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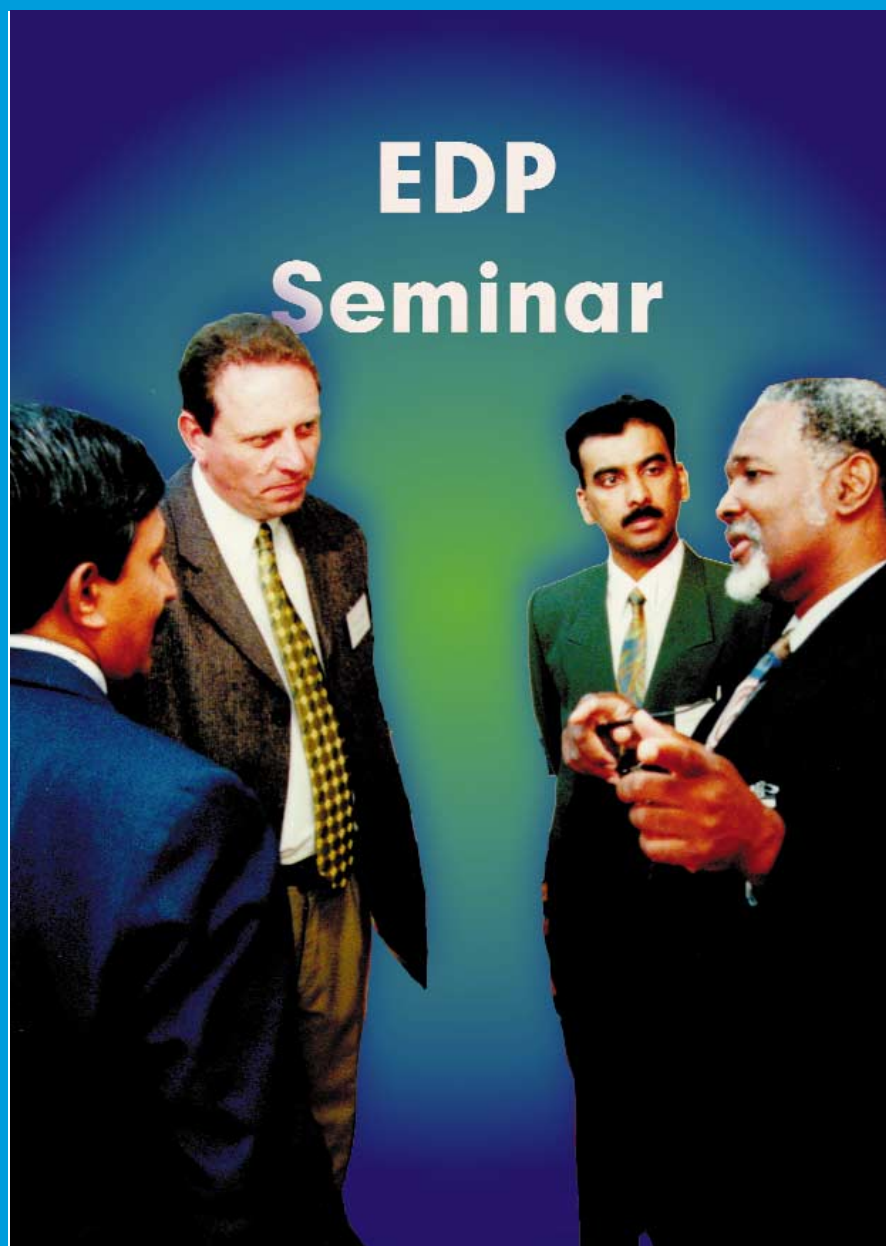
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**This** is the ninth edition of intoIT to be published. intoIT is the IT journal of the INTOSAI EDP Committee. The journal is published twice a year, and aims to provide an interesting mix of news, views and comment on the use of IT in SAIs around the world.

Material in the journal is not copyrighted for members of INTOSAI. Articles from intoIT can be copied freely for distribution within SAIs, or reproduced in internal magazines, or for use on training courses.

The Editor welcomes unsolicited articles on relevant topics, preferably accompanied by a photograph and short biography of the author, and short news items, for inclusion in future issues.

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# Editorial

## *The Chairman of the INTOSAI EDP Committee, Mr VK Shunglu reports on the work of the Committee and introduces this issue.*

Since the publication of the 8th issue of intoIT several important developments, relating to the INTOSAI Standing Committee on EDP Audit, have taken place. In November 1998 the committee presented to the XVI INCOSAI, at Montevideo, a report of its work and its workplan for the next three years. The Committee's work drew wide appreciation and its workplan obtained general approval. An article, in this issue, provides more detail. The Committee also established its website. This site among other items will feature the intoIT publication. We look forward to comments and suggestions of readers on the Website. The committee also produced a CD-ROM containing "The Electronic Compilations of SAI Mandates", "the EDP Directory" and "The IT Audit Courseware". The CD-ROM was distributed to SAIs during XVI INCOSAI. The produce highlights the tremendous possibilities for storing and distributing large volumes of information using a CD. The Swedish National Audit Office has, on behalf of the committee, published and distributed proceedings of the Performance Audit Seminar, held in Stockholm in May 1998.

In this issue we have a country focus article on Oman, a report by SAI Sweden on the Performance Audit Seminar and from SAI India on the future workplan of the Committee. Other features are an article by SAI UK on "Financial Audit Support Software and an article on the INTOSAI EDP Committee Website.

During the XVI INCOSAI we received several enquiries about the "intoIT". This is evidence of the significant interest the journal has evoked among SAIs and their staff. We are certain that the availability of "intoIT" on the Committee's website would give this journal wider reach and aid our efforts towards information interchange.

# Country Focus - Oman

## The Secretariat General for State Audit discuss their use of Information Technology in Oman

### Introduction

#### Background information about the SAI of Oman



The Secretariat General for State Audit (SGSA) came into being, in its present form, in 1991 through Royal Decree no.129/91, promulgating the State Audit Law, replacing Royal Decree no.36/85 which hitherto dealt with the State Audit Function. However, the State Audit Function in Oman dates back to pre-1970. From a Department under the Ministry of Finance, this office became an independent Department under the Ministry of Diwan Affairs in 1974 and was elevated to a Directorate General in 1981, followed by the Regulation in 1985 organising the State Audit Function. In 1989, the first Secretary General was appointed by a Royal Decree and in 1991, the State Audit Law was promulgated.

The State Audit Law enjoins the SAI to audit State Public Funds in order to (a) protect them, (b) ensure their proper and effective employment, (c) expose cases of financial irregularities, and (d) recommend means of redressing deficiencies in financial laws, rules and regulations.

Besides Government Ministries and Departments, SGSA's audit jurisdiction extends to Public Authorities and other bodies in which Government has a share and/or receives grants from the Government.

In addition to auditing accounts, stores and the financial dimensions of personnel-related decisions, the State Audit Law specifically requires the SGSA;

- to monitor the implementation and progress of projects falling within the Development Plan to ensure that financial allocations are properly employed, and
- to evaluate such projects to ensure that resources are used efficiently and economically.

In practice, our work has a predominantly compliance and VFM rather than attest audit focus.

Our reports are issued, usually after every audit, to the Ministry concerned. The results of our work throughout the year are summarised in an Annual Report that is mandated by law. This report, which is submitted to His Majesty the Sultan, includes a summary of our audit findings and the action taken

by auditees, observations on the State Annual Accounts, an evaluation of development projects and observations on adequacy of financial laws & regulations, records, systems.

SGSA has at present 144 employees; a small managerial cadre is backed by a few technical specialists, and two main categories of personnel: auditors and administrative support staff. About 40 employees are expatriates. Our annual budget is about US \$4 million; nearly 80% of it is spent on salaries. About 1.3% is spent on Information Technology (IT).



The main office is in the capital, Muscat. A branch office is located in the southern city of Salalah, which is about 1000 kilometers away and is the other significant centre of Government activity. We have a few resident audit offices in important/large Ministries and field audit groups for auditing other agencies.



*The broad goal is to ensure that, by the middle of 1999, every field audit team has dial-up access to audit support materials and other official data, and the ability to communicate electronically with the main office*

## Information Technology in SGSA

### IT in Oman

The use of IT in Oman is widespread, with Government probably being the biggest spender as most Ministries and Public Bodies use a lot of IT for their public services and internal operations. State-of-the-art information technologies are also rapidly being assimilated and deployed.

A significant aspect of the use of IT in Government is a centralised accounting system for the entire Government, which is run on an IBM mainframe computer in the Ministry of Finance. A large amount of information about all Government projects and the entire civil service of the Government of Oman is available through this system. All Ministries have terminals through which data can be entered and reports obtained.

### IT in the Secretariat General for State Audit

IT in SGSA can be discussed under the following broad headings:

- The Beginning (1989-96)
- The Big Push (Late 1996 - 1998)
- Future Direction

#### The Beginning (1989-96)

IT is not new to SGSA. A Wang computer with 9 terminals was installed in 1989 primarily to meet our word processing requirements. The year 1992 saw a modest improvement, albeit an important one:

- 4 terminals were installed to provide on-line access to the Government's IBM mainframe computer and to the government-wide financial and personnel information in that system,
- a Local Area Network (LAN) was set up in our main office with a **file-server** running Novell Netware 3.11 and 8 PCs with 386 processors with Microsoft Windows 3.1, and
- an IT department was formed with 4 programmers and an IT specialist.

Microsoft Word and Excel gained popularity; applications like payroll, budget and correspondence tracking were automated with in-house programmes using Dbase for DOS. As IT skills developed, 6 more Pentium-based PCs were added in early 1996 to meet the demand for word processing and database applications.

## The Big Push (Late 1996 - 98)

### The IT Strategy

In October 1996, recognising that IT can play a significant role in achieving our mission, we changed our approach to IT. Drawing upon the INTOSAI EDP Audit Committee's "Guide to Developing IT Strategies for SAIs", we drew up a new IT Strategy with the following purposes in mind:

- Provide a statement of direction from the top management.
- Ensure that scarce resources are committed in line with the overall objectives of the organisation and not on pure technical considerations.
- Make the best use of resources in developing systems.

An IT Steering Committee was also set up, with a charter to monitor the use of IT and related resources.

SGSA's mission, like most other SAIs, is to strengthen the effective governance of the nation, by fulfilling its mandate with excellence. To achieve this, we need to improve audit quantitatively and qualitatively, and use audit insights to address deficiencies in financial laws and regulations. Shortage of resources, both financial and skilled manpower, makes it essential for us to derive the maximum value from those resources. The IT Strategy was formulated against this backdrop.

Our IT Strategy identified the following goals:

- **strengthen the audit function** through better management of resources, use of better audit tools and techniques, and improved information support to auditors;
- **improve administrative efficiency** in order to release scarce resources to audit, and provide superior logistic support to field audit teams; and
- **build and sustain an Information Systems Audit function**, in view of the large IT investments by auditees and the risks posed by such investments.

Some important guiding principles were also established at this stage:

- in-house IT services will be preferred over "outsourcing", in order to build skills internally to sustain the technological efforts and obviate dependence on external agencies for core operations, ensure confidentiality of information, and economise on IT spending;
- existing skills and investments in hardware and software would be protected as far as is practical; and

- IT skills needed by auditors to use audit support materials should be kept to the minimum possible, in order to promote widespread use of such tools, allow them to concentrate on audit rather than IT, and reduce the cost of re-training a floating population of expatriate auditors.

To implement the strategy, long and short term plans were drawn up. The broad goal is to ensure that, by the middle of 1999, every field audit team has dial-up access to audit support materials and other official data, and the ability to communicate electronically with the main office

## Implementation of the IT Strategy

This can be discussed under the following broad headings:

- Information Systems Auditing
- IT Awareness - Training
- Upgrading Infrastructure
- Applications
- Other Key Developments

## Information Systems Auditing

Recognising that building an IS audit function, which was one of the main goals of our IT strategy, is a long gestation project, we focused on it first. We decided that a systematic approach to building the IS Audit function called for a Strategic IS Audit Plan that would be rolled over once every 3 years. In its infancy, this Plan would have a training bias, as building skills would be the first step. The plan, therefore, addressed the following:

- assessing and documenting the IS Audit skills that we will need, based on a quick survey of IT systems in use among auditees;
- drawing up a training curriculum for IS Audit trainees;
- interviewing and selecting two batches (12 each) of relatively young Omani, graduate staff for IS Audit training; and
- drawing up an IS Audit approach based on potentially beneficial audit areas and the skills likely to be available in the near future.

As a formal survey of the use of IT by our auditees would have been time-consuming and taxed our limited resources, we interviewed key personnel in the Ministry of Finance to obtain an overview of the use of IT in Government. Those interviewed were usually involved in different capacities with IT-related matters across the Ministries and other agencies. Our discussions with them covered Government-wide plans for the introduction of new technologies including the establishment of standards, with sufficient information to identify

the types of IS audit skills that we would need. We were also able to throw some light on potentially beneficial areas for audit scrutiny. While this was sufficient for us to move forward quickly, we recognised that it was no substitute for a formal survey so we decided that such a survey would be conducted as part of regular audits in future, when our audit staff are better equipped to perform it.

Based on our assessment of the IS audit tasks ahead of us, we decided to build a large cadre of generalist auditors who can undertake simple IT audit tasks, and a small group of specialist IT auditors. This approach was prompted by the following considerations:

- Due to the widespread use of IT among auditees, all auditors would benefit from basic exposure to IT audit; specialist assistance for each audit would not be practical.
- The IS Audit specialists have to be developed mostly from among the generalist auditors who show adequate promise, after their training and field experience. This would necessarily take time.

Though we are empowered by law to hire external consultants to provide expertise not available internally, we prefer to hire experts as staff or advisors, to work with our staff and to train them over time to be eventually self-sufficient. This approach is based on our conviction that an internal pool of IS audit skills is essential to achieve effectiveness.

We selected 24 young Omani graduates with a positive approach to work and trained them vigorously for over 8 months on both part-time and full-time courses depending on the course-content and their availability. The training, adapted from the INTOSAI EDP Audit Committee's course-ware, was arranged in two batches. The training for the first batch was delivered entirely in English to 12 trainees who were proficient in English. By the second course, we had translated all the presentations into Arabic; so, the second course was delivered entirely in Arabic, though some of the handouts continued to be in English.

We also decided that

- trainees showing promise and aptitude would be sponsored for qualifications like the Certified Information Systems Auditor (CISA), and
- on-the-job IS Audit training would be provided to trainees under expert supervision.

To fulfill the latter of these, two important IS audits were taken up where some of the trainees could apply their IS audit skills under expert guidance. Encouraged by the success of these audits, some of the trainees are now applying their newly acquired skills independently on other audits. We are confident that, with growing exposure, these auditors will provide the core group of IS audit specialists that we aim to build.



To aid IS auditing, in April 1997, we adopted ACL for Windows as the standard for audit interrogation software and developed an in-house training course. The use of ACL for computer-assisted audit techniques (CAATs) has gained popularity, especially among the IS Audit trainees.



In early 1998, we evaluated and decided to adopt the "Control Objectives for Information and Related Technologies" (COBIT) as a framework for IS audits as it provides detailed audit guidelines. By May 1998, we also evaluated and purchased "COBIT Advisor", a software based on COBIT that acts like an expert system for IS auditing, guiding IS auditors and providing electronic work-papers.

### IT Awareness - Training

We were aware that achieving our goals would depend heavily on building and sustaining appropriate IT skills internally. As a prelude to a "training needs analysis" we established the standards for desktop software. As Microsoft Word and Excel were already popular, we decided to standardise on Microsoft Office Professional (English-Arabic) as the desktop suite and Windows 95 (Arabic-enabled) as the desktop operating system. A subsequent assessment of our training needs indicated a substantial demand for training. We explored various options including:



- (a) sponsoring staff for standard courses offered commercially,
- (b) providing customised training through established training institutions or IT business houses,
- (c) licensing computer-based training course-ware from reputed organisations, and
- (d) developing and delivering in-house courses.



The last option was selected as the most convenient and economical as large numbers of staff could be trained quickly through part-time courses, without unduly disturbing their regular work.

Beginner and advanced courses were developed for Windows, Word, Excel and Access. To ensure quality and consistency, course-ware was standardised. Learning objectives were formulated and time-tables developed to ensure their achievement. Each session followed the TELL-SHOW-DO methodology; a powerpoint presentation introduced the subject in Arabic, followed by a Lotus Screencam demo. The demo was available to the trainees for reviewing at their pace and to use as a reference on the job. Practical exercises were used to build and test their skills. The use of Lotus Screencam ensured consistency in the delivery of each session and enabled instructors to concentrate on delivery. We would greatly commend this approach to other SAIs; examples of



these screencams are available on our website (<http://www.sgsa.com>).

While course-ware was being developed, the training infrastructure was established. 12 Pentium PCs were purchased in late 1996 and distributed among users; their older PCs were acquired for training with a goal of one PC per trainee. A good integrated computer/video projection system was also purchased.

Over 9 months we endeavoured to keep the training room and PCs continuously occupied training staff! In April 1997 12 new Pentium PCs were added to the training complement, diverting the older PCs to selected novice-users to enable them to familiarise themselves with Windows.

As the formal training diminished with focus shifting to on-the-job training we passed most of the training PCs back to the users. Trainees are now grouped by need and focused short presentations provided, followed up by practice sessions on their own PCs.

As a result of the increased IT awareness, many employees purchased PCs for their homes. We assisted by guaranteeing the repayments of their loans through deductions from their monthly salary

### Infrastructure upgrading

Having set in motion a long process for building general IT skills and specialist IT audit skills, we focused our attention on building IT systems that would accomplish our goals and creating an IT infrastructure that would enable us to run those systems. With the IT strategy and plans lending clarity to our mission, we created a capital budget for 1997 that would provide us with a high-speed, reliable local area network as the foundation for our IT systems.

In order to achieve the goals of our IT strategy, we realised we would need inter-office electronic mail, workflow applications, a reliable relational database management system and an intranet for delivering content with a user-friendly interface. Our evaluation of different products suggested that Microsoft Back Office might be a very cost-effective solution. It would provide:

- Windows NT Server as a network operating system with a friendly interface,
- Exchange Server for e-mail, workflow and other messaging applications,
- Internet Information Server for web-based services,
- SQL server for database applications, and

- SNA server for replacing the existing IBM terminals with standard PCs connected to the IBM mainframe at the Ministry of Finance through our LAN.

To ensure that the migration to Back Office would be feasible and worthwhile, we signed up with a Microsoft Solution Provider for a free pilot run of Microsoft Back Office in April 1997. Using a standard Pentium 133MHz PC as a server, we ran NT server, Exchange Server and Internet Information Server, with 8 PCs connected to the LAN via the existing token-ring cabling. Satisfied about its friendliness and utility, we decided to buy Microsoft Back Office version 2.5. We floated a limited tender for a mid-range server, structured cabling and Back Office. By June 1997, we placed the order. By September 1997, our new LAN was operational with a Compaq Proliant 2500 server running Back Office on the server and a 100MBPS Fast Ethernet network. Voice lines were transferred smoothly to the new cabling system over a weekend. A fast Ethernet replaced the token-ring network. Users were generally unaware of the change except for the perceptibly higher response speeds and the new cable running from their PC to the wall outlet.

To take advantage of the new infrastructure we added 18 new Pentium PCs and 6 of the diverted training PCs that were hitherto off-line to the LAN. With this, a PC had reached virtually every desk in the main office by the end of 1997.

As the usage of our LAN and its criticality grew, we added new hardware; a UPS in January 1998, a stand-by server (a Pentium 166MMX PC with additional memory and disks) in March 98, and a third server (also a Pentium166MMX PC) in June 1998. In September 1998, we ordered another 24-port Hub to support new users in the main office. In order to improve performance and improve recovery in the event of a disaster, we distributed different services amongst the servers.

In 1998, we started the next phase of our infrastructure implementation. The first phase provided PCs with fax/modem capabilities to our resident audit teams outside the main building, to enable connectivity to our LAN through telephone lines. Three key units; Ministries of Finance and Defence, and the Taxation Department; are now connected. The next phase will involve supplying notebook computers for all field audit teams with connectivity to the main office; we expect to complete this phase by the middle of 1999.

## Applications

Having initiated action for IS audit and general IT training, and set in motion the processes for the creation of a substantial infrastructure to support IT operations by April 1997, we turned our attention to building the systems that would drive our organisation. **Budget, payroll and correspondence tracking** were already operating satisfactorily, so we decided to delay their migration to a new environment. Of the applications we had identified as potential candidates for automation, the **human resources management system** and the **audit management system** were given top priority for prototyping. Microsoft Access databases were quickly created, with a completely Arabic interface using Forms. These prototypes were used to familiarise the users with the new system and make a powerful case for pre-computerisation reforms. They also enabled us to capture historic data.

An **asset management** database was created to maintain an inventory of office assets. Databases for **hardware and software inventories** and manuals were also created. An **electronic technical library** also began to take shape with executive summaries of all internal orders from 1989 to date, with on-line retrieval of images of the originals.



With Exchange Server and Microsoft Outlook, we were able to offer e-mail and group scheduling, both of which were instant hits with staff - young and old. Simple electronic bulletin boards were also deployed but the concept did not catch on.

Another significant development was the **intranet**. We created a broad framework for departmental webs and started by building the web pages for the IT department. Distribution of work within the IT department, software standards, procedures for installing hardware and software, technical manuals, maintenance contacts were included. An Administration Department web page provides access to information about the building plans, visual phone & personnel directories, etc. The Audit Department web page provides access to texts of important legislation.

Creating web content in Arabic and indexing them for searching proved troublesome. In May 1998, we finally adopted "Nashernet" as the Arabic-English web authoring software. We expect our web services to gain popularity as more Arabic content becomes available.



## Key Developments

### The Internet

Not to miss out on the Internet Revolution, we acquired an internet account in November 1996, when these became available in Oman. With the experience gained in creating and managing webs internally, we set up an external Web site in December 1997 (www.sgsa.com). In February 1998, we extended Internet access to selected users on our LAN through a dial-up connection; we used Microsoft Proxy Server, which is part of Microsoft BackOffice. In August 1998, we decided to use the Internet as a vehicle for gathering data from auditees, field audit teams and the public. Our web site is being refurbished to meet this requirement.

### Remote Access to LAN

In March 1998, the first resident audit team outside our campus was connected to the LAN through a telephone link. Two more teams have since been connected. The Secretary General, a few managers and select IT department staff also have remote access to the network. This facility with appropriate controls will be extended to other users.

### Web-based Querying

Consistent with our goal of demanding minimum IT skills from users, we are progressively delivering more information through a browser interface. Personnel and technical library information is already being supplied from Microsoft Access databases dynamically and users can query the databases from their browser. Data-entry is not handled through browser interfaces.

### Workflow applications

After the initial lack of response to bulletin boards and shared public folders in Exchange, the concept of electronic workflow is catching on. Shared tasks, contacts, knowledge bases, etc. are now being used. Also issue and tracking of software media and paper files from the central archive are being done electronically through Exchange folders, using bilingual ( English/Arabic) forms.

### Systems Management

To simplify and streamline systems management tasks and improve the management of IT assets, we recently deployed Microsoft's Systems Management Server, which is again part of Microsoft BackOffice. With this, monthly upgrades of anti-virus software, systems audits for illegal or unauthorised software, inventory of hardware and software, etc. have become simple and manageable.

We have recently evaluated Microsoft Windows NT Workstation 4.0 (Arabic-enabled) for the desktop operating system and are considering this as a replacement for Windows 95 to provide greater reliability and centralised management of desktops.

## IT Security

Our growing dependence on IT has made security and business continuity planning important issues. To manage our IT better and to set an example for our auditees, we formalised an IT Security Policy in July 1998. We also set out detailed security procedures and drew up a detailed Business Continuity Plan that enables us to ensure continued availability of IT services in the event of disasters.

## Future Directions

To ensure that all key decisions within SGSA properly take account of the IT-related **aspects our road map is broadly defined**. Needless to say, this will be continually reviewed to take advantage of new technologies and user innovations.

## Framework for Applications

Our focus will be on increased web-based support for

- managers - including personnel, budgets and audit management
- mobile audit teams - for on-line access to knowledge databases, audit guidelines, laws and regulations issued through Royal Decrees and Ministerial Notifications, internal circulars, audit schedules, government-wide financial data, etc.

*The long term objective is to provide an "electronic briefcase/toolkit" for auditors and a relatively paper-free decision support system for managers.*

## Technological Architecture

Our aim is to provide the non-technical user with one or at most two interfaces; a web-browser and a personal desktop manager like Microsoft Outlook. Web-based querying of databases will be achieved through "ODBC connectivity" as at present; however, we expect to migrate from Microsoft Access databases to Microsoft SQL Server 7.0 which is expected to provide us proper support for Arabic data and greater security as well.

We foresee centralised management of IT assets using Systems Management Server and progressive use of workflow applications with interchange of data between Exchange (messaging database) and SQL Server or Access. SNA Server may be deployed to bring IBM Mainframe data to the user's desktop.

## Conclusion

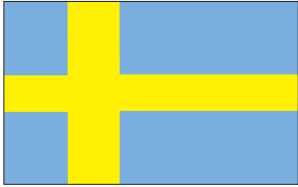
We have come a long way in 2 years of sustained efforts. But **we realise that we still have a long way ahead**. Sustaining management commitment and increasing user acceptance remain our biggest challenges.



## *IT in SGSA - Important Milestones*

Period	Networked PCs (Cumulative)	Strategic Framework and Skill Upgradation	Infrastructure	IS Audit
1989			Wang Computer with 9 terminals; mainly word-processing	
1992	8		Novell Netware-based Token-ring LAN. Windows 3.1 clients Terminals to Ministry of Finance's IBM mainframe	
October 1996	8	New IT Strategy		IS Audit Strategic Plan
November 1996	8	Capital Budget for IT Infrastructure	Standardisation of Operating System (Windows95), Desktop Software (MS-Office Professional)	
December 1996	8	In-house IT training started	IT Training Lab set up	
April 1997	8		Pilot project for migration to Microsoft BackOffice	Membership of ISACA; ACL chosen as audit interrogation software
July - September 1997	18	Training for e-mail, browsing, etc. started for all LAN users	New Compaq Proliant 2500 server; Structured Cabling in main office buildings; Fast Ethernet LAN - 100 Mbps Hubs with fibre-backbone between buildings; full-scale migration to MS BackOffice 2.5; Wang phased out; Novell Netware phased out.	Core modules of IT Audit Training commenced
October 1997	36			
December 1997	42	Internet Web site registered (www.sgsa.com)		
February 1998	44		Separate server for remote dial up access and Internet proxy services	Choice of COBIT as IS audit methodology; Decision to sponsor candidates for CISA
April 1998	44	Advanced training in desktop applications		IS Audits commenced
May 1998	44		Third server set up as Backup Domain Controller for LAN	Purchase of "COBIT Advisor"
July 1998	46	IT Security Policy Business Continuity Plan		
September 1998	46	Training in workflow application development	Additional Hub to provide more network connections	

# The second IT Audit Symposium



*Peter Nilsson reports on the second IT Audit symposium held in Stockholm in May 1998.*

## Introduction

In March 1995 a working seminar on the theme of Performance Auditing of the Use of EDP was arranged by the Swedish National Audit Office (RRV) as part of its work as the convener of Working Group II (Performance Auditing of the Use of EDP systems) in the INTOSAI Standing Committee on EDP Audit. The seminar proved to be a success and the Committee decided that a second seminar should be arranged in Stockholm in 1998. The proceedings from the first seminar can be obtained from the RRV.

For the second seminar the arrangements were somewhat different. The objective was, as before, to bring together auditors from different SAIs who work in the field of performance auditing of the use of IT/EDP and to discuss topical issues. These issues could be new forms of IT, new types of information systems and new methods for auditing. The main objective was to exchange experience on practical issues.

The seminar was organised around six themes that were presented by:

- SAI Canada: Systems under development audit
- SAI India: Strategic Planning for IT Performance Audit.
- SAI Netherlands: Information Security.
- SAI South Africa: Specialised Information Systems Audit Tools
- SAI Sweden: EDI and auditing
- SAI United Kingdom: IT Development and Operations Contracted out to the Private Sector.

Several country papers were produced. These, together with the lead papers and a summary of the discussions, were published as "Performance Auditing of the use of EDP, 2" by the RRV. The proceedings were distributed to all INTOSAI members.

This was the second INTOSAI seminar to focus on the burning question of performance audit of the use of EDP. The seminar brought together thirty participants from twenty SAIs. The NATO Board of Audit was once again invited as an observer. The seminar was a success. There were many intriguing inputs and useful discussions. A follow-up committee meeting decided that a third seminar should be planned for 2001 in Slovenia.

## Six themes

Since the last seminar three years ago there have been vast developments in the area of new technology and IT applications. Many new audit

issues have arisen and most of the old ones remain. There is a great deal to discuss and even more to do when back in the office again.

## IT-security

IT security is one of the basic areas in which auditors will always have an interest. One problem is that the point of departure of the audit, which may be best practice, is questioned in many respects by the auditees. Today there is an interesting trend towards standardisation and regulation. The British standard BS7799 and ISACAS CobIT are two standards which auditors and others refer to. BS7799 is also under consideration as a national standard outside Britain.

Standards and regulations provide support for the audit. It is also easier to convince management of the need for a certain level of security. However, regulation or compliance audit against a standard is not without problems. An agency's problem in meeting requirements can well be due to shortcomings or other problems with the standard itself.

It was pointed out that it is important to distinguish between risk analysis and vulnerability analysis. Risk analysis makes an assessment of those systems that, if problems occur, can have considerable, undesirable consequences. Vulnerability analysis is an analysis of the "risky" systems identified in the risk analysis to examine if weaknesses exist.

It has been believed for a long time that most threats originate from within the organisation. The RRV has performed a study on computer crime that indicates that external threats are becoming more common. Figures and the way in which they have been calculated can always be discussed but there is a clear trend. Other SAIs have also seen this trend. The reason is naturally the increasing use of data communication in which the Internet is an important factor.

Another trend is that the auditees' work on IT security is being done to an increasing extent by consultants hired for the purpose. One problem is then how to audit these projects. A new risk could be that a private company engaged in IT security work on a contract basis could have unauthorised access to all competitive information. The auditor's starting point should always be the requirements of the organisation. Management's standards shall apply regardless of who has done the work.

## ***IT development and operations contracted out to the private sector***

It is becoming increasingly common that agencies (and companies) farm out parts of their IT operations to IT companies (outsourcing or contracting out). If done in a correct way this procedure can provide many advantages. The costs are visible and it is also necessary to define processes. This results in a more structured and analytical IT operation. However, there are risks. Being dependent on one supplier means that the agency's hands are tied. It is easy for an agency to lose control of its IT operations.

One risk is that the supplier or the agency wishes to change its strategy when the contract expires. This could cause considerable costs and it could also put the other party in an extremely awkward situation.

It can be more difficult to achieve operational objectives since one relies more or less fully on the contractor when changes are considered necessary in the system. It can also become more difficult to discuss strategic business development. Here there can also be a political risk: the agency may need to ask the company before changes can be made, for example in the tax system. Furthermore it can be difficult or even impossible to check that sensitive information is not accessible to unauthorised persons. There are examples in which, on account of these arguments, decisions have been reached not to farm out entire, or parts of, IT operations.

One factor to observe is that the company which is given the first contract in a country is given a strong market position and can become too dominant. Therefore it can be a good thing from the public sector perspective not to give too many contracts to one company.

An important lesson is that management cannot abdicate its responsibility for IT operations even when they are outsourced. The agency must still possess certain skills. The case studies show that there are bigger risks for smaller agencies since they lack the necessary expertise in-house to formulate and exercise controls over outsourcing.

It is instructive and illustrative to compare the building of IT systems with other types of constructions, for example a bridge, a boat or an aeroplane. This makes it much more obvious to decision-makers that controls of IT projects must be exercised in the same way, as well as expectations in respect of deliveries. It is also a good comparison as it visualises that what is being ordered is functionality, not a specific design. The question of design can be left to the different contenders for the contract and may lead to different solutions to the same requirements. But, on the risk side, it might be more complex to evaluate the different solutions. Best value when deciding whether to develop in-house or outsource should be the key concept for local government.

## ***Specialised Information Systems Auditing Tools***

Today developments are taking place in the field of general IT-supported tools which can be used in audit work. At the same time there is a trend in the value for money analyses of certain SAIs towards more extensive quantitative results based on data from the agency audited and, for example, cross system analyses which combine data from several systems as well as simulations of the consequences of different alternatives. However, developments in this field are still in their infancy, but more examples of applications are emerging.

CAATs (Computer Aided Audit Tools), which are traditionally a tool for the financial audit, can have many new application areas. For example absence in an audited organisation can be more easily analysed with the aid of this type of instrument. Another area of application which has been mentioned is Forensic Audit.

However, computerised aids are not entirely without problems. Expert systems contain different rules or information. The issue is then what information or values the system represents and if they are relevant for the situation in question. It can also be difficult for the auditors to have sufficient skills and knowledge in respect of an agency's IT systems.

## ***Strategic planning for IT performance audit***

Many agencies still regard IT as a technical problem and not as a management issue. A lack of expertise leads to shortcomings in the agencies' administration of IT issues. Topical areas are IT procurement and IT strategy and change management. Today IT procurement is a major issue in North America and the agencies need more expertise in the area.

Several SAIs are now extending and developing IT audit. IT audits are being performed in more areas and several SAIs have indicated that more is needed.

To meet this development the audit must have the right expertise. The question is what form of expertise and how should it be developed and maintained. Continuous training of IT auditors after they have undergone basic training is a challenge and the training budget is often considered inadequate.

Furthermore discussions are taking place on whether an IT audit strategy is needed and, if it is, how it should be organised. The audit must know what it wants and must be able to motivate its projects. An important issue is how the regular audit can best be supported.

Professional reinforcement in the form of consultants is common but does not exist everywhere. One problem with consultants is that they can seek other jobs at the agency they are auditing. One also needs to be able to control the quality of their work.

SAI Japan does not, for example, hire external consultants but has 15-20 IT auditors of its own. Under the internal rotation rules they are transferred after 3-4 years to other units. SAI Oman sends its auditors to private firms for general audit training. For IT Audit the training was adapted to their requirements from the INTOSAI IT Audit Training Courseware. About 24 young graduates were given this training in 2 batches. Some of the trainees were then deployed on IT audits under expert supervision. Now, some of them are trying out IT audits on their own. The NAO in England has 15-20 IT auditors based in line audit units supported by a specialist team of 3 at the centre. There is an active programme of training and development. Other expertise required is bought in on contract which also contributes new expertise and new insights. In the Netherlands, regional sections of the professional organisation for IT auditors NOREA (the Netherlands' Order for EDP auditors) organises sessions for permanent professional education after office hours. Germany has a two-week training programme each year for its IT auditors, Canada accepts rotation of audit staff to do IT audits for a minimum period of two years. One important aspect is that this type of rotation requires collaboration between managers and the support of top management.

Every IT audit must be regarded as a learning situation. Timing is important. Training which cannot be used directly is often of no use. It is also difficult to train auditors in advance due to differences in systems, and change is taking place all the time. "Just in time" training appears to be a suitable model: take the opportunity when the need arises in a project. If a certain product becomes predominant among the auditees, specialist training can be recommended.

There is a need for training material, for example on CD, and reference works. Training material which the committee has produced has been received positively and has been used successfully in several connections. Courses can be held from four to eight weeks depending on the level of ambition. One particular problem is the need to translate material into the language in question.

Another problem is keeping pace with development. Different forums and contact networks are needed for the further development of IT audit.

In brief it can be said that IT audits need legitimacy in the form of steering committees and well-motivated management. Strategies, plans and budgets as well as audit programmes are also needed. Approaches in respect of human resource

management and development of IT staff, the use of consultants, in-house training, exchange programmes etc. must be developed.

## **EDI and auditing**

It is important to point out that this is an issue of paperless systems of which EDI is one example. Questions that are being discussed under the heading of EDI also arise in many other connections.

Many countries have started EDI programmes, primarily electronic trade. However developments are slow in the public sector. If electronic trade is to be meaningful, a large volume of transactions is required. Electronic trade is therefore not necessarily an important application; development potential in the public sector is to be found elsewhere. The issue is thus what types of information exchange can be improved with the aid of EDI.

In most countries there is a need to go through the legislation which is affected by electronic trade. Many countries have discovered that there are difficulties in exploiting the potential of EDI to the full under existing legislation.

Other issues needing solutions are, for example, how standards between the private and public sector shall be handled, and how agencies shall manage, organise and secure development projects for EDI. An important issue that is easily forgotten is, for example, that receipts for EDI traffic are necessary.

## **Systems under development audit**

Today operations are changing rapidly. Projects which extend over several years have the consequence that a system is probably not needed or is not adapted to operations when finalised. Experts have estimated that some 50% of the agencies' budgets are spent on correcting errors and mistakes made in earlier and ongoing work. It is a question of a large sum of money that could be used more effectively.

Methods are now being produced to administer projects and consultants. "Earned value" is one method that was mentioned. There are other methodologies.

One of the most common shortcomings in development projects is that project leaders and consultants lack experience of major projects. They are themselves undergoing a learning process. There are also shortcomings in the knowledge of users and management, specifications are often of poor quality, and there are deficiencies in the estimates of costs and benefits. Furthermore sub-deliveries are often checked but not the process which leads to the final result. There are thus shortcomings in quality assurance.

## **Skansen**

Society is becoming more complex. Agencies are growing more dependent on each other and are also becoming linked to private companies. One major precondition for this situation is, of course, IT. We can observe this in the development of data communication and the Internet, paperless applications such as EDI, expert systems, outsourcing etc. The reason for this development is of course an aspiration to create a more efficient public administration and society. Developments can be very swift.

This became apparent to the delegates at the outdoor museum of Skansen, situated on a beautiful island in central Stockholm. Houses and other buildings from historical Sweden are exhibited there, illustrating among other things how early institutions such as banks functioned. In less than one hundred years Sweden has been transformed from a poor rural country into one of the richest countries in the world. The efficient use of new technology is one important factor in this development. The efficient audit of the new technology is a precondition for trust in new technology and an important tool to deal with the new risks that emerge in the development of society.



# A Report on the Status of Work and the Future Work Plan of the INTOSAI standing Committee on EDP Audit by SAI India

The INTOSAI Standing Committee on EDP Audit was constituted in June 1989 and has now existed for 9 years. The central objective of the Committee is to support the SAIs in developing their knowledge and skills in the use and audit of Information Technology. To meet this goal the Committee is mandated to provide information and facilities to provide for the exchange of experiences, and to encourage bilateral and regional co-operation.

A major milestone for the Committee was the adoption of a work plan for 1995-98 during the XV Congress of INTOSAI in September-October 1995 in Cairo. This has formed the basis of the committee's activities in the past 3 years. The steady increase in the membership of the committee is a measure of its growing relevance. The membership, originally 12, now stands at 18.

## Areas of Operation

The Committee has three main areas of operation, each of which was originally assigned to a separate Working Group within the Committee:

- Audit of EDP-based accounting systems and EDP support in auditing
- Performance auditing of use of EDP systems
- Use of EDP in SAI's own administration

The original convenors of these working groups were Canada, Sweden and UK. The working groups were reconstituted into the following two at the April Meeting of the Committee in 1997:

- **Working Group I:** Performance Auditing of the use of EDP Systems with Sweden as convenor.
- **Working Group II:** Audit of EDP-based accounting systems, EDP audit training and EDP support in auditing with UK as Convenor.

The committee has met twice at London and Stockholm since the XV INCOSAI where the status of various projects were reviewed, priorities were established and a plan of action for each project determined.

## Status of Work

In the area "**Information Interchange**" several activities have taken place.

- The **INTOSAI EDP directory** has been updated and is available both in a printed form and as a CD.
- Eight issues of the journal **IntoIT** have been published and circulated to all members of INTOSAI and have been well received.
- The **Second Seminar on IT Performance Audit** was held in May this year and covered 6 theme areas. Participants from 20 SAIs attended this seminar. The seminar output was circulated in November 1998.

■ A new product - an **Electronic Compilation of SAI Mandates** has been produced on a CD for use as a reference tool. This incorporates the mandates of over 130 member SAIs.

■ A website for the committee has been set up. An article in this issue gives more detail.

In the area of "**Knowledge and Skill Development**"

■ IT Audit Courseware has been developed and circulated to the Regional Working Groups of INTOSAI. Course Overviews were circulated to all SAIs in February 1997.

*Eight issues of the journal IntoIT have been published and circulated to all members of INTOSAI and have been well received.*

In the area of "**Knowledge Development and Transfer**"

- A draft paper was prepared on **EDI and Paperless Audit** by SAI Sweden and articles have appeared in the third issue of intoIT.
- A short paper on **Auditing in a Client Server Environment** has been prepared and circulated for suggestions and comments. This will be followed up with an article in intoIT.
- A research paper on **Performance Audit Methods for Analysing Effectiveness of Use of New Technologies** has been produced by SAI Sweden and has been published as the special 7th issue of intoIT.

- Though not part of the work plan, the **Year 2000 Problem**, on account of its topicality and its potential impact, was taken up as a project. Articles on the subject featured in the 8th issue of intoIT. The topic was also discussed during the 2nd Performance Auditing Seminar.

## **Work Plan of the Committee till the XVII INCOSAI**

We will continue to group all planned activities and projects under the three broad areas namely

- **Information Interchange**
- **Knowledge and Skill Development and**
- **Knowledge Development and Transfer.**

In the field of **Information Interchange**

- The committee plans to continue publication of two issues of **intoIT** annually.
- Beginning from the 8th issue intoIT will also feature on the Committee's Webpage.
- **The EDP Directory** has been appreciated for its contribution in furthering bilateral and regional co-operation by providing an information base for SAIs. The 3rd update of the directory should be available in 2001.
- As part of the established practice of dealing with complex issues through periodic seminars, it is planned to organise another **Seminar on Performance Audit** in 2001 in Slovenia.
- The Committee **Webpage** will be further developed after taking into account the views of members.
- The current **Compilation of SAI Mandates** will be updated to include mandates for the remaining SAIs and also to reflect any changes in the mandates. Members are requested to

apprise us of their mandates and any changes to enable us to periodically update this compilation.

On the activities relating to **Knowledge and Skill Development**

- Feedback will be obtained from different regions on their experiences in using the **IT Audit Courseware** and based on this, the courseware can be updated.
- Building on the basic IT Audit Courseware, the committee will prepare **Advanced Training Modules** in selected and specialised areas.
- The **Reference List of Materials on IT Performance Auditing** will be kept updated, throughout the next 3 years, through articles in intoIT and the Committee Webpage.

The committee plans to continue with its activities in pursuance of its declared objective of supporting and promoting development and transfer of knowledge relating to IT audit.

- The work on the project EDI and the Paperless Audit will continue and EDI and its audit implications will be the focus of a future issue of intoIT.
- As regards the study Auditing in a Client Server Environment, a revised paper will be printed as an article in intoIT.
- The Year 2000 problem will be kept in focus through articles and news items in intoIT and on the Internet Webpage of the Committee.
- The committee also plans to initiate three new studies in the areas of **Audit implications of IT infrastructure Management, Detection and Prevention of IT related fraud and Computer related Communications Security.**



# Financial Audit Support System

*Over the last 5 years the National Audit Office has developed a Financial Audit Support System designed to meet auditor's needs to create audit documentation and maintain information about our clients and audits.*



*Tony Anderson joined the NAO in 1979, and after working on a wide range of financial and performance audits joined the NAO IT section to develop and implement IT projects for audit purposes.*

Our goals when developing FASS were mainly to seek improvements in the efficiency of producing audit documentation and providing auditors with quick access to reference information. A sub-goal was to improve and standardise audit documentation as far as possible. Other goals have arisen along the way including flexibility, an issue that auditors and managers place great emphasis on.

Three years ago we revised our Audit Manual and the NAO adopted Windows 95 and Microsoft applications for general use. FASS was rebuilt to incorporate and take advantage of these changes, introducing simpler solutions than had previously been possible.

## Overall Design

The core building blocks of FASS are the Microsoft applications Word, Excel and Access.

To reduce problems of installation and maintenance all entities and code are contained in Templates. When these are revised they are placed on a server and automatically downloaded to machines when the user next logs on to the network. No special configuration of machines is required, considerable effort having been made to ensure that the system works on the standard NAO set up.

FASS integrates with other NAO systems rather than replicating their functions. The main links are

to our Resource Management System and Merlin an Intranet that provides access to manuals, reference material and much more. File control is provided by user permissions from the servers which run Microsoft NT.

To minimise the amount of training and additional knowledge auditors need we have made FASS work in the same way as the Microsoft applications it uses. The tool to create and roll forward documentation is in the form of a Wizard accessed from a word document and special functionality is provided by FASS toolbars in documents and spreadsheets.

## Creating and Rolling Forward Documentation

FASS enables the creation of financial audit document sets tailored to the requirements of the audit. The degree of tailoring is not excessive as auditors and managers like to retain considerable freedom in how they go about an audit, making fine tuning superfluous.

Documentation can be created and accessed on servers, standalone PCs or laptop computers. Documents are stored in folders (directories) and individual documents can be opened using Explorer or file open dialog boxes within the applications.

Rolling forward document sets to the next year is a simple process but can have significant rewards. Whilst text in documents is not changed by the process, headers are amended to the new years information but more importantly client financial information is transferred to prior year.

After a roll forward entering current year budgets enables a full set of planning documentation to be produced very quickly. Of course auditors will need to do more than just this. The roll forward process has enabled auditors to gain more time to think about their clients and how to go about the audit than would otherwise have been possible. Knowing that they probably have most of the basic information in last year's documentation including any impending changes to clients business or systems, gathered during the course of their previous audit, they can spend more effort on refining and optimising the current audit.

The process of creating or rolling forward documentation sets uses a dialog box built in a word template. The example in Fig. 1 is set for roll forward and both the source and destination of the documentation set have been selected. Header details can be changed as required for the next year's documentation.

Figure1 FASS Creation and Roll Forward

Header Details	
Client_Reference	A123
Client_Name	Test Data
Job_Code	C987
Current_Year	2000
Prior_Year	1999
Client_Type	Accruals
Client_Unit	C
Client_Area	3

## The Documentation Set

The documentation set is divided into a series of folders as shown in the 'Open' dialog box in **Figure 2**.

In this example only one account area has been created, 'C1 Account Area' but auditors can create as many as they require. They can also add other folders, standard documents or documents they have created to meet their requirements.

Each folder is populated with an appropriate set of documentation including an index document (**Figure 3**) for the folder. The index is necessary, as we have yet to moved to a fully computerised system; documentation is still mainly reviewed on paper. The index does provide some other benefits, as the entries, which are generated automatically, are hypertext links to the other documents in the folder providing a means of quick access. Each entry also shows the date and time of the last update to each document.

A typical document is shown in **Figure 4** (**overleaf**). When first created documents contain a list of headings with references to the appropriate authorities and standards. Documents also have a common toolbar that provides quick access to reference and example (EG) documentation contained on our intranet Merlin and to other information about the client held in Section Files.

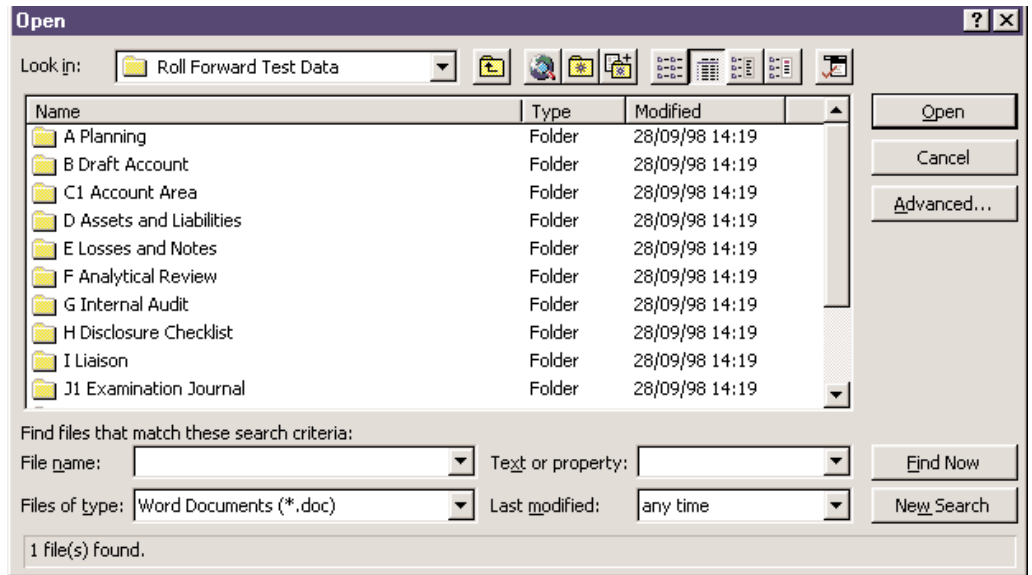


Figure 2 FASS Folders

Documents can also contain links to other documents and to an Audit Information Database unique to each audit. A number of tables containing AID information are built into the standard documents and others can be added as required. These tables can be refreshed to capture the latest information held in AID. Other functions available from the toolbar enable tables to be flipped to improve presentation and a button to send selected text to another document such as points for management letters. The latter provides most of the functionality of a far more complex cross-referencing system but is quick and simple to use.

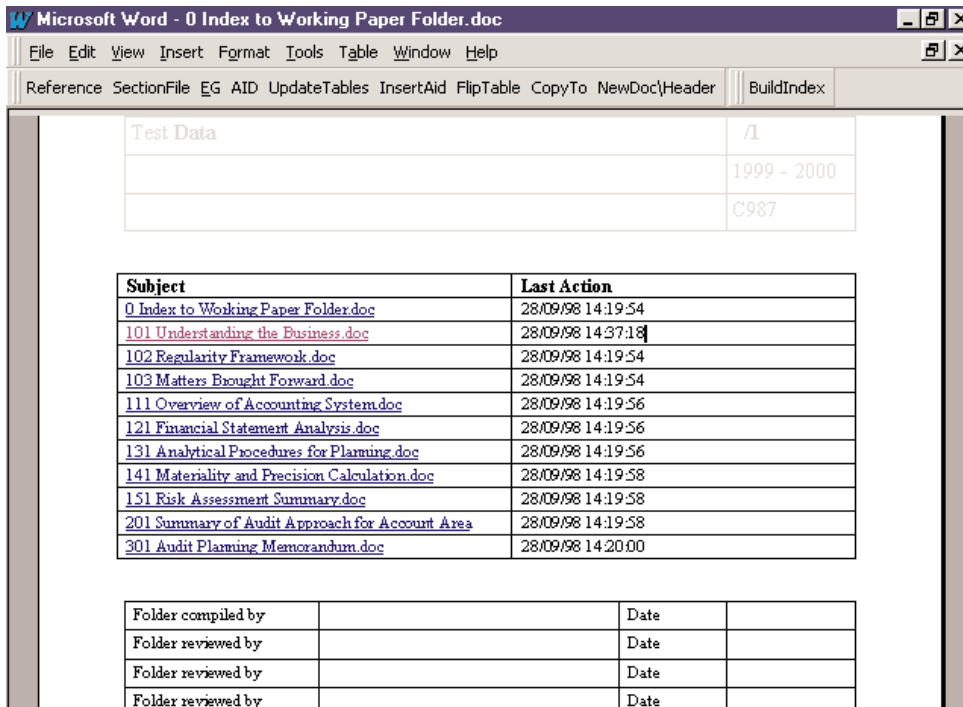
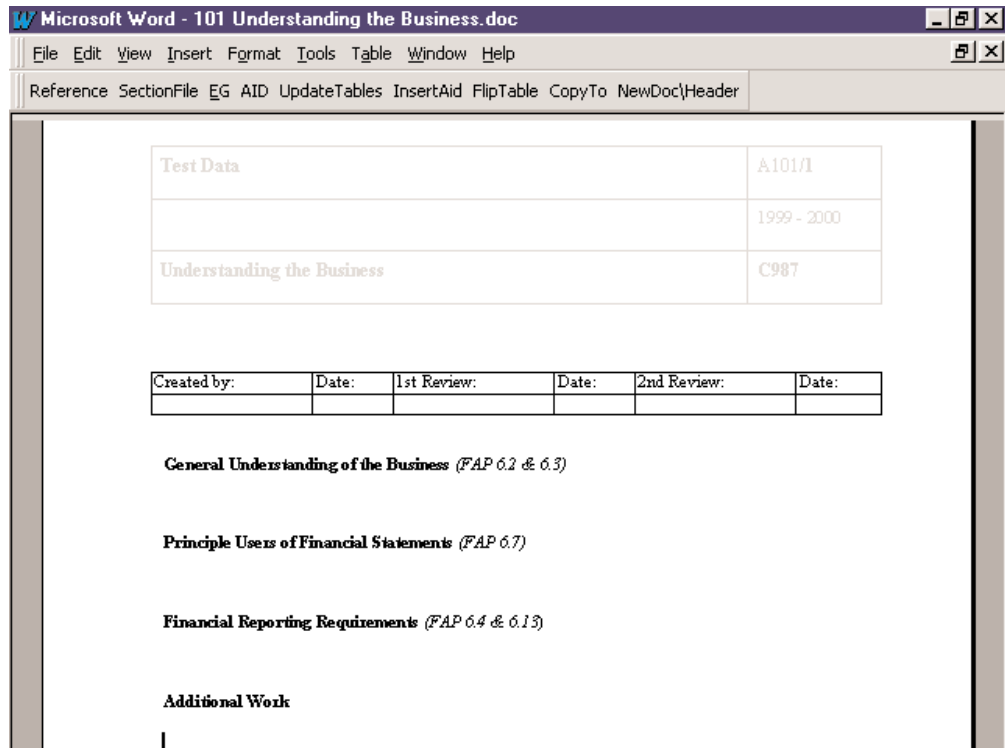


Figure 3 Index Document

Figure 4 A typical document



## Audit Information Database

AID is built in Microsoft Access. It provides a means of storing collections of information about clients and audits with a selection of functions and tools to perform many audit requirements quickly and accurately. Use of the database, which can add significantly to the amount of work involved, is not compulsory.

Client financial information in the form of budgets and outturns can be imported from a variety of sources. The file interrogation package Idea, which is a core package used by our auditors, is the general source of such data but client information in a wide variety of formats can also be handled.

Clients Charts of Accounts or Ledger structures can be used but most auditors use simplified versions to reduce complexity. Account Areas can be defined as required down to any level contained in the financial information. **Figure 5 opposite** shows the Account Area Definition screen.

Clicking the tabs displays the various accounting and audit definitions each with many to one links to the succeeding level. The buttons provide for importing data, access to other screens and return to the Word document currently being worked on.

At first appearance the rather detailed structure which includes Sub Account Areas seems excessive but for simpler accounts it is possible to remove layers by using the replicate button. Motivations for the structure stem from a number of sources, the main ones were to enable auditors to view the impact of errors at any level especially

Financial Statements (Account Balances) and to provide flexibility for auditors to refine their audits.

The Audit screen provides for calculating materiality, sample size and evaluating errors (see **Figure 6 opposite**). Other screens (not shown) are the Financial screen which allows for importing or inputting client financial information at the level of detail required and a General screen for maintaining information about legislation, risks and other less specific collections of information.

Word documents and Excel spreadsheets can contain links to AID. The links normally display tables that can be refreshed when necessary to show the latest information. Any information in AID can be incorporated into documents in this way. We have created a number of standard links that provide basic information for most parts of the audit. The information selected is often based on document properties so only information relevant to a particular document will appear. For example documents in an account area folder will only show AID information specific to that account area.

## Other elements of FASS

A number of spread sheet templates are available to handle a variety of matters including a set of the different account formats used by our clients and one to provide links to our Resource Management System. These and various Word documents have been created by others not necessarily computer experts to provide useful functionality whilst fitting in with the FASS system. This was possible because of the simple template structure of FASS which is now not so much a ridged system but more

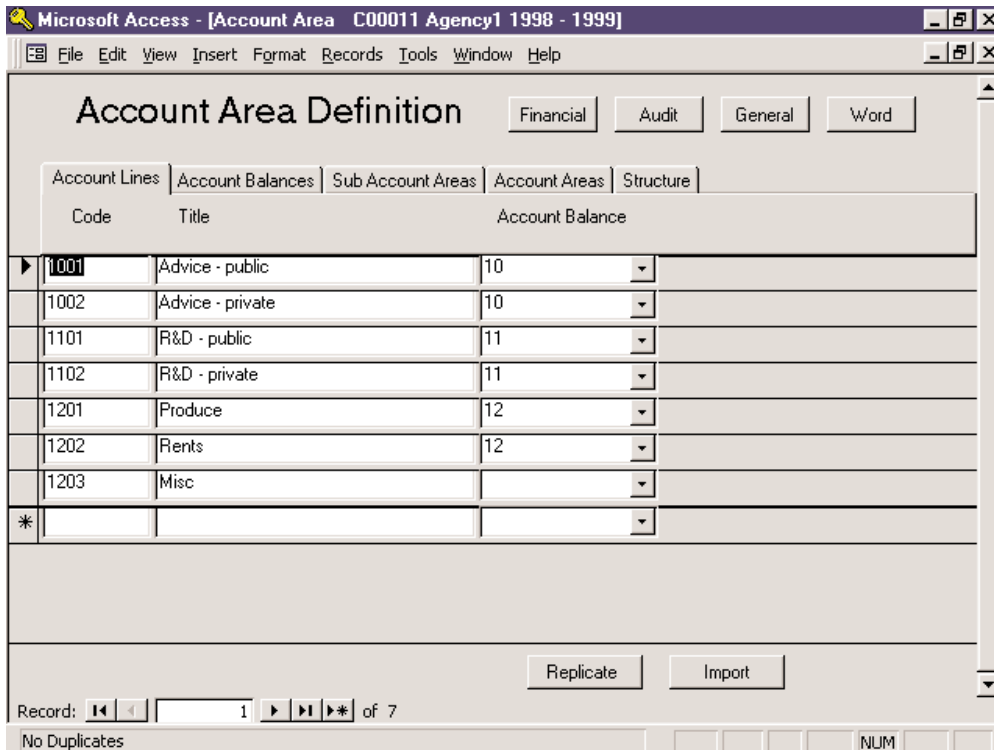
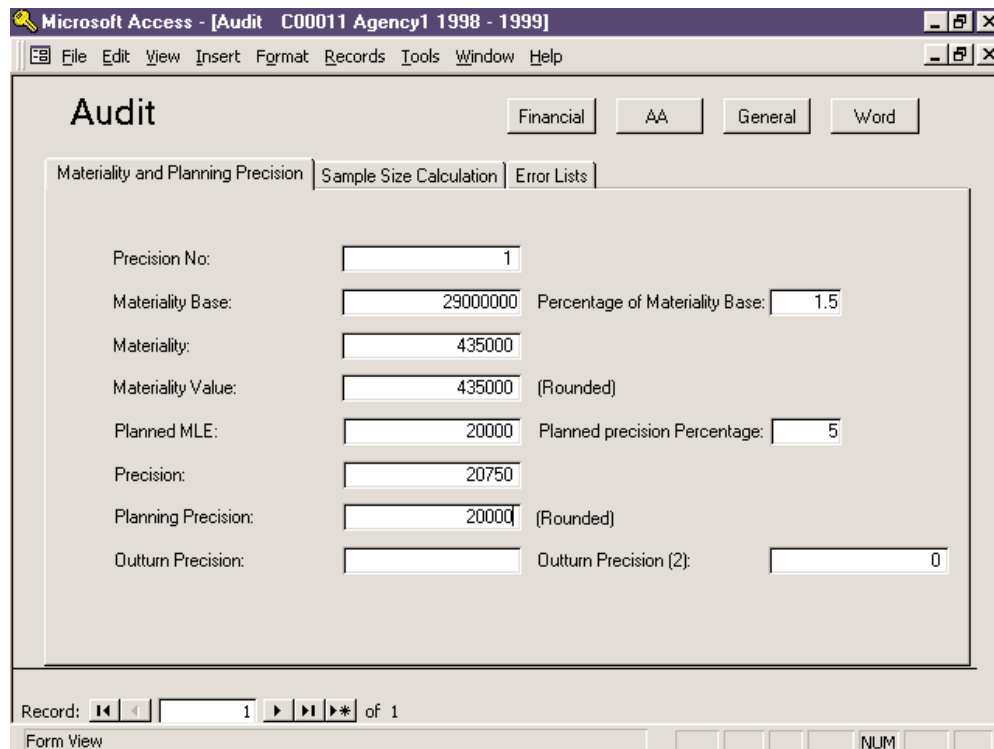


Figure 5: Account Area Definition screen

Figure 6: Audit screen



a collection of basic building blocks and tools the auditor can assemble, both adding to and subtracting from, to best meet their needs.

### **Mobile Computing**

We have now been given the challenge of developing a Mobile Computing strategy for the NAO. FASS or its successor will hopefully be one element in this. FASS currently takes advantage of Microsoft Briefcase to enable auditors to take documentation on audits on notebook computers and synchronise their working papers and AID information when they return. But the demand in this area is very high and use of the Internet and Government Secure Internet will no doubt figure high on the list of audit priorities.

## **News Item**

The INTOSAI Standing Committee on EDP Audit played an important role during the XVI INCOSAI, held at Monte video, Uruguay from 7th - 14th November 1998. The Deputy CAG of India Mr P K Lahiri, presented a report on the Committee's activities, during the 44th Meeting of the INTOSAI Governing Board on 7th November 1998. This report highlighted the Committee's work since the last GB Meeting in 1997 and also its work plan for the next 3 years. The Congress opened on 8th of November 1998 and the Chairman of the Committee, Mr V.K. Shunglu - CAG of India, presented his report to the First Plenary. This report detailed the committee's work in the past three years and presented its workplan for the next three years. The Committee also presented a paper, which formed the basis for discussions during the sessions on Sub Theme IIE, which related to the EDP Audit Committee. Mr Doussari from SAI KUWAIT moderated the discussion. Mr Griffith, Head of SAI of Barbados, acted as rapporteur. The Chairman of the Committee set the tone for the discussions with his opening remarks. During the discussions the CD containing three Committee products was demonstrated. On the 13th of November 1998 the Chairman of the Committee presented the results of the discussions as a report to the Second Plenary.

# The INTOSAI EDP Committee on the Web

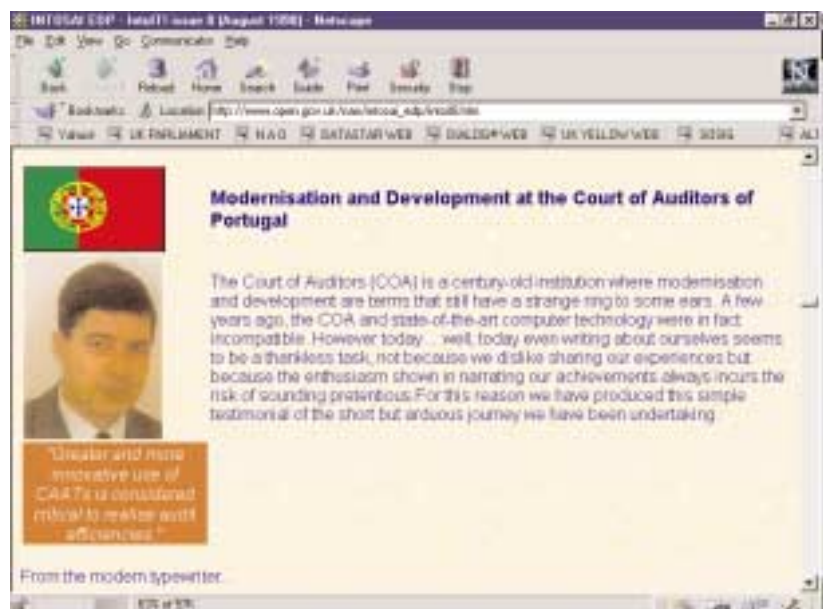
Patrick Callaghan, Information Centre, National Audit Office, UK

Information on the INTOSAI Standing Committee on Electronic Data Processing Audit is now available on the Internet. The website is being hosted by the UK National Audit Office (as is the INTOSAI Working Group on the Audit of Privatisations) and is intended to give a clear picture of the past, present and future work of the group in a format which is easy to use and which can be viewed by any browser.

The home page (reproduced above), which can be found at [http://www.open.gov.uk/nao/intosai\\_edp/home.htm](http://www.open.gov.uk/nao/intosai_edp/home.htm) shows the five main areas of coverage:

- background information includes detailed sections on the aims of the Committee, write ups of projects, knowledge development and transfer, and the Committee's terms of reference;
- reports from the Committee to the Governing Board of INTOSAI for the past five years, as well as several documents relating to INCOSAI in 1992 and 1995;
- IntoIT editions seven and eight (with this edition [number 9] and all subsequent editions being added in the week of publication);
- the IT strategy guide ("Guide to Developing IT Strategies in Supreme Audit Institutions"), with sixteen chapters from "Why have an IT strategy?" to "Tips for success"; and
- the EDP Committee directory, with contact details of representatives from the 18 member countries.

The EDP Committee website will not be standing still. Plans are already well in place to provide a link to the State Audit Institution of Oman, which will be hosting Arabic versions of the key documents, and a total redesign is envisaged for later in 1999 to ensure that the site is making the most of web technology developments while maintaining the basic principles of ease of use and accessibility.



## SAIs E-Mail Addresses and World Wide Web home pages

Country	Organisation	Email Address	WWW Home page
Australia	Australian National Audit Office	ag1@anao.gov.au	<a href="http://www.anao.gov.au">http://www.anao.gov.au</a>
Austria	INTOSAI General Secretariat,Rechnungshof	rh.into@magnet.at	<a href="http://www.intosai.magnet.at/intosai/">http://www.intosai.magnet.at/intosai/</a>
Brazil	Tribunal de Contas da União-TCU	sergiofa@tcu.gov.br	<a href="http://www.tcu.gov.br">http://www.tcu.gov.br</a>
Bangladesh	Office of the Comptroller and Auditor General	saibd@citechno.net	
Canada	Bureau du Vérificateur Général du Canada	desautld@oag-bvg.gc.ca	<a href="http://www.oag-bvg.gc.ca">http://www.oag-bvg.gc.ca</a>
China	National Audit Office	cnao@public.east.cn.net	
Croatia	State Audit Office	dur@zg.tel.hr	<a href="http://www.revizija.hr">http://www.revizija.hr</a>
Costa Rica	Contraloría General de la República	xcisnado@casapres.go.cr	
Denmark	Rigsrevisionen	rigsrevisionen@rigsrevisionen.dk	<a href="http://www.rigsrevisionen.dk">http://www.rigsrevisionen.dk</a>
El Salvador	Corte de Cuentas de la Republica	cdcr@es.com.sv	
Estonia	Eesti Vabariigi Riigikontroll	riigikontroll@sao.ee	<a href="http://www.sao.ee">http://www.sao.ee</a>
Germany	Bundesrechnungshof	brh_ffm@t-online.de	
India	Office of the Comptroller and Auditor General	cag@giasdl01.vsnl.net.in	<a href="http://www.cagindia.org">http://www.cagindia.org</a>
Japan	Kaikeikensain	asosai@ca.mbn.or.jp	<a href="http://www.jbaudit.admix.go.jp">http://www.jbaudit.admix.go.jp</a>
Jordan	Jordanian Audit Bureau	Audit_b@amra.nic.gov.jo	
Korea (Republic of)	Board of Audit and Inspection (BAI)	gsw290@blue.nowcom.co.kr	
Luxembourg	Chambre des Comptes	chaco@pt.lu	
Malaysia	Pejabat Ketua Audit Negara	jbaudit@po.jaring.my	
Malta	Audit Office	joseph.g.galea@magnet.mt	
Mauritius	Audit Office	auditdep@bow.intnet.mu	
Netherlands	Algemene Rekenkamer	BJZ@Rekenkamer.nl	<a href="http://www.Rekenkamer.nl">http://www.Rekenkamer.nl</a>
New Zealand	Office of the Controller and Auditor General	<a href="http://www.netlink.co.nz/oag/index.htm">http://www.netlink.co.nz/oag/index.htm</a>	
Nicaragua	Contraloría General de la Republica	continf@lbw.com.ni	
Norway	Riksrevisjonen	intersec@sn.no	
Oman	Office of the Secretariat General for Audit	sages@gto.net.om	
Pakistan	Office of the Auditor General of Pakistan	mohsin%auditgenpk@sdpnk.undp.org	
Paraguay	Contraloría General de la República	director@astcgr.una.py	
Peru	Contraloría General de la República	dcl00@condor.gob.pe	
Portugal	Tribunal de Contas	dg.tcontas@mail.telepac.pt	
Russian Federation	Accounts Chamber	sjul@gov.ru	
Singapore	Audit Office	audgen@cs.gov.sg	<a href="http://www.gov.sg/ago">http://www.gov.sg/ago</a>
Slovenia	Racunsko Sodišce	audgen@cs.gov.sg	<a href="http://www.gov.sg/ago">http://www.gov.sg/ago</a>
South Africa	Kantoor van die Ouditeur-Generaal / Office of the Auditor-General	yvonne@agsa.co.za	
Spain	Tribunal de Cuentas	TRIBCIENTAS@adv.es	
State of Qatar	State Audit Bureau	qsab@qatar.net.qa	
Sweden	Riksrevisionsverket	email@rrv.se	<a href="http://www.rrv.se">http://www.rrv.se</a>
Switzerland	Swiss federal Audit's	sekretariat@efk.admin.ch	
United Kingdom	National Audit Office	nao@gt.net.gov.uk	<a href="http://www.open.gov.uk/nao/home.htm">http://www.open.gov.uk/nao/home.htm</a>
United States of America	General Accounting Office	lehmanp@gao.gov	<a href="http://www.gao.gov">http://www.gao.gov</a>
Uruguay	Tribunal de Cuentas de la Republica	tribinc@adinet.com.uy	
Venezuela	Contraloría General	102213.3237@compuserve.com	
Yemen	Central Organisation for Control and Auditing	coca@y.net.ye	

Please inform the Editor of intoIT, at the address on the Contents Page, of any additions or amendments to this list. He will then publish the information in a future issue. Please also inform the INTOSAI Secretariat of any changes.

<b>Back Issues</b>	
A small number of copies of back issues are available from the Editor at the address on page 1. The main content of the previous issues are	
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Issue 2 - July 1995	Country Focus - Zimbabwe The INTOSAI EDP Directory Developing Information Technology Strategies (UK) Reviewing information security (Canada) IT Audit Curriculum for INTOSAI (UK) INTOSAI and the Internet News from around the World (Ecuador, France, Kuwait, Netherlands, Sierra Leone, Sweden, United Kingdom, Zimbabwe)
Issue 3 - January 1996	Country Focus - Japan The IT Audit Symposium in Stockholm (Sweden) EDI and the Paperless Audit (Canada) A Practical Approach to Auditing EDI Transactions (Norway) Effective Resource Management (UK) News from around the World (Brazil, India, Netherlands, Peru, United Kingdom)
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Issue 5 - Spring 1997	Country Focus - Columbia Performance Audit of IT Systems (India) The Argentine National Bank case Going on-line (UK) The use of EDP (Belgium) Audit IT outsourcing (UK) News from around the World (Columbia, Sweden, United Kingdom)
Issue 6 - Winter 1997-98	Country Focus - Barbados EDP Performance Audit (Sweden) Audit Computerisation in New Zealand Millennium Matters (UK) The Information Telecommunications System of the Accounts Chamber of the Russian Federation News from around the World (Estonia, Netherlands)
Issue 7 - May 1998 -	Performance Audit of the Use of IT
Issue 8 - Summer 1998	Country Focus - Brazil, Slovenia Auditing and Computerisation in New Zealand - Part 2 Modernisation and Development at the Court of Auditors of Portugal Millennium update (UK) Forensic Audit - India Tackling Public Sector Fraud (UK) News from around the World (India)

The tenth issue of INTO-IT will be published in Summer 1999.

The editor welcomes articles and news items for inclusion in the journal. Please send contributions to the address on page 1.