software for deeper examination is needed to keep pace with business development and public expectations. I suggest it is time for audit expertise and audit teams to be structured in a different way, to promote more efficient and effective audit procedures. As a minimum, I recommend that the audit guidance in ED-315 should be encouraging the use of audit tools to examine the whole population, with prerequisite audit evaluation of controls to ensure the population is complete.

**Question 3** – The guidance regarding automated tools could be improved. Refer to discussion above.

## 72. American Accounting Association

ED-315 elevates the importance of automated tools and techniques, including data analytics, by describing how they might be applied in performing risk assessment (among others, paragraphs A15, A18, A33 and A48). We support the “automated tools and techniques” terminology intended to clarify and make uniform the concept of Big Data and related ideas. Since research suggests there is confusion in the definition and use of the terms Big Data, business intelligence, business analytics, and data analytics (Vasarhelyi, Kogan, and Tuttle 2015; Appelbaum, Kogan, and Vasarhelyi 2017), we suggest “automated tools and techniques” be formally defined in ISA 315.

If this suggestion is adopted, we recommend that descriptions of applying automated tools and techniques be consistent throughout ED-315. For example, paragraph A15 says, “...through the use of technology, the auditor may perform procedures on large volumes of data...” We recommend this language be changed to, “...using automated tools and techniques, the auditor may perform procedures on large volumes of data...” Additionally, paragraph A33 states, “Analytical procedures can be performed using a number of tools or techniques, which may be automated. Applying automated analytical procedures to the data may be referred to as data analytics.” We suggest: “Analytical procedures can be performed using automated tools and techniques.”

We also support the inclusion of example applications of automated tools and techniques. Beyond the generic examples included in ED-315 (e.g., recalculations, reperformance, reconciliations) and ability to examine 100 percent of the transactions in a population (paragraphs A155, A175, A213), it might be helpful to describe more explicitly how auditors might use automated tools and techniques to perform analytical procedures (e.g., trend analysis and ratio analysis) or search for outlier transactions. ISA 520 – Analytical Procedures includes an example of how data analytics might be used to test rental income (¶A8), and Appelbaum, Kogan, and Vasarhelyi (2018) provide other examples of how data analytics might be incorporated into the audit process. These examples could be described or referenced in the AEM.

Automated tools and techniques may present both opportunities and obstacles for the audit. As described by Cao, Chychyla, and Stewart (2015), implementing Big Data analytics is not a trivial endeavor; it requires individuals with expertise in data analytics, as well as appropriate hardware and software resources. Relevant skills and human resource needs may constrain rather than facilitate Big Data usage by auditors (Alles 2015). Brown-Liburd, Issa, and Lombardi (2015) suggest that “more academic research is necessary to fully comprehend the effects of moving away from more traditional audit processes to fully leverage the benefits of Big Data and how the use of more advanced data analytics will impact auditor judgment.” Based on the rationale that automated tools and techniques may not be available to all auditors or that, in the auditor’s professional judgment, they may not be appropriate or necessary in the circumstances, ED-315 does not require auditors to use automated tools and techniques. We support this position.

Since audit partners have expressed concern that professional skepticism and critical thinking may be adversely impacted by automation and standardization (Alles 2015; Boland, Daugherty, and Dickins 2018), we suggest including cautionary language that automated tools and techniques are not a substitute for professional skepticism or critical thinking.