

Detailed Analysis of Respondents' Comments on Exposure Draft: IEPS 2.1, *Information Technology for Professional Accountants*

I. General Statements of Support of Note

Comment	
ICAEW	The Exposure Draft is on the whole good, if too detailed, but rightly emphasizing the increasing importance of IT related knowledge and development across the accountancy profession.
ICAI	IEPS 2.1 is very helpful to member bodies and individual accountants because it provides an explicit IT framework for accountants. The IT learning outcomes are useful but further guidance for member bodies in terms of how those learning outcomes are to be achieved would be of benefit. The inclusion of guidance on teaching, learning and assessment methodologies would be welcome. Lastly, the primary focus of IEPS 2.1 should remain on the fundamental competencies required of accountants at the point of qualification.
Oyelade	<p>The above proposal by ifac, when finally adopted, will be a groundbreaking effort that will continue to make Accountancy Profession to be an envy of other Professionals all over the world.</p> <p>Since IT is a business driver, all travelers must be transported. Thus, there is no alternative route unless travelers would remain stagnant, frustrated and finally extinguished.</p> <p>The founders of ifac are highly forward looking while the sponsors of this proposal are wonderful. It is now obvious that the Accountancy Profession is not for non-research minded and sleeping giants. It is a Profession for the restless business anchor.</p> <p>With this proposal, critical organizational infrastructures like Water, Electricity, Railway, Gas, Aviation, Petroleum, Communication (Voice and data) and other critical functions which are directed by computer controls over an extended networks that need performance measurement, protection, disaster mitigation and adequate return on investments on them are no doubt non other persons concern than the board of directors which has in its heart the CFO. To contribute meaningfully to board decisions, IT knowledge is a sine qua non.</p> <p>I commend The Institute of Chartered Accountants of Nigeria for the creation of Faculties, in which IT is one of them. This is in line with ifac efforts, which will no doubt eliminates redundancy in Professional Practice.</p>
ACCA	ACCA recognises that IEPS 2.1 is a very comprehensive and detailed document that covers a wide range of IT aspects relating to the main roles identified in IES 2.

Comment

ICPAI	The Institute of Certified Public Accountants in Ireland is in agreement with the proposed IEPS 2.1.
CGA	This proposed standard has the potential to bring parity to the profession and can contribute significantly to the standardization of key knowledge and skills areas in the content of professional accounting education programs. There are IFAC member bodies such as CGA-Canada who have substantial experience in the integration of IT in professional accounting education and can make a meaningful contribution (through IFAC) to improving competences in IT.
ISACA	<p>As a whole, we support the IFAC board’s (“the board”) goals for the project and the resulting draft itself, which we believe accomplishes the board’s high-level objectives for most businesses. The focus is well placed and the information is pragmatic and practical, lending itself to immediate and direct use within most enterprises.</p> <p>The first two paragraphs on page 5 in the Introduction are very good. We have organized our comments into Primary and Secondary.</p>
EY	We support the efforts of IFAC’s Education Standards Board to formulate expectations on the information technology (IT) competencies that a professional accountant should display. Formulating such expectations is certainly one of the necessary steps to improve quality and maintain the public trust in the accounting profession. We also fully support the Board’s defining and assessing the specific IT competencies that a professional accountant should possess to perform his or her duties.
IDW	Information Technology (IT) has been central to the different roles of professional accountants now for a very long time. Nevertheless, IT is becoming even more important to all of these roles. We therefore welcome the intent of the International Accounting Education Standards Board (IAESB) of the International Federation of Accountants (IFAC) to further strengthen the competency of professional accountants in IT. In particular, we support the modernization of such a Statement to replace International Education Guideline (IEG) 11 as the guidance for International Education Standard (IES) 02.
PWC	Overall, we support the direction of IEPS 2.1. However, we have a concern about a small number of aspects of the Exposure Draft which, in our opinion, should be re-considered before the IEPS is issued. In addition, there are a few important matters on which, in our opinion, there is a need for greater clarity before finalising the IEPS.

II. General Statements of Concern and Related Matters for Consideration

Respondent’s Comment

Staff Comment (where necessary)

Alvarez Marsal	&	<p>There are 3 areas of emphasis, currently hot topics, that I did not find strongly presented here that affect my current role:</p> <p>1 We have a segment of our business called ‘compliance work’. We have several licensed broker dealers on staff. The regulatory framework concerning IT and communications, as well as retention of email, SMS, IM and other communication is critical in supporting these business units. Sarbanes Oxley, NASD and other regulatory bodies have an increasing integration with IT systems, Archiving and access policies. This I believe should be better covered and referenced in the core document.</p> <p>2 Voice and Data networks and data management are converging. This needs to be addressed more strongly in technology use and direction. Telephony is becoming a large part of the IT function as common switching equipment is often used for Voice and Data. It affects business efficiency, performance and utilization of IT resources.</p> <p>3 For ALL IT roles in your document, there is a component that needs to be stressed for all professionals.</p> <p>Equipment and network usage is monitored by most large organizations on a continuing basis. When working on a corporate network or connection, you should use the working assumption that all your activity is at least being monitored, if not actively eavesdropped. Most corporate networks reserve the right to observe all their local traffic and any communications with the internet or external providers from within their network. Performing personal activities, browsing inappropriate web sites, watching streaming video on a computer attached to a corporate network is highly visible to network monitoring tools in common usage. Your behavior on your computer should be on the assumption that all your activity is being monitored and logged on the computer itself. On a corporate network, you should also assume that network monitoring equipment is in use and will record and report inappropriate activity automatically.</p> <p>Specifically, Limewire, Kazaa and other file sharing applications, videos, email jokes and pornography and games should be avoided by all professionals – discovery of their use on computers can be damaging both to the user and the users firm and users should assume that their use would be detected on any corporate computer or network.</p>	<p>Compliance is not necessarily an area of core knowledge needed by all professional accountants – but is included in the appendices.</p> <p>“Appropriate use” of IT, data protection, etc is now included in the appendices.</p>
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4 Generally, in IT implementation and IT consulting, a project management certification or qualification is a good educational standard to hold. It is a starting point for project management skills expected in a professional in those fields.

Norwegian Auditor General

Our general impression of the skills required for the individual professional accountants are very ambitious and difficult to develop and maintain, taking into consideration that there are other skills that the auditor also needs within his profession. Acquiring and maintaining this level of competence will be difficult, given the other knowledge areas that a professional accountant also need to possess. In our opinion the level of knowledge required for understanding and evaluating the "General IT Knowledge/skills areas" and "General IT Control Knowledge/skills areas" are in the line of what you could expect from an IT auditor.

The general IT knowledge/general IT control knowledge sections have now been developed to allay the impression that we are setting very specialist requirements here.

We fully agree that the professional accountants needs to address the different issues that are covered in appendix 1 - 6, but we believe that the level of knowledge required for the individual auditor should be more in line with the description in paragraph 6. If an evaluation is necessary it should be sufficient that one auditor in the team has the required skills or if this is not the case, that this competence is acquired by other means.

IES 2 requires students to participate in one of the three roles (manager, designer or evaluator), or a combination, not to be an expert in these areas.

We think that identifying IT knowledge requirements based on the role areas described in paragraph 12 are hard to grasp, a bit confusing, and not necessarily an appropriate way to structure the "knowledge areas" and skill/technical levels within IT. We think that organising the issues, that needs to be addressed, under domains (more in line with the IT domains in CobiT) or more in line with the IIA GTAG 1 pyramid (figure 4) - will give a better structure and better understanding of the scope and necessary knowledge levels.

ICAEW

We agree with the Exposure Draft that IT management is a general management function about which professionally qualified accountants should be knowledgeable. It therefore seems to us to be an omission that paragraph 12, covering the roles that accountants may occupy in the world of IT, appears to exclude the important role of an accountant as manager of a general business function other than the finance function

This paragraph has now been deleted from IEPS in any case.

Oyelade

IFAC should encourage Chartered Accountants to participate in Mandatory Continuing Professional Education to meet up with the requirements of this scheme. Student of Accountancy too should have the subject spread in all the stages of the Professional Examinations and even at the Higher Institution of Learning as well as the Accounting Technician level. This I believe, will be an antidote against the present trans-border discrimination of certificates instead of each country fashioning out it's own IT compliance scheme.

The IEPS now includes a specific section on CPD.

ACCA	<p>ACCA suggests either a considerable reduction in the content (particularly in the appendices) or a change in how it is presented. If the content in the appendices is to remain, ACCA recommends that some form of hierarchical referencing system be used within the appendices to give better guidance about how essential or peripheral/specialist some of the IT competences are.</p> <p>ACCA suggests that the IEPS gives some additional guidance on the different ways in which the IT areas are best covered, as referred to in paragraph 33 of IES 2, so that member bodies are given a measure of reassurance that much of the IT content is either not mandatory, or if it is, that it is best covered in work experience or at some point during continuing professional development (CPD).</p> <p>As far as the third question is concerned, ACCA recommends that while there may be a need to recognise the difficulty in demonstrating some of the competences in the other IT roles, this issue is not best addressed by supporting an ‘advanced user’ role, on the grounds that the existing user role may already be sufficient, or could be extended or redrafted to make it so.</p> <p>ACCA supports the view that IES 2, and therefore the IEPS, should not specify that on qualification professional accountants must demonstrate competence in the user role and one other, but just require demonstration of competence in the one role, as a user, but in different capacities.</p>	<p>Detail in appendices remains, but it is made clear that this is illustrative only (IAESB felt that some education directors greatly valued this).</p> <p>Guidance on how to teach/assess IT is now included in IEPS.</p> <p>Advanced user role now deleted, and replaced with “mixed user” as per IES 2, and accompanying example.</p>
CGA	<p>We appreciate the objective of the practice statement namely, to strengthen the Information Technology skills of professional accountants and provide a common foundation for measuring the competence of professionals worldwide. This exposure draft is very thorough and well crafted with respect to coverage of the key knowledge and skills areas. The only caution there is that guidance in this proposed standard may prove difficult to implement considering the knowledge gaps that presently exist between countries with high levels of access to the most current information technologies (hardware and software) with others still at the early stages of establishing their IT infrastructure. As with any proposed standard, cost/benefit considerations no doubt play a substantive role in assessing the desirability of proposed new rules. The purpose and theory of the proposed standard is well intended and successful implementation across multiple jurisdictions will contribute enormously towards achieving parity in the training of professional accountants.</p>	<p>Task Force has added language to the IEPS recognizing different levels of development, and IEPS is structured to allow member bodies to adopt guidance most suitable for their circumstances.</p>
ISACA	<p>Suggested additions:</p> <ul style="list-style-type: none"> • The draft should mention disaster recovery planning/business continuity planning and managing outsourcing arrangements. • IT governance including an IT steering committee should be mentioned. • Given the roles defined in the EPS, it would be useful to map the knowledge defined/suggested for each role to COBIT and IT governance knowledge domains to provide that ‘road map’ to acquiring the knowledge. 	<p>Task Force believes these areas are sufficiently covered in appendices.</p>

EY We are very concerned with a number of significant aspects of the proposed Practice Statement, as outlined below. We have a fundamentally different view on key aspects of the proposed Statement. Our key concerns are as follows:

- We believe the scope of the proposed Statement is too broad and does not have the right focus. The proposed Statement defines the IT competencies for four professional accountant roles: user of IT, assurance provider, information systems manager, and systems designer. Although we agree that a person who is trained as an accountant may perform all of these roles, the roles of information systems manager and business systems designer should be outside the scope of this Statement. The proposed Statement notes that these roles could encompass, for example, a data center manager, a knowledge engineer and a designer of financial information systems manager. While a person who trained and worked as a professional accountant could make a career move to one of these professions, in doing so, he or she would not be fulfilling the roles of a professional accountant as set out in IFAC's literature. Therefore, we believe that the proposed Statement should instead address information technology competencies for three major roles that a professional accountant typically would have: (1) the professional accountant as a user of IT, which encompasses professional accountants that are financial statement preparers and/or involved in finance or tax functions; (2) the professional accountant as an audit professional, as defined in IES No. 8 and (3) the professional accountant as an IT auditor, who specializes in providing assurance on IT systems and organizations.
- We disagree with the approach taken in the proposed Statement, which does not give appropriate weight to either the divergence of skills based upon the various roles or to the progression of competencies that occurs throughout an individual's career. The user role is much too broad in terms of required IT skills, and the approach taken in this proposed Statement results in a long list, which has not been prioritized, of everything a given individual may know about IT, without any specific reference to the actual tasks and roles that professional accountants may perform, especially when in the role of an IT user. For each of the roles redefined in the previous paragraph (generalist professional accountant, audit professional and IT auditor), we believe that rather than defining a single level of IT competencies, the statement should:
 - Define the typical career progression ranks within such roles that reflect differing levels of experience;
 - Select the relevant IT competencies from the list proposed in the Statement for each of the redefined roles; and,
 - Specify the proficiency level expected for the competencies presented in the proposed Statement.

Roles are taken from IES 2 – IAESB decided that these roles are still relevant and useful in developing the IT component of pre-qualification programs.

IEPS now makes no mention of job titles, however, which were confusing the issue and making it seem as though these were highly specialized roles.

IAESB provides guidance for all professional accountants (split by pre-/post-qualification). Member bodies/employers may choose to specify competence requirements for professional accountants at different stages of their careers – would be impossible for the IAESB to do so given the enormous diversity of roles played by professional accountants.

This approach would better reflect the specific elements of knowledge and skills that are expected throughout the work life of professional accountants and their progressive acquisition of skills, while also recognizing that, over time, not only the proficiency level but also the focus of competencies to display evolves, with some competencies becoming more important, and some becoming less necessary.

In summary, we encourage a more focused approach on the primary roles played by professional accountants, and for each of these roles, recognize an evolution of the required skills. To illustrate our proposed approach, we have provided as an Appendix the possible description of IT competencies, together with their progression, for audit professionals and for IT auditors.

IDW

Although we support the IAESB in its efforts to further improve IT competencies of professional accountants in their various roles by improving the IT education of professional accountants, we have some very serious concerns about the structure and approach of the Statement and believe that the structure and approach may be inappropriate and thereby actually hinder, rather than assist, accounting educators in improving IT competencies for professional accountants.

Structure of IEPS has now been significantly altered to make clear distinction between pre-qualification, CPD and audit professional guidance.

Because of the serious nature of our concerns, we have refrained from providing detailed comments on the Statement. Rather, we will use this comment letter to convey to you the main issue causing us concern.

PWC

Consistency between IES 2 and IEPS 2.1

Paragraph 31 of IES 2 states that “A candidate needs to be able to participate effectively in the activities listed in this section as part of a team or under supervision, but would not be expected to demonstrate proficiency in all the competences.”

Task Force believes that these identified inconsistencies have now been addressed. Additional “requirements” have been removed from the IEPS.

Paragraph 27 of IEPS 2.1 describes how the expected level of competence can be evidenced. This includes “the ability to describe or explain the significance of the issues related to the listed competences and to demonstrate proficiency in those competence elements”.

It appears that IEPS 2.1 (a Practice Statement) is bringing in a higher level of requirement (demonstrating proficiency) than IES 2 (the Standard which it supports) where proficiency is not required.

In addition, the internal consistency within IEPS 2.1 could be improved. Paragraph 27 states that “... the minimum expected level of competence for the user role is knowledge and understanding ...”. As noted above, Paragraph 27 goes on to include ‘demonstrating proficiency’ as part of the evidence of this. We consider that ‘demonstrating proficiency’ is aligned to skills or application, and not to ‘knowledge and understanding’ as mentioned earlier in the paragraph.

Linkage between IES 2 and IEPS 2.1

We consider the structure of IEPS 2.1 could be improved by more closely aligning it with that of IES 2, the Standard which it supports. IES 2 sets out the subject areas and competence components for the IT component of the professional accounting education programme. We have mapped these areas to IEP 2.1 as follows:

IEPS now follows the structure proposed.

IES 2 – Paragraph 28.. component of professional accountants education :	IEPS 2.1 – Component is further explained in :
(a) general knowledge of IT	Appendix 1 – General IT Knowledge/Skills Areas
(b) IT control knowledge	Appendix 2 – General IT Control Knowledge/Skills Areas
(c) IT control competences	
(d) IT user competences	Appendix 3 – User Role IT Control Competences
(e) ... roles of manager, evaluator or designer	Appendix 4 – Assurance Provider and Evaluator Role Competences Appendix 5 – Manager Role Competences Appendix 6 – Designer Role Competences

This mapping raised the following questions in our mind, which we believe the IAESB should consider:

- Appendix 4 of IEPS 2.1 appears to introduce a new role (Assurance Provider) which is not mentioned in IES 2.
- There does not appear to be an explicit cross reference to IEPS 2.1 for the IT control competences component of the professional accountants education programme. Are IT control competences and IT user competences as described in IES 2 Paragraph 28 the same thing and therefore are covered by Appendix 3?

IES 2 also seems to focus on subject areas and competences, where IEPS 2.1 focuses on knowledge and skill areas, and focuses on competences only as far as the specific roles are concerned. Consistency of terminology between the Standard and the Practice Statement which supports it would add to the usefulness of IEPS 2.1 as a document and would help ensure readers correctly interpret IES 2.

Alignment with Certified Information Systems Auditor qualification

The CISA (Certified Information Systems Auditor) qualification is provided by the Information Systems Audit and Control Association (ISACA). This is a globally recognised qualification for IT audit professionals. To become certified students must pass an examination and also demonstrate sufficient relevant experience (5 years). The topics covered in CISA fall into six main categories:

Task Force does not believe IEPS should specifically reference non-IFAC documents.

- The IS Audit process
- IT Governance
- Systems and Infrastructure Life Cycle
- IT Service delivery and support
- Protection of information assets
- Business continuity and disaster recovery

Some of the topics included in IEPS 2.1 are consistent with those in the CISA curriculum. The competences acquired as part of the professional accountant's education could provide a pre-cursor to obtaining the CISA qualification. In this situation, consistency of the two competency statements would be useful and we recommend that this is considered by the IAESB. This is particularly the case for the IT Control Skills and the Assurance Provider and Evaluator role.

III. *Responses to Specific Questions*

1) IEPS 2.1 (formerly IEG 11) has been rewritten and updated. Is the document still helpful to member bodies in addressing the requirements of IES 2 and other International Education Standards? If you feel the document is not helpful, please explain in detail what needs to be addressed.

ICAEW	<p>Yes, the document is still helpful to member bodies in addressing the requirements of IES 2. However, we believe that the Exposure Draft is too detailed. Its level of detail will in our opinion deter or worry many and therefore may undermine IFAC’s overall purpose with the proposed IEPS. The Exposure Draft also has too much focus on IT designers and managers, all of whom already have their own rules and therefore do not necessarily need additional IFAC standards.</p>	<p>Detail in appendices remains, but it is made clear that this is illustrative only (IAESB felt that some education directors greatly valued this).</p> <p>Higher-level guidance now provided in body of document (member bodies could choose to focus on this only).</p>
ICAI	<p>IEPS 2.1 provides a valuable framework in terms of making explicit the IT competencies that reasonably fall with the domain of professional accountants.</p> <p>The document focuses primarily on the learning outcomes in terms of the competencies that accountants should have (paragraphs 22, 27, 31, 37 and 42 of IEPS 2.1). The appendices further elaborate on the topics about which accountants in various roles should be knowledgeable. However, the document does not elaborate in detail on how member bodies will achieve the desired outcomes. In other words, in addition to specifying learning outcomes, it may be helpful to provide guidance to member bodies on how the skills may be usefully taught and learned.</p> <p>Guidance of this type would be of assistance because the pervasive nature (paragraph 3 of IEPS 2.1) of information technologies can present significant challenges in terms how the subject matter is taught and learned. Whereas bodies of knowledge pertaining to, for example, financial accounting or auditing are comparatively easy to identify, and therefore easy to structure in terms of teaching and learning, identifying the boundaries of ‘information technology’ is a more difficult task. The reason is because information technology does not fall neatly within the knowledge domain of any single identifiable group of people. In other words, the meaning and significance of information technology is contextual.</p>	<p>Guidance on how to teach/assess IT is now included in IEPS, and importance of integrating IT with other subject areas is stressed.</p>

Because of its contextual nature, it is most appropriate to teach and learn about information technologies in the context in which they are likely to be used in practice. Member bodies should therefore ideally be teaching, and professional accountants learning, about information technologies in practical business contexts or, where possible, replications thereof. A contextual approach contrasts with a ‘tick-box’ approach whereby subject matter is presented in abstract form without reference to practical applications.

It would therefore be helpful for IEPS 2.1 to relate IT competencies more directly to the other competencies that constitute the education of accountants. Paragraph 14 of IES 2 in particular refers to accounting, finance, organisational and business knowledge. Paragraphs 23 and 25 of IES 2 elaborate further on those competencies. It would be helpful for IEPS 2.1 to encourage the teaching and learning of information technologies for accountants specifically in these contexts rather than presenting information technologies for accountants as a distinct abstract subject. This is consistent with the statement in paragraph 21 of IEPS 2.1 which states ‘*Education that focuses solely on conceptual material will not be sufficient for professional accountants in any work situation*’.

As an example, paragraphs 28-31 of IEPS 2.1 refer to competencies required by assurance providers. These competencies will be most effectively taught and learned by accountants as part of teaching and learning about audit and assurance in general as is required by paragraph 23(e) of IES 2. Similarly, paragraph 24(h) of IES 2 refers to accountants requiring knowledge of the business legal environment. The information technologies that relate to the legal environment (controls/ security for example) are therefore most usefully taught and learned in this context.

ICMAP IEPS 2.1 is well written, and in our judgment it would help the member bodies to address the requirements of IES 2 and other International Education Standards.

ACCA ACCA believes IEPS 2.1 gives comprehensive guidance to professional accounting bodies in accordance with the requirements of IES 2. Nonetheless, the paper may need to specify more clearly (as does the Ethics paper) how these competences can be acquired and demonstrated. It could also more clearly indicate that these competences can be acquired from a range of areas (as per Paragraph 33 of IES 2). The paper should also recognise that although different IT roles are identified, there is scope for considerable overlap between these roles, particularly between the user role and the others.

Guidance on how to teach/assess IT is now included in IEPS, and importance of integrating IT with other subject areas is stressed

ACCA believes that some paragraphs in IEPS 2.1 could be more specific with reference to IT; for example, paragraph 21 and the paragraphs 23–27 on the whole area of control competences.

IAESB decided not to define/explain IT control as definitions (e.g. COSO) already in public domain.

These latter paragraphs could be improved by containing an introductory passage explaining broadly what IFAC means by IT control knowledge and competences. It would be beneficial if the IEPS elaborated on IES 2 in this area, as the IES deals with this only in broad terms. The emphasis on control competences in the IEPS is consistent with the requirements of IES 2, but the IEPS does not elaborate or expand on the IES 2 coverage in the context of the application of controls to personal systems.

The assumption is that the accountant will require IT control competences mainly in the role of assurance provider and evaluator, or possibly in compliance and internal control, but some control competences could also fall under particular user roles. IES 2 in Section 30 requires competence in a ‘user’ role and ‘at least one of’ the roles of manager, designer and evaluator, or a combination thereof. It is made clear in Paragraph 33 of IES 2 that these competences can be obtained:

- by integrating IT into the organisational and business knowledge component
- by integrating IT into the accounting and accounting-related knowledge component
- through pre-qualifying work experience
- through post-qualifying continuing professional development, i.e. specialist IT courses or qualifications.

Paragraphs 37 and 42 of IEPS 2.1 also point out that the qualified accountant needs *a knowledge and understanding, not proficiency* in IT – which suggests that there would be no requirement for a discrete high-level examination paper in IT to meet these requirements. These areas could be developed through integrating IT in other subject syllabuses, and/or through work experience requirements and in continuing professional development.

ACCA therefore suggests that this aspect of IES 2 should be made more explicit in the IEPS 2.1 document to give better guidance and reassurance to member professional bodies.

Neither IES 2 nor IEPS 2.1, recognises that some very basic IT knowledge and skills identified in the IEPS 2.1 appendices could be assumed to have been acquired pre-registration, either from school or college education, in the same way that basic numeracy and linguistic skills are assumed, other than for matriculation purposes. Examples of this would include *communication supported by IT*, such as emails, *data communication devices*, *physical storage devices*, such as memory sticks and infrared, and some basic *office software*, such as word processors and basic spreadsheets. ACCA suggests that this point about assumed minimum levels of IT competence could be added.

IAESB decided not to include assumption of basic IT knowledge and skills (interested in outcomes, not inputs)

The IEPS contains several references to assurance provider/evaluator, which indicates that the IEPS more readily recognises the link between IT function/competences and audit and assurance than does IES 2, specifying the obvious links with IES 8 requirements.

Separate section and appendix on IES 8 now added to IEPS.

ACCA supports this, as it is likely that this will be a significant area, where IT competences are demonstrated by a large group of accounting professionals, but ACCA advises IFAC to ensure that there is sufficient cross-referencing between what is written in this paper on evaluation and assurance with what is contained in IES 8.

ACCA therefore considers that IEPS 2.1 does more than meet the requirements of IES 2, but possibly in a different way to that originally intended or envisaged. As far as content is concerned it covers everything specified in the education standard, although ACCA recognises that the standard may not have intended the IT coverage to be so detailed and specialist. The only aspect of IES 2 that the paper does not adequately deal with is the emphasis, in Paragraph 33 of the standard, on specifying how much IT coverage can be achieved in different ways, how much is expected to be taught within an education syllabus and how it is to be demonstrated.

ICPAI We agree that the proposals in IEPS 2.1 document are helpful in addressing the requirements of IES 2.

Deloitte We believe the proposed practice statement will be helpful to member bodies although we believe that it could be improved by adding clearer links to IES 8 in respect of audit professionals (see comments below on paragraph 18) and by clarifying the role of specialization and specialist qualifications/certifications in helping the professional accountant clearly demonstrate his or her competence to third parties.

Separate section and appendix on IES 8 now added to IEPS.

IMA Yes, in general we feel that documentation available will be helpful to member bodies in addressing the requirements of IES2 at International Education Standards.

CIMA We clearly find it helpful. The draft sets out in detail the expectations of IFAC and provides a clear specification of competences.

AICPA Yes, the document remains helpful. It is a great way to show accountants that they need more than an average understanding of information technology (IT) to succeed in their jobs, both in industry and public accounting. However, some basic concepts applicable to IT controls in today's environment are not addressed. See response to Question 2 for details.

Body of IEPS now contains greater detail as to IT control knowledge and competences required.

This document clearly shows that IT has transformed the role of the professional accountant and will continue to do so. The outcome of a standard should be a knowledgeable professional accountant capable of asking the right questions because they understand IT

processes. The scope of the exposure draft is broad and details the knowledge and skill requirements considered necessary for professional accountants in the IT environment to prepare them to use information technology and rely on information technology.

CGA IEPS 2.1 is very valuable to member bodies in addressing the requirements of IES2 (Content of Professional Accounting Education Programs) and provides thorough guidance on IT competencies

ISACA We agree that accountants who use and design technology should be differentiated from those who audit technology. For those who use and design, it is difficult for a document to tell them what they should know about their applications for they are the specialists and are often the experts in the industry. For the generalist accountants and those who audit, there is this need to understand holistically, IT systems and how they embed into business processes.

Separate section and appendix on IES 8 (audit professionals) now added to IEPS.

While it is not expected for the qualification as a professional accountant as mentioned in the paper, the following are common agenda items in discussions with top management, users, steering committees and other parties such as regulators. Perhaps the following illustrative subject matter references could be provided to assist the reader in understanding the relationship of IT controls (application and general) and IT's pervasive impact on an organisation including its financial statement controls:

Some of this now included in appendices.

- Reference to sources of leading IT general control frameworks mentioned - COBIT
- Explanation of IT general controls and governance of IT and security
- Qualifications for professional development such as CISA, CISM, CISSP amongst others or reliance on appropriate identification of qualified specialists as part of competency development
- Common categories of tools that are available with illustration
- Relevance to regulatory requirements, such as Sarbanes-Oxley and similar national requirements such as J-SOX, K-SOX and those in Europe.

IDW Our primary concern is the failure of the Statement to provide a top-down business-driven approach to IT education that reflects business operational structures and processes in the development of the necessary IT knowledge and competencies. We believe that a top-down approach involves taking a business administration perspective that drives the structure and content of IT knowledge and competencies for the various roles that professional accountants play in businesses. While paragraphs 7 to 9 of the Statement do allude to this kind of approach, the approach was then not followed through in the presentation of the structure of general IT knowledge and skill areas. In particular, the Appendices in the Statement and the technology-based structure of the needed knowledge in the Appendices is inconsistent with the objective of the Statement by leaving the impression that only IT specialists would have the necessary IT knowledge. Overall, the structure leaves the impression that for the areas covered the Appendices outline the complete

This IEPS aiming to provide guidance on IT component of IES 2 only – organizational and business knowledge requirements are covered in the standard, but not in this IEPS.

New section on teaching/assessing IT stresses importance of integrating IT

content of a course of studies leading to a degree in Informatics.

knowledge with other subjects, however.

For example, the area of system acquisition/development process was structured into the typical phases of an IT project and the main topics and illustrative subject matter were presented in the same manner. In our view, a better approach would be to present this area on the basis of the most relevant case for professional accountants, which would be the implementation of an accounting system (e.g., an ERP system), including the necessary changes to the IT infrastructure, IT operations, the business processes and the necessary educational measures to enable the integration of the ERP system into the operational context of the entity. In particular, the current approach does not include a treatment of the basic interconnections and interactions between the business administration and organizational considerations necessary for the implementation of an IT system, such as:

- Does the planned implementation of the accounting system accord with the IT strategy, which should be developed from overall strategy of the entity?
- Does the entity have appropriate policies and procedures over project management and controlling for the implementation of a complex accounting systems (e.g. ERP-System)?
- What are the organizational policies and procedures to ensure the compliance with project management and controlling policies and procedures to thereby ensure that the implementation of accounting systems meet the defined requirements, and in particular, comply with the accounting-related laws, regulations and standards?
- Are there any risks for the conduct of IT projects arising from the structure and processes of the entity?

To be able to answer these questions, a professional accountant should not only be competent in technical IT matters, but also have the necessary knowledge in business administration, including organizational matters.

An approach like that outlined above for systems acquisition/development would also apply to the role of professional accountants as IT auditors. In short, it is the connection between competencies in business administration and technical IT competencies that the Statement fails to make. For these reasons, we would welcome if the IT competencies and technical knowledge presented in the Statement were to be placed into a business and business administration context, rather than having the knowledge and competencies presented in an IT technology-based manner.

2) Do you consider that the updated lists of knowledge/skills areas, topic coverage, competences and competence elements contained in Appendices 1 to 6 are sufficiently comprehensive? Please explain

ICAEW	<p>The Appendices are extremely comprehensive and disproportionate to the body of the Exposure Draft – and indeed to the IT elements of IES 2. We believe that an initial professional qualification in accountancy could possibly address Appendices 1 and 2, but Appendices 3 and 4 would have to be dealt with through CPD, and Appendices 5 and 6 through specialist work experience and CPD.</p> <p>We believe that the Appendices should not be too prescriptive; currently they are processed based, with emphasis given to transient technological detail, they are not principles-based or risk-based – as we think they should be. The “illustrative subject matter” in the third column of Appendices 1 and 2 may lead to confusion as not all of the areas listed in this column are expected of professional accountants before qualification, for example most professional accountants would have little or no knowledge at all of the Seven-layer OSI Reference Model. Even those who do have such knowledge might never relate that knowledge to a professional assignment or a general business or financial management role.</p> <p>We feel it would be more appropriate to concentrate only on those areas that are expected of professional accountants before qualification, with more realistic and practical examples of the sort of IT-related knowledge that should be engendered and encouraged within the profession.</p>	<p>Response to all commentators</p> <p>Discussed in detail at CAG and IAESB meetings in February 2007.</p> <p>Detail in appendices remains, but it is made clear that this is illustrative only (IAESB felt that some education directors greatly valued this).</p> <p>Higher-level guidance now provided in body of document (member bodies could choose to focus on this only), including clear competency statements for general IT knowledge area.</p>
ICAI	<p>Because of the pervasive nature of IT, it can be difficult for member bodies and for individual accountants to specifically identify the IT competencies with which they should be familiar. To this extent the appendices provide a very useful reference tool for both member bodies and individual accountants.</p> <p>Further to our comments in response to question 1, we suggest it would be helpful to note that the appendices are illustrative. From an education perspective, it would be beneficial to emphasise that the content of the appendices are not to be regarded as lists of abstract technical topics. One concern regarding the content of the appendices is that it may encourage member bodies to develop IT course content without sufficient reference to useful accounting or business contexts. Paragraph 16 of IES 2 states ‘...<i>the subjects and elements of the program may be integrated, for example, incorporating aspects of IT knowledge in specific accounting courses</i>’. It would be helpful to reiterate this point in IEPS 2.1.</p>	<p>Task Force has considered suggestions made by respondents for inclusion in appendices, and updated them accordingly.</p>
ICMAP	<p>The updated lists of knowledge/skills areas, topic coverage, competencies, and competence elements contained in Appendices 1 to 6 are sufficiently comprehensive. However, it is suggested that these Appendices may be reviewed after every two to three</p>	

years and latest terminologies which may evolve during the period, may be adopted (if required) to keep the Professional Accountants abreast about the latest development in the fast changing IT field.

ACCA advises that although the main body of the paper is broadly appropriate and certainly comprehensive, the appendices and their sheer volume may encourage professional accountancy bodies to assess more IT than would be advisable, within their educational qualifications.

ACCA therefore suggests, as mentioned above that the paper could emphasise more strongly that many of the knowledge areas and competences in the appendix could well have been acquired before, during and after completing exams, from pre-professional education and training, from work experience and from continuing professional development.

ACCA advises that the appendices should not drill down into as much detail, or that it might be better for outcomes to be coded as *essential*, *useful*, or *specialist*, on a 3,2,1 basis for example.

The above is consistent with Paragraph 10 (bullet 2) where it says '*Some IT user skills are indispensable*'. The paper could also give some guidance on whether to cover these areas (*p*) pre-registration, in (*e*) educational assessment (*t*) pre-qualifying training and work experience, or as (*d*) continuing professional development (CPD).

ACCA considers that many of the Manager and Designer role competences listed may be too specialist to be covered in an accounting qualification syllabus. These areas within Appendices 5 and 6 relating to the Manager and Designer role could be specified as optional, or for CPD only, depending on the role of the accountant at work.

The appendices themselves are structured differently for the knowledge and competences areas, presumably to distinguish between education capabilities (inputs) and competence at work (outputs). Is this really the intention? If so, it might be reasonably assumed by qualifying bodies that areas referred to in Appendices 3–6 are best covered only as part of the work experience requirement, or in CPD. If this is not the case then this needs clarification. The general point remains, however, that the appendices are probably too long and probably contain too many detailed technical and specialist IT areas, many of which only very few accountants would ever need.

Paragraph 11 also recognises that more advanced knowledge can be obtained from more specialised training at work, which again would indicate that much of the content of the appendices relating to the main roles (including some control competences and particularly the manager and design roles) are best covered within work experience while training, or more appropriately in CPD,

where accountants working in IT environments can pursue specialist IT courses and qualifications.

Although the IEPS 2.1 appendices are helpful in that they provide the detail where it could be required for IT syllabus development, arguably they would be more helpful for professional bodies offering specialist IT qualifications than for those offering professional accountancy qualifications.

ACCA therefore considers that the appendices may give the wrong impression about how much of this needs to be covered in an accounting education curriculum. This is despite the fact that the IEPS acknowledges in paragraph 13 that accountants will perform IT roles at different times in their career and not necessarily sequentially.

ACCA also holds the view that there may be a greater danger that such detailed emphasis on IT content in this paper may not be matched by an equivalent detailed emphasis on a recommended minimum curriculum in the other core technical accounting and organisational and business areas outlined in IES 2. This may send out the wrong message about the relative importance of IT content against other, arguably more mainstream, technical content, on which employers are asking for more emphasis.

- ICPAI It is our view that the updated lists of knowledge / skills areas, topic coverage competences and competence elements in the appendices are sufficiently comprehensive.
- Deloitte We believe that the lists of knowledge and skill areas have been updated appropriately and are sufficiently comprehensive. We would suggest that the IAESB give some consideration to providing additional direction to Member Bodies, especially those in development markets, to assist them in determining which of these myriad areas are relevant in which circumstances
- IMA We generally agree with the IT knowledge and skill areas contained in the appendices. These skill sets are vital for the professional accountant in business to be a valued strategic business partner, especially with the growing role of technology as an enabler to business success (e.g., Sarbanes Oxley compliance and high cost of testing controls, ERPs, business process documentation, interactive data, mining, etc.).

However, we feel that when identifying IT knowledge and skill sets, the gap between “aspirations” and “current state of reality” has to be acknowledged. At a more macro level, various studies of global CFOs consistently suggest a gap between the aspiration to be a “service” business partner impacting decision support, strategy, planning, etc. and the current state of over-emphasis on external reporting and audit. Studies include those conducted by PwC/CFO Magazine, Gartner Group, IBM and KPMG.

The path forward to address the gap lies in training, education and certification; specifically, in the IT arena. The following are examples of how IMA is trying to address this gap:

- Certified Management Accountant (CMA) Certification. Part 2 of the exam covers “Information Management” (15%) including information systems (business, transaction, management), systems development and design (including cost-benefit), technology (including database management systems, AI and expert systems, DSS, etc.), e-commerce and enterprise models (e ERP, data warehousing, data mining).
- Playing a leadership role in key initiatives impacting the profession but which tend to be skewed toward external reporting/audit – case in point, XBRL/interactive data. IMA supports the Securities and Exchange Commission’s (SEC) efforts with interactive data as a result of working closely with the Financial Accounting Foundation’s Taxonomy Development Advisory Council. Taxonomy development involves “tagging” of financial disclosures which plays an important role in the application of XBRL. The Council has recognized the importance of taxonomy development and has asked organizations represented to identify subject matter experts to assist in such development which is expected to be complete by June 2007. IMA has also conducted webinars about XBRL where archived files can be found on its website. IMA senior management filed a letter to the SEC earlier this year indicating that although supportive of interactive data, the potential for its use of should not be limited for external filings, but also for internal reporting purposes.
- Research – IMA recently released results from a study conducted earlier this year about its members’ experience with Sarbanes Oxley 404 compliance. The results revealed that current control frameworks for providing attestations on controls effectiveness for Sarbanes Oxley 404 are severely lacking in the area of IT controls.
- Professional Development opportunities – e.g., Technology Enablement is a learning track for IMA’s conferences and webinars.

CIMA If anything, the appendices are perhaps too comprehensive, even in the “basic IT” sections (1, 2 and 3). There are competences that may not apply to all professional accountants. It is also unclear (from paragraphs 22, 26, 27, 37 and 42) which of the roles (and what levels of competence) are intended to apply to all professional accountants outside practice. It is similarly unclear as to whether IFAC expects these competences to be assessed via the exam structure or through sign-off of practical experience.

AICPA In general, the updated lists of knowledge/skills areas, topic coverage, competencies and competence elements are sufficiently comprehensive. However, our concern is that these lists will not prove helpful in crafting an accounting program of study as the lists will quickly become outdated. Some sections of Appendix 1 may actually be too deep, if the goal is for the professional accountant to

be familiar with each subject area as detailed; specifically the sections on *Information Technology Architecture* (pages 12-17) and *Systems Acquisition/Development Process* (pages 17-20), and the “Change control and problem management” skills area of the *Management of Information Technology* subject area (page 21). While the sections may seem too voluminous, it would also be difficult to determine which portions should be trimmed. Various constituencies could reasonably argue for each paragraph to remain as a ‘core’ knowledge area for the professional accountant. There are also several areas that still need to be included in the document:

- a. Encryption of data needs to be understood by all accounting professionals by both internal and external accountants. Cryptography is basic for the profession today.
- b. Data organization needs to specify an understanding of data access with the data base structure. The current need to understand the data management and extraction for Computer Assisted Audit Techniques isn’t emphasized to the level it should be. These concepts should be part of “General IT Knowledge/Skills Area (s)” and include CAATs. In addition, a Knowledge/Skills Area focusing on “Business Reporting and Intelligence” should be included, with topics such as Data Warehousing, Data Mining, Data Access, Reporting Logic (If/Then, Boolean, nested queries, etc). This is touched on indirectly at a high level in Appendix 6 (page 38, 5th item on the right). However there are ‘core’ portions of this all professional accountants should be familiar with. If it is not its own area, then inclusion in “Data organization and access methods” (page 16) could be a possibility.
- c. Sampling techniques using IT tools is not addressed.
- d. Under IT Risks, reputation risk is not mentioned. An IT security incident creates reputation risk that could affect the financial future of a business. Therefore, it is a valid risk related to IT.
- e. There is no information regarding how an accountant should plan a risk-based audit and make decisions about the IT controls that would affect the audit. The new risk standards put on added “stress” to what students need to know. The audit planning process should be addressed.
- f. Authentication is only listed in the “subject matter”. Authorization and authentication, being key controls in any IT system, should be a “General IT Knowledge/Skills” area.
- g. Management of outsourced services is discussed in terms of managing the services but not the premise of applying controls for the system by the user organization.

CGA The lists in the appendices (1-6) are quite comprehensive. The challenge is to keep the lists current, particularly those portions that deal with technologies rather than principles. We are suggesting that by adding the items (from section 2.1) below can make the lists more current.

ISACA In Appendix 1, the General IT Knowledge/Skill area is very exhaustive and needs to be precise for the professional accountant. In the Illustrative subject matter column, many items are technical in nature and may not apply to a professional accountant. Consider including details on areas that would be applicable to a professional accountant, for example: Subject area: Information Technology Architecture: Software: Security Software: makes a mention of firewall, intrusion detection. These two areas by themselves are vast subject. What does a professional accountant need to know in these areas? (Scripting for firewall?)

If satisfying appendices 1 and 2 qualifies the professional accountant for an additional certification, we agree with most of the requirements. If satisfying appendices 1 and 2 is being proposed as just good practice that a professional accountant have this knowledge, we think some of the information 'required' may not apply to the ordinary professional accountant. It seems impractical to require of the everyday professional accountant knowledge on such a wide array of topics, such as privacy, SDLC, OSI model and firewalls. A practical and concise document requiring competencies on the common technologies encountered by professional accountants would be more helpful.

3) IEPS 2.1 acknowledges that, in real work environments, member bodies may have had difficulty in requiring professional accountants to develop competence in one of the three specific roles (in addition to the user role) outlined in IES 2. In addressing this, IEPS 2.1 (paragraph 15) suggests that member bodies may wish to define other roles (e.g. an advanced user role). Is this a helpful concept?

ICAEW Yes, with regard to paragraph 15 it is helpful to allow member bodies to define other roles. It is also reassuring that IFAC acknowledges that member bodies may have problems meeting this aspect of IES 2.

ICAI We do no difficulty with the inclusion of the concept in order to provide member bodies with the option to include advanced material in the scope of courses provided. We note however that the content of IEPS 2.1 provides guidance primarily in relation to competencies required of accountants up to the point of qualification. It does not comment in detail on the specifics of post-qualification competencies other than, in paragraphs 11 and 15 of IEPS 2.1, to state that specialised training and skills may be useful. We are supportive of a primary focus on structured IT education up to the point of qualification.

ICMAP In our working environment, professional accountants, by and large, are users of IT. Additionally, a significant number is fulfilling one or more of the following other roles: assurance provider and evaluator, manager of information systems, designer of business systems. Therefore, in our context, it would be helpful to define advanced user role.

ACCA The question about the ‘advanced user’ role may have been posed in response to earlier feedback indicating that most accountants could find it difficult to demonstrate IT competences in any capacity other than within the user role. This view supports the findings from ACCA’s competences survey in 2005, suggesting that while stakeholders, such as employers, believed that IT was important, the most important aspects mentioned were for accountants to have ‘hands-on’ proficiency with accounting software, such as spreadsheets, and to be able to use computerised accounting systems, as users.

ACCA recognises that the ‘advanced user’ concept may be useful for some professionals, who may find it difficult to demonstrate knowledge and competence of roles other than the user role. Nonetheless, the example of using an advanced spreadsheet, given in Paragraph 15, may not be the most appropriate, as this competence is probably implicit within the normal user General IT knowledge area (*See Software for professional use*) and in IT control competences. (*See Apply appropriate IT systems/tools to business/accounting problems*).

ACCA therefore advises that for the ‘advanced user’ role to be better understood, more justification for this concept may be needed.

Response to all commentators

Discussed at CAG and IAESB meetings in February 2007. Decided that “advanced user” role should not be maintained – it introduces a new concept that would be inconsistent with IES 2.

Advanced user role now deleted, and replaced with “mixed user” as per IES 2, and accompanying example.

More guidance on the user role (general knowledge of IT/IT user competences) now provided in IEPS.

ACCA supports the view that if other feedback indicates that the requirement to demonstrate competence in the user and one other role is unrealistic, it may be advisable to revisit this IES 2 requirement and to widen the user role, rather than create an 'advanced user' role.

As written, the user role competences seem to be no more than a range of accounting-related job roles within which to demonstrate IT user knowledge and competences, i.e. as *financial manager, financial controller, tax or insolvency practitioner and information analysts*. ACCA believes there may be scope to widen this set of roles to include other finance-related roles, and to specify which functions and responsibilities within these roles would provide the best opportunities to demonstrate IT user knowledge or competence, rather than using the 'advanced user' concept.

It might be feasible that some of the broader competences within the assurance and evaluator and the manager roles, if not the designer role, would fit more appropriately under the user role.

On balance, ACCA would not object to an 'advanced user' role if it made compliance with the standard more achievable, but would prefer a redrafting of the user role to widen its scope to specify accounting-related areas where a range of IT knowledge and control competences may be found, and where accounting professionals could more feasibly demonstrate these at work or through CPD, wherever they were employed.

ACCA therefore advocates the concept of a 'wider' user role rather than an 'advanced user' role, on the basis that what is already included under the user role seems sufficiently advanced already, or that competences included under some of the other roles could be included here.

ACCA would prefer it if the paper helped students and members more readily identify the specific roles and responsibilities where they already use or can potentially develop IT knowledge or competence as users, rather than their having to justify competence in specialist areas such as Manager and Designer.

ACCA's view is that these other roles would normally lie firmly in the domain of trained IT specialists, from whom accountants would normally seek support and advice, but in whose specialisms they do not need expertise themselves.

- ICPAI It is a useful concept to permit member bodies to define other roles. This recognises the reality in the development of professional accountants, without any compromise on quality
- Deloitte We believe that the concept of other roles is a helpful concept and one which would benefit from some further elaboration in the content of the proposed practice statement (for example, how these “other roles” might be reflected in specialization by the professional accountant).
- IMA We don’t have any specific recommendations at this time. However, we will share any suggestions we may have at a later date as a result of IMA’s research and training efforts with interactive data and other IT related issues.
- CIMA Yes, but most CIMA members at the point of qualification need no more than a significant proportion of the “basic” competences appropriate to the “user” role. CIMA members might eventually fulfill one of the additional roles, or even another (such as Internal Systems Auditor, or IT Director, for example) but gaining the necessary competences would be more appropriate to a post-qualification specialization, rather than as part of the core qualification.
- AICPA Yes it is a useful concept. The volume of knowledge required by an individual entering the profession as shown by this document is vast. One can’t help but wonder how students can learn this much information as well as all they need to know about accounting. There appears to be too much overlap between the level of detail for the generalist and the specialist. There needs to be a clear distinction between *core competency and expertise*. There is also some confusion as to who the audience is for this document. Is it students, new hires or working professionals? The document should explicitly outline what the roles are and what is required for each role and the roles should be aligned with the skills.

For example, the individual graduating from college needs to have core competencies in certain areas of IT, while only needing exposure or awareness in other areas. (e.g., Bloom’s learning taxonomy). The core areas for each role need to clearly be identified in the document, with the other areas being moved to an appendix. The inclusion of additional specialties could be a possibility, but would need to include the specifics as to the competencies expected. Since this an educational guideline, as opposed to a technical certification, we would not want to see Appendix 1 reduced to a mere checklist.

Some of the other comments we have in this area are as follows:

- a. Page 5 (Item# 6) states that “This IEPS does not prescribe the specific IT knowledge that specialists require to work in the IT

environment.” However, the criteria outlined sets out knowledge and skills for the professional accountant that may exceed what is currently required for the specialists.

- b. Page 6 (Item# 12) The roles of “Professional Accountants ...” should at least include the option of IT auditor, fraud examiner and forensic auditor.
- c. Page 7 (Item# 14) This requirement should not be necessary with the change in the expectation of audit to perform a risk based audit which is required to include the assessment of IT controls and risks.

CGA The concept of defining other roles arising from local conditions, as suggested in Paragraph 15, is very useful. It helps to make IEPS 2.1 more relevant for special and unique circumstances.

SPECIAL CONSIDERATIONS FOR SME/SMPS

SPECIAL CONSIDERATIONS FOR DEVELOPING NATIONS

TRANSLATIONS

IV. Detailed Comments

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
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INTRODUCTION

PARAGRAPH 1

International Education Practice Statements (IEPSs) assist in the implementation of generally accepted “good practice” in the education and development of professional accountants by providing advice or guidance on how to achieve “good practice” or current “best practice.”

N

9	OSAM	First two paragraphs are very good		
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PARAGRAPH 2

IEPSs may interpret, illustrate, elaborate, or expand on matters related to International Education Standards for Professional Accountants (IESs). In this function, they assist member bodies to implement and achieve “good practice” as prescribed in IESs. They may also recommend practice that is wider or deeper than the practice prescribed in IESs. Alternatively, they may outline commendable methods or practices, including those that are recognized as current “best practice,” which member bodies may wish to adopt.

PURPOSE OF THIS PRACTICE STATEMENT

PARAGRAPH 3

Information technology (IT) is pervasive in business, requiring the professional accountant to be competent in this technology. IT encompasses hardware and software products, information systems operations and management processes, IT controls frameworks, and the human resources and skills required to develop, use and control these products and processes to generate the required information.

9	OSAM	Because today’s IT environment is significantly different from ten years ago, and will continue to change, I would suggest inserting some reference to web-based systems, network, and remote and mobile processing.		
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Y

This section
(introducing and
contextualizing IT)

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
				deleted from current draft.
10	Deloitte	<p>We believe it would be more appropriate to qualify the first sentence by making reference to competence in the context of the professional accountant’s role. Alternative wording could take the following form:</p> <p>“Information technology (IT) is pervasive in business, requiring the professional accountant to be competent in this technology. IT encompasses hardware and software products, information systems operations and management processes, IT controls frameworks, and the human resources and skills required to develop, use and control these products and processes to generate the required information. <u>IT is pervasive in business, requiring the professional accountant to have an appropriate level of competence in this technology based on the role of the professional accountant.</u>”</p>		As above
13	AICPA	The first sentence in “Purpose of this Practice Statement”, “...in this technology” seems redundant.		As above
15	ISACA	<p>Because today’s IT environment is significantly different from ten years ago, and will continue to change, we suggest inserting some reference to web-based systems, network and remote and mobile processing.</p> <p>PARAGRAPH 4</p> <p>This IEPS assists member bodies to implement IES 2, <i>Content of Professional Accounting Education Programs</i>, IES 7, <i>Continuing Professional Development: a program of lifelong learning and continuing development of professional competence</i>, and IES 8, <i>Competence Requirements for Audit Professionals</i>. It provides more detail of the knowledge and competences required of professional accountants in the IT environment, to prepare them to (a) use IT, (b) work in the IT environment, and/or (c) rely on IT.</p>		As above
10	Deloitte	We believe that paragraph 4 should indicate that the proposed practice statement provides illustrative detail rather than prescriptive detail on the knowledge and competences required. In addition, we believe that by repositioning this paragraph after the existing paragraph 5, the reader has a better context for understanding why the detail provided is purely illustrative. Further, unless the proposed practice statement is revised to take account of our comments on paragraph 18, we believe that this practice statement will provide very little in the way of practical assistance to member bodies in implementing IES8.	Y	IEPS now talks of “good practice guidance” and “illustrative guidance” as appropriate.

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		<p>PARAGRAPH 5</p> <p>Competence is being able to perform a work role to a defined standard, with reference to real working environments. Individuals are expected to develop the appropriate IT competences required to qualify as professional accountants, and then to maintain these and develop further appropriate IT competences throughout their careers. This IEPS helps member bodies determine appropriate competences for their trainees and members.</p>		
9	OSAM	Suggest including the word “knowledge” in the paragraph to underscore the requirements for skill and knowledge.	Y	This paragraph now deleted.
5	ISACA	Suggest including the word “knowledge” in the paragraph to underscore the requirements for skill and knowledge.		As above
		<p>PARAGRAPH 6</p> <p>This IEPS does not prescribe the specific IT knowledge that specialists require to work in the IT environment. It sets out the knowledge and skills professional accountants require (a) to formulate the precise questions to be answered by specialists such as the IT auditor, and (b) to understand the outcome of the activities of such specialists.</p>		
2	Norwegian Auditor General	We find that the requirements in letter (a) and (b) do not correspond with the requirements described in the later paragraphs with regards to the level of skills.	N	
THE ENVIRONMENT				
		<p>PARAGRAPH 7</p> <p>Professional accountants often play important roles as managers, advisors and assurance providers in the adoption, deployment and use of various information technologies by organizations of all types and sizes.</p>		
9	OSAM	Include “designer”	Y	This section now deleted – Task Force felt was (a) irrelevant in an education

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
15	ISACA	Suggest including the word “designer.”		document (importance of IT is generally understood) and (b) would quickly become dated. As above
10	Deloitte	<p>PARAGRAPH 8</p> <p>Society expects professional accountants who accept an engagement or occupation to have the competence to perform the required work. The accountancy profession as a whole has the obligation to ensure that candidates seeking to qualify as professional accountants possess the necessary IT competences; and, after qualifying, keep abreast of relevant developments through continuing professional development.</p> <p>We agree with the sentiment that society expects the professional accountant to be competent to perform the work on engagements or occupations they have accepted. However, we believe that additional clarity should be brought to the proposed practice statement by indicating where it would be best practice for the professional accountant to acquire additional specialist competence and qualification, such as Certified Information Systems Auditor, (CISA), prior to accepting some engagements or occupation.</p> <p>In addition, the International Auditing and Assurance Standards Board, (IAASB) has provided for the audit professional to use experts and specialists in the conduct of certain assurance engagements and it would only be appropriate for this practice statement to acknowledge this. Therefore, we believe this paragraph should also highlight the professional accountant’s responsibility to seek the assistance of specialists as part of an engagement where they identify the need for additional competence.</p> <p>PARAGRAPH 9</p>	Y	This section now deleted.

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
10	Deloitte	<p>Changes in IT technologies are pervasive; they increasingly influence businesses as a whole, and business processes in particular. For example, the professional accountant needs to understand the procedures of both the IT and manual systems by which transactions are initiated, recorded, processed and reported, and how they interact and evolve.</p> <p>We believe that the second sentence is only true in some circumstances, depending on the role the professional accountant plays. For example, in the role of user, the professional accountant would not necessarily need this level of knowledge.</p>	Y	This section now deleted.

PARAGRAPH 10

The accountancy profession faces a number of challenges relating to IT:

- Information technologies affect how organizations are structured, managed and operated. Entities can no longer develop business strategy separate from IT strategy, because IT is an enabler of business initiatives. There is therefore a need to integrate sound business and IT planning, and to incorporate effective financial and management controls within new systems. The traditional role of professional accountants: evaluating investments in business systems; evaluating business systems designs; and reporting on potential weaknesses within these initiatives, needs to be preserved and enhanced.
- Information technologies are changing the nature and economics of accounting activity. The career plans of professional accountants, and their related training needs, need to be based on a realistic view of the changing nature of accounting and the profession’s role, and the knowledge and skills required for success as a professional accountant. Some IT user skills are indispensable, and vary according to the specific environment in which the professional accountant operates. In accordance with IES 2, IFAC member bodies are required to ensure that candidates possess these IT skills before qualifying as professional accountants. In addition, an increasing number of professional accountants provide IT related advisory and evaluative services that can affect the reliability of business systems. It is therefore important that IFAC member bodies consider appropriate pre-qualification and post-qualification education requirements to support those professional accountants in providing IT related and evaluative related services.

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
9	OSAM	This is a very important part. Suggest highlighting the primary impact of technology on business operations, IT control, risk management, and control evaluation. Changes in technology can have a profound impact on the system of internal control, especially with regard to the controls in place to meet high-level control objectives. Although there may not be a change to the high-level control objective (safeguard the asset regardless of whether we have a batch mode system or a real-time system, or whether we are stand alone of web-based, but there is a significant impact on the “mix” of control to meet the control objective. There is also the impact on evidence, document retention and accessibility, and evaluative techniques. In addition, suggest including reference to corporate and IT governance.	Y	This section now deleted. Impact of IT on business reflected in Table 1 and Appendices.
10	Deloitte	We recommend that the first bullet point of this paragraph also recognize that the increasing complexity of IT systems equally raises the importance of the professional accountant using specialists appropriately to complement his or her competences.		As above
13	AICPA	The Environment description is very good, especially the second sentence “Entities can no longer ...”.		As above
15	ISACA	Information technologies affect how organizations are structured, managed and operated. Entities can no longer develop business strategy separate from IT strategy, because IT is an enabler of business initiatives. There is therefore a need to integrate sound business and IT planning, and to incorporate effective financial, operational and monitoring controls within new systems. The traditional role of professional accountants: evaluating investments in business systems; evaluating business systems designs; and reporting on potential weaknesses within system of controls, needs to be preserved and enhanced.		As above
		PARAGRAPH 11		
		These challenges have created many new opportunities for many professionals. Opportunities arise in areas such as information systems design, information systems management, and control and information systems evaluation. Professional accountants can, with more specialized training, work in these areas.		
11	Deloitte	In addition to “specialized training”, we recommend that this paragraph acknowledge that in many geographies it is also important for the professional accountant to utilize additional certifications and qualifications to demonstrate competence at a specialized level and that this is best practice. These additional certifications may or may not be sponsored by the Member Body.	Y	This section now deleted.

No. Respondent Respondent Comment

ED Change Staff Comment (where necessary)

SCOPE OF THIS PRACTICE STATEMENT

PARAGRAPH 12

Professional accountants may perform various roles including:

- (a) The accountant as user of IT, for example:
 - Financial manager;
 - Financial controller;
 - Tax practitioner;
 - Insolvency practitioner; and
 - Information analyst.
- (b) The accountant as assurance provider and evaluator, for example:
 - Internal financial or operational auditor;
 - Evaluator of information systems; and
 - Audit professional, as defined in IES 8.
- (c) The accountant as manager of information systems, for example:
 - Knowledge manager; and
 - Data center manager.
- (d) The accountant as designer of business systems (alone or as part of a team), for example:
 - Designer of financial information systems (member of business systems design team or task force,

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		<p>producer of financial information, or analyst);</p> <ul style="list-style-type: none"> • Knowledge engineer; and • External advisor/consultant. <p>This IEPS and the accompanying appendices explain the competences and knowledge relevant to each role.</p>		
7	ACCA	As written, the user role competences seem to be no more than a range of accounting-related job roles within which to demonstrate IT user knowledge and competences, i.e. as <i>financial manager, financial controller, tax or insolvency practitioner and information analysts</i> . ACCA believes there may be scope to widen this set of roles to include other finance-related roles, and to specify which functions and responsibilities within these roles would provide the best opportunities to demonstrate IT user knowledge or competence, rather than using the ‘advanced user’ concept.	Y	This paragraph deleted and roles described in terms of knowledge and competences rather than job titles.
9	OSAM	Expand part “c” beyond knowledge and data center manager.		As above
10	Deloitte	We believe that the role of “evaluator of information systems” is often fulfilled by specialists and not the professional accountant. As such, we recommend adding further explanation to suggest that for complex IT systems this role would normally be filled by a specialist. Similarly, we recommend that for complex IT systems, the role of Data Center Managers and “External advisor/consultant” would typically be filled by a specialist.		Evaluator role set out in IES 2 for professional accountants.
	ICAEW	It seems to us to be an omission that paragraph 12, covering the roles that accountants may occupy in the world of IT, appears to exclude the important role of an accountant as manager of a general business function other than the finance function		
15	ISACA	<p>c) The accountant as manager of information systems, for example:</p> <ul style="list-style-type: none"> • Knowledge manager (<u>does this mean data custodian?</u>); and • Data center manager. <p>Expand part “c” beyond knowledge and data center manager.</p> <p>(d) The accountant as designer of business systems (alone or as part of a team), for example:</p> <ul style="list-style-type: none"> • Designer of financial (<u>and operational?</u>) information systems (member of business systems design team or 		

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		<ul style="list-style-type: none"> task force, producer of financial information, or analyst); Knowledge (<u>What does this mean?</u>) engineer; and External advisor/consultant. 		
		<p>PARAGRAPH 13</p> <p>The professional accountant may perform more than one of these roles during the same period or throughout his or her career. This IEPS does not presume that all professional accountants will carry out these roles sequentially.</p>		
2	Norwegian Auditor General	We can understand that an accountant previously may have had various roles as mentioned in paragraph 12 letter (a), (b), (c) and (d), but it is difficult for us to understand that you for example, given letter (c), can be a Data center manager and a professional accountant at the same time.		
10	Deloitte	Following from our comments on paragraph 12, we recommend that paragraph 13 include recognition that the professional accountant may need to develop specialist competences to perform some of these roles, particularly in environments with complex IT systems.	Y	This now included in paragraph 12.
		<p>PARAGRAPH 14</p> <p>In addition to the role as an IT user, all professional accountants are expected, as part of their pre-qualification education, to participate in at least one of the three other roles, as described in paragraph 12, or a combination of these roles, as described in paragraph 15.</p>		
		<p>PARAGRAPH 15</p> <p>In meeting specific needs, an IFAC member body may create other specific roles, e.g. an advanced user role within a narrow or specific domain. The knowledge and competences required for these specific roles may be drawn from the knowledge and competences required in this IEPS relating to the generic roles of user, designer, manager, and assurance provider, as appropriate. For example, the designing, building, maintaining and controlling of an advanced spreadsheet model may</p>		

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		demonstrate the achievement of many of the required competences.		
2	Norwegian Auditor General	It is difficult to grasp the meaning and purpose of this paragraph. We also think that development of a spreadsheet model is not a good example, given that this kind of environment often is very different from an ordinary system development platform, even if in some cases, the same system development methodology is used in developing a spreadsheet model as in ordinary system development platforms.	Y	IEPS now uses “mixed role” and gives example of IT project manager – similar approach to IEG 11. Member bodies able to define their own mixed roles.
3	ICAEW	Yes, with regard to paragraph 15 it is helpful to allow member bodies to define other roles. It is also reassuring that IFAC acknowledges that member bodies may have problems meeting this aspect of IES 2.	Y	
15	ISACA	For example, the designing, building, maintaining and controlling of an advanced spreadsheet model (<u>Can this be elaborated i.e., what is the business value of this?</u>) may demonstrate the achievement of many of the required competences.	Y	
		PARAGRAPH 16		
		IFAC member bodies set the assessment standards for conceptual IT control and practical IT skills to be met (a) when qualifying as a professional accountant, and (b) to act as an audit professional. After qualification, all professional accountants are expected to develop and maintain these competences as appropriate.		
2	Norwegian Auditor General	An explanation of "conceptual IT control" is needed.	Y	This paragraph now deleted; guidance on assessment now included in separate section.
10	Deloitte	We recommend that this paragraph make a clearer link to the role of the professional accountant and his or her need to maintain appropriate competences.	Y	
		PARAGRAPH 17		
		Professional accountants acting as “assurance providers” relating to information systems provide assurance in conformity with the International Framework for Assurance Engagements developed by the International Auditing and Assurance Standards Board (IAASB).		

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
PARAGRAPH 18				
		At a minimum, the audit professional needs the IT knowledge and competences defined in IES 8. The audit professional can gain the necessary knowledge and competences before qualifying as a professional accountant, or as a specialization after qualifying.		
2	Norwegian Auditor General	A more specific reference to IES 8 will be useful.	Y	Specific section and appendix on IES 8 now added to try and make guidance for audit professionals clearer.
10	Deloitte	We believe it would be helpful to have a more precise cross-reference to IES8 including the relevant paragraph, such as IES8 paragraph 40. In addition, since IES8 does not, in fact, contain any further detailed guidance on a par with that provided in the appendices to this proposed practice statement, we suggest either including a specific appendix for audit professionals or restructuring the information included in the existing proposed appendices so that the information relative to the bullet points in IES8 paragraph 40 can be more readily identified.		
GENERAL IT SKILLS				
PARAGRAPH 19				
		Professional tasks require both conceptual IT knowledge and practical IT skills. In considering IT competence requirements for professional accountants, it is important to emphasize the need for both the relevant conceptual IT knowledge and practical IT skills.		
2	Norwegian Auditor General	The first sentence should be deleted.	Y	This paragraph now deleted.

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
10	Deloitte	We believe that the first sentence of this paragraph is not necessary and recommend its deletion.		
13	AICPA	General IT Skills, 1st sentence, and (Item# 21), the last sentence are very good.		
15	ISACA	In considering IT competence requirements for professional accountants, it is important to emphasize the need for both the relevant conceptual IT knowledge and practical IT or audit skills.		
		<p>PARAGRAPH 20</p> <p>Although different environments will determine the specific IT competences and skills required of professional accountants, many aspects of IT are common to all professional accountants. It is possible and desirable to describe the broad elements of an educational background that all professional accountants can be expected to share.</p>		
1	Alvarez & Marsal	<p>For ALL IT roles in your document, there is a component that needs to be stressed for all professionals.</p> <p>Equipment and network usage is monitored by most large organizations on a continuing basis. When working on a corporate network or connection, you should use the working assumption that all your activity is at least being monitored, if not actively eavesdropped. Most corporate networks reserve the right to observe all their local traffic and any communications with the internet or external providers from within their network. Performing personal activities, browsing inappropriate web sites, watching streaming video on a computer attached to a corporate network is highly visible to network monitoring tools in common usage. Your behavior on your computer should be on the assumption that all your activity is being monitored and logged on the computer itself. On a corporate network, you should also assume that network monitoring equipment is in use and will record and report inappropriate activity automatically.</p> <p>Specifically, Limewire, Kazaa and other file sharing applications, videos, email jokes and pornography and games should be avoided by all professionals – discovery of their use on computers can be damaging both to the user and the users firm and users should assume that their use would be detected on any corporate computer or network.</p>	Y	<p>This paragraph now deleted – whole IEPS describes the broad elements of educational background in terms of IT.</p> <p>References to “ethics and IT” and similar (e.g. “appropriate use”) now included in appendices.</p>

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
10	Deloitte	We do not believe that paragraph 20 is necessary and recommend its deletion.		
7	ACCA	<p>PARAGRAPH 21</p> <p>Pre-qualification knowledge education generally aims at developing knowledge and comprehension in specified subjects. Practical skills include the abilities to apply that conceptual knowledge, analyze, synthesize, control and evaluate information. Education that focuses solely on conceptual material will not be sufficient for professional accountants in any work situation. ACCA believes that some paragraphs in IEPS 2.1 could be more specific with reference to IT; for example, paragraph 21 and the paragraphs 23–27 on the whole area of control competences.</p>	Y	Section on “teaching” stresses importance of developing practical skills in the workplace.
2	Norwegian Auditor General	<p>PARAGRAPH 22</p> <p>IES 2 requires all professional accountants to have at least a general level of knowledge of IT and IT control before qualification. That knowledge content is detailed in Appendices 1 (General IT Knowledge /Skills Areas) and 2 (General IT Control Knowledge/Skills Areas) of this IEPS. Key knowledge and skills areas, and topics, are shown in two columns, headed: “Broad knowledge/skill area” and “Main topic coverage.” A third column, headed “Illustrative Subject Matter,” lists possible subject matter that might be covered under each main topic. Knowledge of all the subject matter listed in this third column is not expected. Whatever their primary work situation or role, all professional accountants, will acquire at least some general and IT control knowledge related to business systems. Control is of central importance to all professional accountants and requires particular emphasis.</p> <p>Give that knowledge of all subject matter listed in third column is not expected, does that imply that knowledge of subjects in column 1 and 2 should be expected?</p>	Y	Titling and references to appendices made clearer to stress what is intended for illustrative purposes only.

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
10	Deloitte	We believe that the last two sentences of this paragraph are repetitive and therefore suggest their deletion.	Y	These two sentences deleted, although need for general IT control knowledge stressed throughout IEPS as comes from IES 2.
USER ROLE IT CONTROL COMPETENCES				
PARAGRAPH 23				
7	ACCA	<p>Whatever the primary work situation or role, all professional accountants need to be familiar with a broad range of tasks and how to apply IT systems and tools to them.</p> <p>ACCA believes that some paragraphs in IEPS 2.1 could be more specific with reference to IT; for example, paragraph 21 and the paragraphs 23–27 on the whole area of control competences. These latter paragraphs could be improved by containing an introductory passage explaining broadly what IFAC means by IT control knowledge and competences. It would be beneficial if the IEPS elaborated on IES 2 in this area, as the IES deals with this only in broad terms. The emphasis on control competences in the IEPS is consistent with the requirements of IES 2, but the IEPS does not elaborate or expand on the IES 2 coverage in the context of the application of controls to personal systems.</p> <p>The assumption is that the accountant will require IT control competences mainly in the role of assurance provider and evaluator, or possibly in compliance and internal control, but some control competences could also fall under particular user roles.</p>	Y	IAESB decided that definition/explanation of IT control not required as already in public domain (e.g. COSO).
9	OSAM	Suggest underscoring the importance of understanding that IT use is more than a key enabler, but also includes responsible and ethical use of technology including the exercise of appropriate internal; control.		
10	Deloitte	We suggest that the heading for this section read: “User Role IT Control Competences.” In addition, we believe that these two paragraphs would read better if combined as follows:		This paragraph now deleted in any case – replaced by guidance in Section 1 relating to

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		<p>“Whatever the primary work situation or role, all professional accountants need to be familiar with a broad range of tasks and how to apply IT systems and tools to them. Users are users of various information technologies and employ information systems tools and techniques to help them or others meet their objectives. These objectives, and therefore the types and uses made of IT tools and techniques, can vary widely.”</p>		<p>general knowledge of IT and general IT control knowledge.</p>
15	ISACA	<p>Whatever the primary work situation or role, all professional accountants need to be familiar with a broad range of tasks and how to apply IT systems and tools to them. <u>(Please clarify.)</u></p>		
		<p>PARAGRAPH 24</p> <p>Users of various information technologies employ information systems tools and techniques to help them or others meet their objectives. These objectives, and therefore the types and uses made of IT tools and techniques, can vary widely.</p>		
2	Norwegian Auditor General	<p>More precise expectations statements should be formulated, as done in 26 and 27</p>	Y	<p>This paragraph now deleted.</p>
		<p>PARAGRAPH 25</p> <p>As users of IT, professional accountants are exposed to a wide array of information systems architectures, hardware, software, and methods of organizing data. Although no user could be an expert in all of these, professional accountants need to have certain fundamental competences.</p>		
2	Norwegian Auditor General	<p>More precise expectations statements should be formulated, as done in 26 and 27</p>	Y	<p>IT user guidance provided in Table 1 and Paras 23/24.</p>
		<p>PARAGRAPH 26</p> <p>All professional accountants are expected to demonstrate competence in some, but not all, of the user role IT control</p>		

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
10	Deloitte	<p>competences listed in Appendix 3, as relevant to the individual’s working environment. The second column of Appendix 3 lists various competence elements that could demonstrate each competence. Items on this list are provided for illustration only, and are not intended to be prescriptive.</p> <p>We recommend the following editorial change:</p> <p>“All professional accountants are expected to demonstrate competence in some, but not all, of the user role IT control competences listed in Appendix 3...”</p>	N	IT control competences is terminology used in IES 2, so need to maintain consistency.
15	ISACA	Suggest underscoring the importance of understanding that IT use is more than a key enabler, but also includes responsible and ethical use of technology including the exercise of appropriate internal; control.	Y	Ethics now included in appendices.
2	Norwegian Auditor General	<p>PARAGRAPH 27</p> <p>For qualification as a professional accountant, the minimum expected level of competence for the user role is knowledge and understanding of the competence elements. This is evidenced by the ability to describe or explain the significance of the issues related to the listed competences in a relevant business setting, and to demonstrate proficiency in those competence elements.</p> <p>There should be a reference between "level of competence"/"competence elements" and the relevant appendix.</p> <p>We recommend a more precise description of the knowledge and understanding requirements. What level of knowledge and understanding the requirement "describe or explain" implies is unclear for us.</p>	Y	Appendices now more clearly signposted. Competency statements now included in document and appendices where appropriate.

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
ASSURANCE PROVIDER AND EVALUATOR ROLE COMPETENCES				
		PARAGRAPH 28 The role of the assurance provider and evaluator includes internal as well as external audit functions.		
10	Deloitte	Following on from the comments made above, we believe that this section should also recognize that in many geographies it is best practice for the professional accountant operating in these roles to demonstrate his or her competence by obtaining additional specialist certifications or qualifications. This is especially true for those providing assurance or evaluation services in respect of complex IT systems.	n/a	This is now covered in Section 2 – post-qualification, but we do not mention specific certifications or qualifications.
15	ISACA	In headings Assurance Provider and Evaluator Role Competences and Manager Role Competences , should the word be competencies?	N	“competences” used by IES 2.
		PARAGRAPH 29 Professional accountants concentrating on the role of assurance provider and evaluator require the specific assurance provider and evaluator role control competences listed in Appendix 4. The second column of Appendix 4 lists various competence elements that could demonstrate each of these competences. Items in the second column are provided only for illustration, and are not intended to be prescriptive.		
	PWC	Paragraph 29 of IEPS 2.1 brings in a requirement which, in our view, is beyond IES 2 (and IES 8). Paragraph 29 states that “Professional accountants concentrating on the role of assurance provider and evaluator require the specific ... control competences listed in Appendix 4’. Whilst Appendix 4 does not use the term ‘control competences’ it does list out some competence areas, with supporting competence elements. It is not clear which of these categories IEPS 2.1 intends to ‘require’ but we consider competence in either category goes beyond both Paragraph 31 of IES 2 which states that “...would not be expected to demonstrate proficiency in all the competences’. We recognise that Paragraph 31 of IEPS 2.1 attempts to clarify the expected level of proficiency for professional accountants at the point of qualification however we consider that Paragraph 29 would be clearer if it stated:	Y	IEPS does not now use “require” – provides illustrative guidance in this area only.

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		<p>“Professional accountants concentrating on the role of assurance provider and evaluator can, to varying degrees and dependent on their role, demonstrate some or all of the specific competences listed in Appendix 4.”</p> <p>We would suggest a similar approach to Paragraph 35 of IEPS 2.1 which requires control competences relating to the manager role and Paragraph 40 of IEPS 2.1 which requires control competences relating to the designer role. Similar to Appendix 4, neither Appendix 5 nor 6 use the term ‘control competences’.</p>		
9	OSAM PWC	<p>PARAGRAPH 30 In addition, required competences for the role of assurance provider include the communication and interpersonal skills required to support interaction with top management, users, steering committees, and internal and external suppliers of information systems services.</p> <p>Include business process owners. May also want to consider including external parties, such as oversight or regulatory bodies.</p> <p>Similar to section a) above, paragraphs 30, 36 and 41 also appear to bring in a new competency requirement beyond IES 2 since they state “In addition, required competences for the role of ... include the communication and interpersonal skills required ...”. This requirement does not appear to be set out in IES 2, nor is it set out in IES 3 Professional Skills, which uses the term ‘should’ to describe expected, rather than required, competences.</p> <p>In addition, since the skill areas in these paragraphs are not related to IT, we consider they should be deleted. IES 3 deals with the interpersonal and communication skills required of professional accountants and, in our view, it is correctly dealt with there.</p> <p>PARAGRAPH 31 For qualification as a professional accountant, the expected level of competence for the role of assurance provider is knowledge and understanding of (but not necessarily proficiency in) the competence elements. This is evidenced by the ability to describe or explain the significance of issues related to the listed competences in a relevant business setting. A candidate in this role is expected to be able to participate effectively in the activities listed in the second column of Appendix 4, as part of a team or under supervision. A higher degree of proficiency is likely to be required of an audit professional performing the role of IT assurance provider.</p>	Y	<p>This paragraph (and similar paras) now deleted – Task Force agreed that this was setting an additional requirement. Communication included as illustrative guidance in appendices.</p>

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
2	Norwegian Auditor General	There should be a reference between "level of competence"/"competence elements" and the relevant appendix. We recommend a more precise description of the knowledge and understanding requirements. What level of knowledge and understanding the requirement "describe or explain" implies is unclear for us.	Y	Appendices now more clearly signposted. Competency statements now included in document and appendices where appropriate.

MANAGER ROLE COMPETENCES

PARAGRAPH 32

Professional accountants are often involved in financial and management roles that bring them into contact with information systems. Although the growth of IT has created new professional specialisms, many professional accountants in small and medium-sized organizations often fulfill information systems management functions themselves.

13 AICPA Manager Role Competences, 2nd sentence: Is ‘specialisms’ an actual word? How about ‘specialties’ instead?

Y This paragraph now deleted.

PARAGRAPH 33

In a management function more emphasis would be given to IT competences such as:

- the ability to evaluate effectiveness and efficiency of information systems; and
- the ability to assess the degree to which an information system meets the needs of users and serves the objectives of the entity.

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		<p>PARAGRAPH 34 As IT managers, professional accountants need to have a sound understanding of the business functions IT can fulfill and the IT related managerial processes.</p>		
		<p>PARAGRAPH 35 Professional accountants who concentrate on the IT manager role require the specific manager role control competences listed in Appendix 5. The second column of Appendix 5 lists various competence elements that could demonstrate each of these competences. Items in the second column are provided for illustration only, and are not intended to be prescriptive.</p>		
		<p>PARAGRAPH 36 In addition, required competences for the manager role include the communication and interpersonal skills required to support the manager's interactions with top management, users, steering committees, and internal and external suppliers of information systems services.</p>		
		<p>PARAGRAPH 37 For qualification as a professional accountant, the expected level of competence for the role of manager is knowledge and understanding of (but not necessarily proficiency in) the competence elements. This is evidenced by the ability to describe or explain the significance of the issues related to the listed competences in a relevant business setting. A candidate in this role is expected to be able to participate effectively in the activities listed in Appendix 5 as part of a team or under supervision.</p>		
2	Norwegian Auditor General	<p>There should be a reference between "level of competence"/"competence elements" and the relevant appendix.</p> <p>We recommend a more precise description of the knowledge and understanding requirements. What level of knowledge and understanding the requirement "describe or explain" implies is unclear for us.</p>		<p>Appendices now more clearly signposted. Competency statements now included in document and appendices where</p>

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
				appropriate.
DESIGNER ROLE COMPETENCES				
PARAGRAPH 38				
Professional accountants, whether they are employees or external advisors, are often involved in designing financial systems. Their design activities will often emphasize (a) identifying user needs, (b) considering costs and benefits of proposed solutions, (c) appropriately selecting and combining hardware, pre-packaged software, essential control features and other systems components, and (d) effectively implementing and integrating acquired or developed systems with business processes.				
2	Norwegian Auditor General	<p>Among other things we think that knowledge about these issues is basic in a designer role:</p> <ul style="list-style-type: none"> -Tendering - Purchase knowledge - Issues addressed in contracts with providers, - Testing, - Security, - post implementation review, - System development tools, - System development methodology - Change management 	N	Many, if not all of these areas already included in relevant appendices.
9	OSAM	Include designing appropriate internal controls.		
15	ISACA	add: <u>e) designing appropriate internal controls over financial reporting and operations, including security and privacy controls.</u>		
PARAGRAPH 39				
In support of this role, the professional accountant needs specific and/or specialist knowledge. This includes knowledge of business processes and business systems behind these processes, and the capabilities of various information technologies to				

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
9	OSAM	<p data-bbox="317 345 1570 378">support organizational objectives.</p> <p data-bbox="317 386 1570 418">Include knowledge of operational and IT control objectives and related control practices.</p> <p data-bbox="317 451 1570 483">PARAGRAPH 40</p> <p data-bbox="317 492 1570 589">Professional accountants who concentrate on the designer role require the specific designer role control competences listed in Appendix 6. The second column of Appendix 6 lists various competence elements that could demonstrate each of these competences. Items in the second column are provided for illustration only, and are not intended to be prescriptive.</p> <p data-bbox="317 654 1570 686">PARAGRAPH 41</p> <p data-bbox="317 695 1570 792">In addition, required competences for the designer role include the communication and interpersonal skills required to support the designer’s interactions with top management, users, steering committees, and internal and external suppliers of information systems services.</p> <p data-bbox="317 857 1570 889">PARAGRAPH 42</p> <p data-bbox="317 898 1570 1027">For qualification as a professional accountant, the expected level of competence for the role of designer role is knowledge and understanding of (but not necessarily proficiency in) the competence elements. This is evidenced by the ability to describe or explain the significance of the issues related to the listed competences in a relevant business setting. A candidate in this role is expected to be able to participate effectively in the activities listed in Appendix 6 as part of a team or under supervision.</p>		

APPENDICES

General Statements of Support

13	AICPA	<p data-bbox="317 1166 1566 1261">We were very pleased to see the Subject area: Management of Information Technology in Appendix 1. While Appendix 5 covers it in depth, many accountants do not understand, at even a high level, issues related to IT Management. Some education in this area is critical, specifically policies, security, governance & organization.</p>		
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No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
General Statements of Concern				
1	Alvarez & Marsal	Generally, adding the comprehensive and huge appendices to the document does not seem a great idea to me. They will age faster than the general concepts and their volume detracts from the intent of the document for education guidance. With the appendices its like a course book for universities and not as useable. Hyperlinked web references would both be better maintained and make the core document more portable.	N	IAESB felt appendices useful to education directors and educators
15	ISACA	Provide glossary of abbreviations used	N	Glossary would be too long and abbreviations spelt out where not in common use.
<p>Appendix 1 - General IT Knowledge /Skills Areas</p> <p>As noted in paragraph 22 of this IEPS, IES 2 requires all professional accountants to have at least a general knowledge of IT and IT control before qualification. The knowledge content required for the former is detailed in this appendix. Key knowledge and skills areas, and topics, are shown in two columns, headed: “General IT knowledge/skill area” and “Main topic coverage.” A third column, headed “Illustrative Subject Matter,” lists possible subject matter that might be covered under each main topic. Knowledge of all the subject matter listed in this third column is not expected.</p> <p>The tables below are intended to assist member bodies in developing courses, modules and assessment tools for the various IT knowledge areas.</p>				
9	OSAM	Suggest spelling out acronyms - Include Instant Messaging (IM)	Y	Response to all commentators

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		<p>Subject area: Communication - Risks in communication supported by IT State each as a risk or exposure, such as: Breach of confidentiality, or Failure to safeguard proprietary information</p>		<p>Task Force has considered suggestions for inclusion in appendices.</p>
		<p>Subject area: Communication - Making IT beneficial to communication Include actionable data intelligence</p>		<p>Has made changes where TF members felt:</p>
		<p>Subject area: Information Technology Architecture - Attributes of information Include neutrality (free of bias)</p>		<ul style="list-style-type: none"> - was significant omission; - was relevant to majority of professional accountants; and/or - updated existing requirement (e.g. new abbreviations).
		<p>Subject area: Information Technology Architecture - Role of information within business Suggest expanding the role to include strategic and operational management. Understanding that the focus is less on automated accounting systems, for example, but more on accounting information systems that are integrated with enterprise information systems.</p>		
		<p>Types of business systems Include ERP</p>		
		<p><i>Physical and hardware components of a system</i> - Input/output devices Suggest changing RFI to RFID</p>		<p>Appendices are included for illustrative purposes only, however, and cannot contain every possible aspect of IT suggested by respondents.</p>
		<p>Software - Components of a software configuration Not sure that “Open vs. proprietary systems” is a component. It is, however, a most important area of focus,</p>		
		<p>Software - Security software</p>		<p>Most ED respondents felt that appendices</p>

No.	Respondent	Respondent Comment	ED Change	Staff Comment (where necessary)
		Include Intrusion Prevention Systems and SIM		were sufficiently comprehensive.
		Protocols, standards, enabling technologies Suggest separate focus on open standards		
		Data organization and access methods Suggest including open standards for document formats, example open document format (ODF)		
		IT professionals and career paths in IT organizations Include Chief Security Officer (CSO), Chief Information Security Officer (CISO), Chief Technology Officer (CTO)		
13	AICPA	The “Change control and problem management” skills area could be moved to Appendix 5		
14	CGA	<p>General IT Knowledge/Skills Areas</p> <p>*Communication: Add MMS (multimedia messaging systems) to SMS as MMS is becoming an important communication tool. The topic of VPN (virtual private network) is an important concept for communications, and VPN has security implications that accountants should be familiar with. The concept of encryption, as applied to communication, is also an important concept, and in particular, understanding how public key encryption work is fundamental to understanding digital signatures as well as how e-commerce works.</p> <p>*Software: Security software -- add anti-spyware and anti-phishing as these are important security software tools</p> <p>*Project management: Initiate the project -- add project charter as an important topic for project management</p> <p>Management of IT</p> <p>*Security management -- change Disaster recovery sites to Disaster recovery strategies as the latter is more important for accountants to know.</p> <p>* Software for professional use: Office software -- add online office productivity tools as an important topic. This type of web-based hosted solutions will gain importance over the next few years.</p>		

No. Respondent Respondent Comment

ED Change Staff Comment (where necessary)

In our review of the exposure draft and other IT education literature we have identified that the area of **Ethics and Social Responsibility** is an emerging issue in Information Technology. Ethics is implied IEPS 2.1 when discussing privacy and the use of information as in Appendix 1 and is addressed under the Competency appendices (Appendix 3 to Appendix 6) but ethics should also be addressed in greater detail under Appendix 1 (General IT Knowledge/Skills Areas). We are of the opinion that by placing a greater emphasis on Ethics within Appendix 1 itself will improve the quality of the Appendix.

Our recommendation for improving Appendix 1 is as follows:

New Area: Ethics and Social Responsibility

General IT knowledge/skills area	Main Topic Coverage	Illustrative Subject Matter
<i>Ethical and Social Responsibility Issues</i>	<i>Ethics</i>	<i>Impact on IT of the compliance with accounting codes of ethics/ professional standards</i>
	<i>Social Responsibility</i>	<i>Privacy, use of information Political / Social concerns</i>

2. In Appendix 1 within the main topic coverage area of **Applications of internet commerce**, a thorough analysis of strategies for successful e-commerce and strategic uses of the Internet would add value to the IEPS 2.1.
3. It is recommended that IEPS 2.1 increase the coverage of the role of IT auditing and auditing techniques (that is auditing around vs through the system) by including these topics as subject matter areas in the main topic coverage area of

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		Computer-assisted audit techniques.		
		4. We recommend that the RFQ/RFP component be stated more explicitly within the main topic coverage area of Infrastructure and software services.		
		5. Other technical areas that were not evident within Appendix 1 were artificial intelligence and virtual reality systems; data warehousing / data marts / data mining and secondary storage (disk mirroring / duplexing) and parity.		
15	ISACA	<p>Communication</p> <ul style="list-style-type: none"> - It is important for the PA to be aware of not only the common risks but also the controls in the various forms of communication available to them. - It is also important for PAs to understand how to properly handle data. PAs often deal with confidential information and ensuring this data is handled and communicated in a proper and secure manner is important. - IT Architecture seems to be all encompassing. Can a CPA/CA with two years experience be expected to know this? <p>Systems Acquisition/Development Process</p> <ul style="list-style-type: none"> - Many areas are covered that may not necessarily apply or ever be encountered by a PA. - SDLC's also vary based on business and many steps mentioned here would be skipped or changed - Some of the areas within this section are project management based and not related to IT specifically. Planning, resourcing and budgeting are examples of this. - Management of IT- Why are some areas relegated to management? I would think that problem and incident resolution can be done at all layers not just management <ul style="list-style-type: none"> • Page 11: General Concepts of Communication should include mobile computing. Security [confidentiality, integrity, availability and restricted access] Instant Messaging (IM) Actionable data intelligence State each as a risk or exposure, such as: Breach of confidentiality, or Failure to safeguard proprietary information • Page 12: Neutrality (free of bias) 		

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		<p>- “Subject area: Information Technology Architecture Role of information within business” Suggest expanding the role to include strategic and operational management. Understanding that the focus is less on automated accounting systems, for example, but more on accounting information systems that are integrated with enterprise information systems.</p> <ul style="list-style-type: none"> • Page 12: <ul style="list-style-type: none"> - Nature and Types of systems could include in house/outsourced systems. - SDLC could include cost benefit analysis and post implementation review. - Security Software could include encryption. - Physical storage devices: Data representation by computer, [server, database and personal computers], data compression - Security software: Authentication , access control software and authorization • Page 13: ERP; RFID • Page 14: Intrusion Prevention Systems; SIM; not sure that “open vs. proprietary systems” is a component; however, it is a most important area of focus. • Page 15: Suggest separate focus on open standards. • Page 16: Standard Setting Organisations could include ISACA and ITGI. Suggest including open standards for document formats, e.g., open document format (ODF). Chief Security Officer (CSO), Chief Information Security Officer (CISO), Chief Technology Officer (CTO) • Page 17: Acquisition/Development phases could include benefits realisation. <ul style="list-style-type: none"> - Table: Approaches: Waterfall, spiral, interactive, prototyping, Agile, Scrum/Sprint - User requirements elicitation: <ul style="list-style-type: none"> Processing modes Features User interface: screen, report, form layouts Control requirements Data bases/files/records • Page 18: <ul style="list-style-type: none"> - Systems Design could include User Acceptance Testing and Systems Testing approach. - Documentation could include Functional and Systems Specification. • Page 19: Initiate the Project could include IT Steering Committee. 		

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		<ul style="list-style-type: none"> • Page 21: Problem Management could include an Issues Register. • Page 22: <ul style="list-style-type: none"> - Logical Security could include Penetration Testing. - CAATs could include data Analysis and Benford's Law. • Page 23: Outcome Measurement could include System downtime. • Page 24: Business Models could include Centralised/Decentralised. • Appendix 2: Control activities-Controls are important enough to warrant their own section and are really what matter to accountants for IT. • Page 26: IT Oversight could include IT Steering Committee. • Page 31: Ongoing Monitoring Activities could include Continuous Assurance. 		
	PWC	<p>We understand that Appendix 1 of IEPS 2.1 ‘General IT Knowledge/Skills Areas’ is designed to further explain Paragraph 28 (a) of IES 2 (general knowledge of IT). We consider the areas and topics set out in Appendix 1 are very wide ranging and often cover topics relevant to an IT specialism. For example, they range from topics such as E-business enabling software to internet protocols to technical topics such as programming languages and compilers. We recognise that whilst all the topics could be useful for selected professional accountants, and a general awareness of some of the topics is useful for all, many of the topics may not be relevant to many professional accountants on a day to day basis.</p> <p>Consideration should be given to refining Appendix 1 to focus on the knowledge/skills areas required by the majority of professional accountants.</p> <p>In addition, consideration should be given to refining the scope of the IT knowledge topics covered so that more guidance is provided to educators on what ‘good practice’ suggests should be included in an IT curriculum for professional accountants. The current approach provides an extremely detailed overview of many IT topics and we consider that the wide ranging nature does not provide sufficient guidance on the breadth and depth of a ‘good practice’ IT curriculum.</p> <p>IT control frameworks</p> <p>In Appendix 1 “General IT knowledge/skills area” and within the IT control frameworks topic the following are listed as</p>		

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illustrative subject matter: COBIT, ITGC, SysTrust, WebTrust, OECD and BS7799. Although we recognise that the Appendix is designed to provide illustrative material, consideration could be given to the following :

- Including COSO – although it is not purely related to IT it is a widely known control framework and can be applied to IT;
- BS7799 has now been replaced by ISO27001;
- ITGC (Information Technology General Controls) is not an IT control framework as such; and
- OECD needs further definition

Currency of the Appendices 1 and 2 (IEPS 2.1)

We recognise that readers of IEPS2.1 are likely to find much of the content of column three of Appendix 1 and 2 ‘Illustrative subject matter only’ useful. However the nature of the subject matter means that this material is unlikely to stay current. (One existing example, by way of illustration, is that the e-business enabling software section of Appendix 1 does not refer to internet banking. The illustrative subject matter in general application software, also in Appendix 1, does not reflect current technology trends).

The balance between providing illustrative information at a point in time and their on-going relevance in a rapidly changing environment should be carefully assessed. We suggest that the Appendices are updated regularly, or that the detail is reduced to conceptual topics (the approach followed in Appendices 3 to 6) which will remain current for a longer period.

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		<p>Appendix 2 - General IT Control Knowledge/Skills Areas</p> <p>As noted in paragraph 22 of this IEPS, IES 2 requires all professional accountants to have at least a general knowledge of IT and IT control before qualification. The knowledge content required for the latter is detailed in this appendix. Key knowledge and skills areas, and topics, are shown in two columns, headed: “General IT Control knowledge/skill area” and “Main topic coverage.” A third column, headed “Illustrative Subject Matter,” lists possible subject matter that might be covered under each main topic. Knowledge of all the subject matter listed in this third column is not expected.</p> <p>The tables below are intended to assist member bodies in developing courses, modules and assessment tools for the various IT knowledge areas.</p>		
13	AICPA	<p>Appendix 2, overall was excellent. Should SOX 404 be explicitly mentioned?</p> <p><i>Conducting IT control activities</i> – IT Control frameworks, the control frameworks of SysTrust and WebTrust have been combined and are now known as Trust Services Principles, Criteria, and Illustrations For Security, Availability, Processing Integrity, Confidentiality, and Privacy (Including WebTrust and SysTrust) or simply “Trust Services Principles and Criteria”. In addition with knowledge of privacy and data protection being part of the knowledge and skills required, the AICPA/CICA document Generally Accepted Privacy Principles (GAPP) should be included as a necessary framework.</p>		
		<p>Appendix 3 - User Role IT Control Competences</p> <p>All professional accountants are expected to demonstrate competence in some, but not all, of the competences outlined in this appendix. The specific areas of competence required will depend on the individual’s working environment.</p> <p>This appendix lists various competence elements (or tasks) that could be used to demonstrate each competence. They are provided for illustrative purposes only and are not intended to be prescriptive.</p>		
	PWC	<p>Paragraph 14 of IEPS 2.1 states that “In addition to the role as an IT user, all professional accountants are expected, as part of their pre-qualification education, to participate in at least one of the three other roles...”.</p>		

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		<p>This is consistent with Paragraph 30 of IES 2. Paragraph 32 of IES 2 defines the broad competence areas relating to the user role as:</p> <ul style="list-style-type: none"> (a) apply appropriate IT systems and tools to business and accounting problems (b) demonstrate an understanding of business and accounting systems; and (c) apply controls to personal systems. <p>We understand that Appendix 3 of IEPS 2.1 “User role IT Control Competences” is designed to further explain the broad areas of competence in Paragraph 32 of IES 2. On reviewing the wide ranging information in Appendix 3, we are concerned that it has both broadened and deepened the competences expected of all professional accountants beyond that contemplated by Paragraph 32 of IES 2.</p> <p>In addition to the three areas described in Paragraph 32, it now includes a focus on the evaluation of systems, with a number of the competences aligned to evaluating the internal control components as defined by COSO, which are</p> <ul style="list-style-type: none"> • IT control environment • IT risk assessment • IT control activities • information and communication; and • monitoring <p>Some of the competence elements given as illustrative examples are focused on IT General Controls, particularly within the Evaluate the IT control activities competence. Since in many clients, the evaluation of IT General Controls is conducted by specialist IT auditors we do not consider they should form part of the IT user role.</p> <p>In practice, we do not consider that an IT user would require many of the competences set out in Appendix 3, particularly to complete the example roles set out in Paragraph 12 (a) of IEPS 2.1, of a tax practitioner or an insolvency practitioner. Furthermore, we would expect the competences relating to evaluation of systems to form part of the “Assurance Provider and Evaluator” role, and not the IT user role.</p>		

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		<p>We consider it would be both appropriate and useful for Appendix 3 to focus specifically on the IT user role and to clearly link back to the three components of that role as defined in Paragraph 32 of IES 2.</p>						
		<p>Appendix 4 - Assurance Provider and Evaluator Role Competences</p> <p>This appendix lists various competence elements (or tasks) that could be used to demonstrate each competence. They are provided for illustrative purposes only and are not intended to be prescriptive.</p>						
15	ISACA	<ul style="list-style-type: none"> - This section may be the area to emphasize the importance of understanding risks and controls. A deeper level understanding of the following areas could be Audit standards (COBIT); Auditing techniques; Documentation and evidence gathering procedures; Computer aided auditing tools; Deeper level of understanding in technical areas; IT than a normal PA but obviously less than a user/designer of a particular application. - Page 35: Assurance Provider and Evaluator Role are two separate functions and should not be combined. Where does system validation and verification appear? Similarly validation and verification of controls is missing. 						
16	EY	<p>The following tables represent examples of a suggested framework that might be leveraged for organizing the competency definition for each role. We believe general IT auditing competencies are required by all three typical roles that we have suggested in the body of our comment letter. The primary differentiators for the required level of IT competence are the role and the complexity of the IT environment on the engagement. An audit professional would be expected to apply these general IT auditing competencies in a non-complex IT environment, whereas the IT Auditor would be expected to apply in a complex IT environment. An equivalent set of tables should be prepared for the generalist professional accountant.</p>	N	<p>See comments above – IAESB cannot set different competency requirements for junior/senior professionals – for member bodies/employers to do this.</p> <p>Would require a fundamental re-write of IESs to do this.</p>				
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #e0e0e0;">General IT Auditing Competencies</th> </tr> </thead> <tbody> <tr> <td style="width: 20%; background-color: #e0e0e0; vertical-align: top;">Competency Description</td> <td> Perform a financial audit in the context of the business information technology infrastructure: <ul style="list-style-type: none"> ❖ Understand regulatory control reporting requirements (e.g., Sarbanes Oxley Section 404, Eighth Directive) ❖ Understanding how IT supports the business and introduces or mitigates business </td> </tr> </tbody> </table>	General IT Auditing Competencies		Competency Description	Perform a financial audit in the context of the business information technology infrastructure: <ul style="list-style-type: none"> ❖ Understand regulatory control reporting requirements (e.g., Sarbanes Oxley Section 404, Eighth Directive) ❖ Understanding how IT supports the business and introduces or mitigates business 		
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	risk ❖ Evaluating the IT environment at the entity level ❖ Identifying and evaluating IT general and automated application controls in business processes ❖ Determining control testing strategy and performing, evaluating, and concluding on internal control testing ❖ Assessing the impact of our internal control testing results on the combined risk assessment and related substantive testing ❖ Reporting findings to executive management and financial audit team	
General IT Auditing Competencies		
Beginner	Intermediate	Executive
Documentation of the IT related business risks Documentation and test the IT entity level controls Participate in the interviews, walk through, documentation, and testing to understand and document routine processes, risks, and IT general and automated application controls.	Document and identify specific procedures that need to be performed as a result of IT related business risks and IT entity level controls Develop individual control testing strategies Lead the interviews, walk through, documentation, and testing of complex, non-routine and estimation processes, risks, IT general and automated application controls. Perform detailed reviews of staff work documentation and testing of	Manage and challenge the documentation of IT related business risks and entity level controls Perform detailed review of working papers supporting complex processes and perform second-level reviews of working papers supporting routine processes Identify areas of control optimization, including placing reliance on IT application controls, benchmarking IT automated

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	<p>routine processes, risks, and IT general and automated application controls.</p>	<p>application controls, and placing greater reliance on pervasive entity level controls to reduce manual controls testing at the process and application level</p> <p>Manage the process of addressing the audit impact of IT control testing exceptions (including consultations as necessary)</p> <p>Identify areas for controls rationalization and communicate the rationalized set of controls to management, as appropriate.</p> <p>Advise management on moderately complex technical issues, including implementing a top down, risk based approach</p>
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The IT Auditors would also possess competence in various components of an IT architecture including operating systems, databases, networks and appropriate application software, which should be based upon the engagement. Below is an example of competencies an IT Auditor should possess for a given Operating System.

Specialized IT Auditing Competencies		
Competency Description	❖ To be drafted by Cyndy	
Operating Systems		
Beginner	Intermediate	Executive
Understand the basic security features of an operating system (e.g., user level, logical access, password parameters, logging, and basic file system permissions) Perform operating system reviews for one platform (e.g., OS400, UNIX, or Windows)	Review multiple operating system within a given business (e.g., OS400, UNIX, or Windows) Explain alternate authentication systems (e.g., NIS, LDAP) and advanced file sharing (e.g., SAMBA, NFS) Explain the risks and implications of complex file system permissions (inheritance and linked permissions) Outline the minimum security values within an audit program Explain the process to upload and download scripts and output	Use the administration console(s) or interface(s) for the operating system Develop the Audit workplan for the required risks Interpret data and understand its risks and implications

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PWC	<p>Appendix 4 of IEPS 2.1, in our opinion, raises a question which is fundamental to the Practice Statement. This relates to the definition of the Assurance Provider/Evaluator role. In our view, the “Evaluate systems” competence in Appendix 4 defines the role which an IT auditor may be required to undertake on an audit. Paragraph 6 of IEPS2.1 states that that the Practice Statement “sets out the knowledge and skills professional accountants require (a) to formulate the precise questions to be answered by specialists such as the IT auditor, and (b) to understand the outcome of the activities of such specialists”, which map to the “Plan systems evaluation” and “Communicate results of evaluation and follow-up” competences in Appendix 4. However, the appendix also includes the “Evaluate Systems” competence which is not referred to in Paragraph 6.</p> <p>If it is determined that in some instances a professional accountant (who is non-IT specialist) is expected to demonstrate the “Evaluate Systems” competency then the complexity of systems must be discussed. The skills required to demonstrate the competence elements in a non-complex systems environment (for example a very small entity using an off the shelf package) are very different to those required to evaluate systems in a complex systems environment (for example a multi-national organisation using a variety of technologies and applications). We believe that reference should be made to the complexity of systems environments so it is clear where the distinction lies between a professional accountant and an IT auditor to clarify the competences expected of the non-IT specialist.</p> <p>We also suggest that Assurance Provider and Evaluator role competences are aligned with COSO – as they are currently in the General IT Control Knowledge/Skills Areas (Appendix 2). And the User role (Appendix 3).</p>	Y	<p>Appendix now split to cover Evaluator Role (pre-qualification) and a new appendix added with illustrative competency elements for Audit Professionals (post-qualification).</p> <p>Complexity of systems now discussed in body of IEPS.</p>	

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<p>Appendix 5 - Manager Role Competences</p> <p>This appendix lists various competence elements (or tasks) that could be used to demonstrate each competence. They are provided for illustrative purposes only and are not intended to be prescriptive.</p>				
13	AICPA	Manage entity’s IT Strategy, and the actual elements outlined were very good.		
15	ISACA	Could include Managing IT Risks, Risk assessment, Knowledge Management, Data warehousing/ Data Mining		
	PWC	Appendix 5 of IEPS 2.1 defines the competences required of a Manager of IT and Appendix 6 defines the competences required of a Designer. We would question whether it is appropriate for this guidance to define these roles as not every IT Manager and Designer will be a professional accountant and there are many more technical competences required that are not touched upon in this guidance.	N	Roles are taken from IES 2, and IAESB decided were still appropriate and helpful at pre-qualification stage.
<p>Appendix 6 - Designer Role Competences</p> <p>This appendix lists various competence elements (or tasks) that could be used to demonstrate each competence. They are provided for illustrative purposes only and are not intended to be prescriptive.</p>				

V. Editorial Comments

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13	AICPA	If the Explanatory Memorandum is part of the final document, the last paragraph of the 'Background' section (page 2) needs to be emphasized. If not, 'Purpose of this Practice Statement' (page 5) covers this very well.	N	Not part of final document.

RESPONDENT NO.	ACRONYM	FULL NAME OF ORGANIZATION
7	ACCA	Association of Chartered Certified Accountants
1	Alvarez & Marsal	Alvarez and Marsal Holdings, LLC
13	AICPA	American Institute of Certified Public Accountants
12	CIMA	Chartered Institute of Management Accountants
14	CGA	CGA Canada
10	Deloitte	Deloitte Touche Tohmatsu LLC
3	ICAEW	Institute of Chartered Accountants of England and Wales
16	EY	Ernst & Young
4	ICAI	Institute of Chartered Accountants in Ireland
5	ICMAP	Institute of Cost and Management Accountants of Pakistan
8	ICPAI	Institute of Certified Public Accountants of Ireland
17	IDW	Institut der Wirtschaftsprüfer in Deutschland
11	IMA	Institute of Management Accountants
15	ISACA	Information Systems Audit and Control Association
2	Norwegian Auditor General	Office of the Auditor General of Norway
6	Oyelade	A.A.I. Oyelade, West African Examinations Council
9	OSAM	Office of the State Auditor, Massachusetts
18	PWC	PricewaterhouseCoopers