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Computerisation and Information Technology Audit in IA&AD

The process of computerisation started off initially in the Public Sector. The Railways were one of the first to introduce computers in their accounting work towards the end of 1960s. Audit was quick to respond by getting some of its officers trained with the assistance of IBM Ltd. The aim was to keep pace with the computerisation in government by evolving a suitable IT audit policy. In 1971, instructions were issued for conducting audit of the computer-based accounting systems in the Railways. In a major policy decision, the Ministry of Finance issued instructions in 1973 on C&AG's request (made in December 1972), that any proposal for computerisation in Central Government offices or undertakings should be processed only in consultation with IA&AD. This was a unique decision by which C&AG could have kept pace with IT developments in the Government. No such understanding with the State Government was, however, made. The HQrs did create a post of OSD (Computer) and posted an IA&AS officer[1] in 1971. This officer also prepared a comprehensive paper on strategy of Department for audit of computerisation but strangely, no action was taken on that. Eventually, the post was abolished in 1972 when the officer was posted as Joint Director (Tech.) in HQrs Office. The opportunity, therefore, was not utilised and audit mostly continued in conventional manner in the organisations, which had installed computers and there was no attempt to get audit done through the computers for a long time. This was due to the fact that audit was able to secure from the auditee organisations hard copies of files like print outs, etc. which allowed the Department to audit them in conventional manner.

FIRST COMPUTER POLICY

A Computer Policy for the Department was laid out in mid 1987 for the first time. Prior to this, Department's response to computerisation in the Government was mostly based on ad-hoc decisions taken in regard to the developments in particular department(s). Prior to finalisation of the computer policy, the C&AG, in July 1986, laid down broad guidelines which focussed on active involvement of field offices, co-ordination with states in accounting matters, regular training programmes at the operational and senior management level and composition of the audit parties. While approving the policy, C&AG also made it clear that the computerisation will not result in any reduction in staff strength and adjustment in the sanctioned posts will be made only against vacancies to be filled in by fresh recruitment. In general, so far as audit function was concerned, computerisation policy was unlikely to have any adverse impact on staff strength, since the objective was to enter new areas of audit i.e. audit in a computerised environment. One could, therefore, rightly say that a formal computerisation policy of the department was given shape in 1987. It was comprehensive. It had the in-built guidelines of the C&AG and a safety net for the employees.

The Policy identified possible areas of computer applications and the requisite audit expertise in relation thereto in three distinct areas of department's functioning namely, auditing, accounting and administrative. For each of these, a detailed programme was drawn including the kind of training for different levels of expertise needed in the department. The policy also covered guidelines for the purchase of hardware and staff implications.

REVIEW OF 1987 COMPUTER POLICY

Some of the important directions/ decisions arising from a review meeting taken by C&AG in March 1988 on the implementation of computer policy of the department were as follows:

(a) Computerisation of accounts: Reacting to the apprehension that computerising the civil accounts would trigger the take over of accounting functions by State Governments once they computerised their accounts at the treasury level, (and also NIC's plan for district level computerisation), the C&AG emphasised that a clear picture of computerised status and plans in each state should be obtained and an attempt made to computerise only the second level namely,

the consolidation of accounts which could then be integrated with computerisation in the treasury to avoid duplication of efforts and wastage of resources.

A few years later when the Department went for VLC after a detailed comprehensive discussion in the AG's Conference in 1996, conscious decision was taken to implement the VLC in the IA&AD irrespective of the status of treasury computerisation in various States. Therefore, while a formal coordination with the State Government Treasury Department was not established, care was taken to apprise the Finance Secretaries of a number of State Governments of this new system. This was done through extensive discussions with them in two high level seminars on the subject held at Chandigarh (presided by Dy. C&AG (Accounts) and at Shimla (presided by C&AG) in the year 2000. In these Seminars presentations on the VLC system were made before the State Finance Secretaries followed by extensive discussions on these systems. The inputs of the State Governments were, therefore, duly taken care of in the VLC system. However, very recently arising out of Business Process Reengineering study report, it is under consideration by the IA&AD to take up the study on user requirements and decide modalities for integration of VLC systems with computerised treasury systems through Bridge Software.

(b) On training, the C&AG reiterated, what is the most important yet most abused principle that the trained personnel must be properly deployed to make best use of their expertise and for this purpose a proper co-ordination between the personnel division and the computer group at HQrs was necessary.

In the initial stages of introduction of computers, the Department mainly aimed at assisting administration by ensuring that:

- the software was designed to secure correctness and completeness of accounts with capacity to display any errors etc.
- procedures were carefully laid down to rectify the errors
- there was adequate security of computer systems

Besides, the Department continued its routine functions of examining the economy, efficiency and effectiveness of the expenditure on the purchase and use of computers. Several Audit Reports of the period highlighted instances of uneconomic and inefficient purchases of computers, their poor utilisation and upkeep and maintenance and finally very little use of the computer facilities.

REVISED COMPUTER POLICY

In November 1989, two years after the first policy, a revised computer policy statement was formulated with three broad objectives:

- ❖ Qualitative improvement of A&E functions
- ❖ Efficient planning and management of audit
- ❖ Audit of computerised systems

The Policy defined the training needs with reference to objectives in order to develop appropriate training plans. It also talked of specifying viable monitoring and review arrangements for implementing the plans.

STAFF ASSOCIATION APPREHENSION

Even though, an assurance was incorporated in the computer policy that there would be no retrenchment of the staff or any adverse impact on the promotion prospects of the existing staff, staff associations across the country in all field offices had grave apprehensions about attempts for computerisation, on account of their fear that this would lead to either curtailment or freezing of staff strength. The All India Audit & Accounts Association to whom the computer policy paper of 1989 was sent, in response, requested the Department (January 1990) to abandon the policy for fear of staff curtailment. They did not wish to be a party to a scheme without fully understanding its effects on staff. The Department, therefore, gave to the staff side of the Departmental Council (JCM) a copy of 'An Approach Paper on Computerisation in IA&AD' which had the approval of the C&AG. There was a visible impact of this because the Associations had realised that computerisation was in no way, detrimental to their interests as subsequent developments showed, it resulted in creation of EDP posts in many offices.

EDP STEERING COMMITTEE

1989 also marked another very important development and this was the setting up of an EDP Steering Committee in Headquarters (October 1989) consisting of eight senior officers from Headquarters and field offices representing different streams within the Department to guide EDP related activities effectively. Subsequently, EDP Committees were set up in many field offices too. The functions of the committee included procurement of hardware and software,

organise EDP training, ensure post training utilisation of trained personnel, monitor the computerised accounting and audit system, and acquaint itself of the progress made by SAIs of developed countries in computerised accounting and auditing. It was also to monitor the progress of EDP in the department. The EDP Committees went about their job in a systematic manner and identified computer applications needed in the A&E and Audit Offices, and standardisation of software packages. With regard to software, all offices were advised to use only standardised software for developing applications. During this period several State Accountants General developed software applications for various functions like compilation of monthly civil accounts, Finance and Appropriation Accounts, pension authorisation as well as for tracing of unposted items to correct accounts etc. GPF accounting softwares were also developed.

Meanwhile, the Steering Committee reviewed in 1991–92, the implementation of the Govt. of India order of 1973 which envisaged that all Central Govt. departments should refer proposals for computerisation for clearance to C&AG in two stages (i) after system design but before programming, and (ii) after testing but before implementation. The Committee decided that Departments' capability to clear such proposals from both the Central Government and the State Governments should be built up within two years. In October/November 2003, ADAI addressed Finance Secretary and Expenditure Secretary Government of India, Secretary Department of Information Technology and the Chief Secretaries of various States/UTs regarding involvement of Audit in various phases of system development in three stages namely: (i) after the work of the system design is completed but before the computer programmes are written up; (ii) after the computer programmes are written up and tested but before the new system is introduced; and (iii) after the system is introduced at pilot stage but before it is replicated. C&AG issued several guidelines to help the field offices in carrying out the above responsibility. Headquarters circulated IT Audit Guidelines issued by ASOSAI. C&AG also prepared an Audit Check List Brochure meant to assist the audit offices involved in audit of phases of systems development of auditees.

Some proposals recently received by the IT Audit Wing at iCISA on the new IT systems from State Governments of Karnataka and Maharashtra for comments of the C&AG which were duly sent; the Controller General of Accounts also sought comments of C&AG on a new computerised accounting system.

For EDP audit, it was recognised that most important factor was to equip audit personnel with the requisite expertise to audit computer-based systems. For carrying out this objective, it was decided that development of EDP skills must be attempted through structured training programmes, provision of standard materials and development of in-house EDP audit courses with assistance from other INTOSAI members, like GAO, NAO, Office of Auditor General of Canada etc. The plan recognised the need for intensive training inputs for the staff as well as for the IA&AS officers emphasising that 'all officers should have at least a basic awareness of computers and potential of the standard software packages like Lotus 123, dBase IV and MS Word'. Training for IA&AS officers covered the officers on Probation, promoted officers (immediately after their promotion) and other officers who were clubbed in three categories depending on their work experience. The institutions for imparting the training were RTIs and NAAA, Shimla (for all IA&AS officers). It was also open to use the training facilities offered by well-known institutions like NIC, NIIT, CMC Ltd., etc. The eventual goal, however, was to have in-house training facilities to the extent feasible.

AUDIT OF COMPUTER BASED SYSTEMS

It was in the beginning of 1990s that the Department seriously started attempts at EDP auditing because it was realised that the comfort of continuing with the traditional audit skills on the basis of documents such as printouts for the audit trail would no more be available in coming days. The initial steps were to create a database of auditee profiles and auditing computer based systems. Computer audit groups were to be set up in all offices but initially sixteen offices were identified based on training capacity. Training infrastructure was strengthened.

In August 1991, Dy. C&AG N. Sivasubramanian addressed all the Accountants General (Audit), all the Principal Directors of Audit (Civil) and Railways and Principal Directors and MAB in Commercial Audit giving detailed instructions on initiating IT audits. The letter asked the field offices regarding the necessity of identifying specifically in the context of computerized systems in the auditee units on the following:

(a) the method of documentation;
(b) change in procedures, and

(c) the steps in audit process and the detailed checks which have been rendered impracticable, inoperative or redundant.

The letter asked them, inter-alia, to identify the audit checks necessary vis-à-vis computerization in the auditee organizations as regards each computerized auditee and also class of applications. Field offices were directed that computer trained persons in their offices must be sent to the auditee organizations along with the audit party or even separately to understand the procedures in force for computerized processing and then formulate and write out revised audit checks mentioned above. A progress report was also to be submitted by the field offices to the HQrs every month. The reports from the field offices made it clear that most of the audit offices would face the question of audit of applications in offices, which had been computerized. This would require development of revised audit techniques. Headquarters, in May 1992 recognizing this, he decided to set up 'Computer Audit Group' soon in these offices. The idea was to create institutionalized arrangements for audit of computer-based accounting systems of the auditees. Specific directions issued by Dy.C&AG (N. Sivasubramaniam) in this regard in May 1992 were:

(i) A hand picked 'Computer Audit Group' in each office of three persons one Auditor, two AAOs from the existing strength,
(ii) The task of this Group were spelt out,
(iii) The knowledge and skills needed by this Group were also spelt out, and
(iv) About 12 weeks training was prescribed for the members of the Group—mostly in identified RTIs. The areas where training was needed were also clearly spelt out.

The Computer Audit Groups were to be supervised by a suitable Group Officer with a positive approach towards use of computers. The officer was also to be trained for basic computer applications.

Initially, 32 Computer Audit Groups were set up during 1992–93 and 1993–94. Upto the end of March 1999, 61 such groups had been formed.

A letter written in May 1995 by Assistant C&AG (Commercial) to then Principal Director of Commercial Audit, Madras[2] (now Chennai) reveals that a team under his leadership had prepared a report on 'Techniques for Accounts Audit where the auditee had

computerized systems'. HQrs, while appreciating the report decided to circulate the guidelines to all MABs asking them to attempt such an audit of at least one or two PSUs to start with and subsequently as they gained experience in using IDEA and other software packages, they could broad base the coverage.

The IA&AD procured in March 1991, an Interactive Data Extraction and Analysis (IDEA) software for use in audit of computer based systems.

Within the Department, action was initiated for software development for financial and accounting purposes, GPF and pension and strengthening the training facilities.

COMPUTERISATION OF ACCOUNTS & ENTITLEMENTS

The First Action Plan on computerisation was for the period 1992–93 and thereafter, an Action Plan was prepared for 1994–97. Subsequently, a three year Action Plan for computerisation was prepared for the years 1997–2000. In the first two Action Plans, the focus was on computerisation of pension, GPF and accounts compilation. The 1997–2000 Action Plan had given priority to the accounts computerisation through what is known as Voucher Level Computerisation (VLC). In a nutshell, computerisation efforts in the 1990s focussed on A&E offices.

- *General Provident Fund (GPF) Computerisation*: Computerisation was initiated in 1989 and by the year 2002–03, computerisation had been completed in all the 19 State AG offices that were involved in this function. The Department developed applications using different versions of the GPF software and within the versions, changes were made locally to the software application leading to further variations across the offices. These applications were developed using FoxPro/dBase. Under the VLC scheme, Oracle based GPF module was to be developed and implemented in a phased manner. Out of 19 State A.G. Offices, 16 offices have completed implementation while remaining three were in the process.
- *Pension Computerisation*: Beginning in 1990, computerisation of the pension authorisation slips in all the 20 offices involved in this function was completed by 2002–03. The platform used was dBase, but there is no standardisation in this application. In 2005, it was decided to develop standardised Oracle based pension authorisation and implement the same across the country. The

pilot project was completed in March 2007. Implementation has since commenced in many offices.

- *Accounts Computerisation*: Initial attempts in computerising accounts made in late 1980s and early 1990s were limited to secondary level compilation with the input data being compiled accounts and not vouchers. The big shift came with the IT plan of 1997–2000, when project VLC was launched, which uses the Voucher as the primary source. VLC is now implemented in 26 out of 27 states whose accounts are compiled by the Audit Department. The monthly accounts of Karnataka are computerised and efforts are on to generate Annual accounts through computers. This software has been developed in Oracle and the VLC package follows an integrated modular approach.
- *Computerisation of house keeping functions*: Most of the offices have implemented computerisation of various house keeping functions like pay roll, stock records, service records/ gradation lists, monitoring of receipt, disposal of dak, various returns to HQrs, control statements, monitoring complaints, library information system, autonomous bodies information system, IR monitoring, database of sanctions for audit etc. Almost all the offices had completed these house keeping functions by March 1999 except a few offices where some of the items were in the process of completion. Headquarters advised the field offices in December 2003, that software application which were being used in various offices of the department shall migrate in a phased manner to MS Access/Oracle in a specified period.
- *Audit functions computerisation*: The Action Plan identified following items for computerisation for which guidelines were issued to the heads of department in the IA&AD;

(a) IR monitoring
(b) Audit planning
(c) Monitoring of recoveries at the instance of audit
(d) Profiles of auditee organisations
(e) Autonomous Bodies Information System
(f) World Bank aided projects
(g) Database of Important Points –newspaper/ other sources
(h) Database of sanctions

Most of the items had been completed by all the offices by the year 2000.

INFORMATION TECHNOLOGY PLAN

A comprehensive Information Technology Plan was released by C&AG in June 2003 for the period 2003–06 outlining the projects that IA&AD would undertake in the three years of the Plan 'to harness the power of Information Technology'. This IT Plan focused on certain issues in Accounts and Entitlement Wing and Civil Audit Wing, which comprises 80 percent of the audit personnel. The plan focused on enhancing the quality of service functions and professionalisation of core functions through enlargement of personnel information, increase in employee participation and empowerment through knowledge management. The Plan defined the mission of the proposed IT Plan in terms of four goals namely upgradation of the quality of data maintained by the department to meet the information needs of the external consumers of the data maintained by the IA&AD (goal 1); to meet the information needs of the personnel within the organisation (goal 2); to meet the information needs of the management (goal 3) and to create enabling environment for use of Information Technology (goal 4). The Plan had, further, broken down the tactical plan into 15 specific projects. Project 1 for improved GPF applications (19 States), Project 2 for improved pension authorisation applications (19 States), Project 3 for gazetted entitlement functions applications (9 States), Project 4 aimed at consolidating and strengthening VLC system, Project 5 for AG's office website, Project 6 related to Interactive Voice Response System for GPF, Project 7 was for the development of Intranet for C&AG's office to act as a platform for information sharing, Project 8 was for implementing office intranet, Project 9 aimed at digitising manuals, Project 10 related to Audit Management System aimed at computerising the audit process in the Central and State Civil Audit, Project 11 related to creation of network of infrastructure in the field offices, Project 12 was for meeting the hardware/ software requirement of IT Audit Plan of the department, Project 13 dealt with use of digital signature, Project 14 was for exploring the possible use of open source software (OSS) and Project 15 was meant for capacity building through training.

This comprehensive IT Plan was to cost approximately Rs.30.5 crore.

PUBLICATIONS

The Information Systems Wing brought out and circulated the following publications/documents in the Department:

1. Systems Development Methodology in IAAD (June 1997)
2. IT Security Guidelines in IAAD (February 1998)
3. Information Systems Security Handbook for Indian Audit & Accounts Department (December 2003)
4. Backup Policy (January 2005)
5. Guide on Installation and Configuration of MS-Windows Small Business Server 2003 (June 2006).

STUDY OF BUSINESS PROCESS REENGINEERING (BPR) & BUSINESS PROCESS MANAGEMENT (BPM) IN SELECTED OFFICES OF IA&AD

The objectives of the study were (i) to achieve a sustainable and efficient work place with optimised Total Cost of Operation (TCO) and IT resources utilisation and devise new work norms in selected offices and (ii) integration of IT application on heterogeneous platforms with a unified view for access and ease of use by applying System Usability, Human Computer Interface (HCI) standards for effective management.

For carrying out the study, Accountant General (A&E) and Pr. Accountant General (Audit) / AG (Audit) offices at Bangalore, Gwalior and Bhopal were selected. The C&AG appointed a Consultant to conduct the study in selected offices and to prepare a vision document to implement and sustain a new modernised 21st century office.

The Consultants gave their recommendations in April 2007 which were accepted by the C&AG. He also desired that the recommendations be assigned to the concerned DG/PD at Headquarters who would also be the project owner for the purpose. Four project owners were nominated for the purpose namely DG (AEC), DG (Audit), PD (Staff) and Director (IS). The project owners were to examine the recommendations and draw an Action Plan for implementation in consultation with Director (IS). Earlier a Task Force Committee under the chairmanship of ADAI which included, amongst others, DDG (NIC) as members had discussed the recommendations of the consultants and suggestions of the Committee were forwarded to the consultant in December 2006 for submitting his final BPR Report and strategy document for implementation and changed management plan.

AUDIT MANAGEMENT SYSTEM (AMS)

A highly significant component of IA&AD Perspective Plan was Audit Management System. This important project was to target State Civil Audit initially since this is the largest single unit of Audit in the IA&AD. The AMS would develop a single comprehensive application with multiple modules which would include the complete audit process within the audit office to cater to :

a) Audit Planning
b) Audit Documentation /Presentation
c) Monitoring /Analysis; and
d) Follow up action.

WORK FLOW AUTOMATION

C&AG Kaul decided to computerise comprehensively all functions of Headquarters office as well as field offices. The Work Flow Automation Project (WFAP) is being implemented initially in the Headquarters office with the primary objective of integrating/ interlinking of all wings and sections of C&AG's office and eventually linking all the field offices with C&AG's office. The ultimate aim is that WFAP would act as a pilot for a paperless office and expectations are that this could be implemented in the new building of the C&AG which is under construction. The objectives of WFA Project are:

- To get the optimum utilisation of the available IT resources
- To integrate all software applications available in the C&AG's office
- To remove the redundant activities in the manual system
- To bring in transparency by designing a file tracking system
- To improve productivity and performance of the office
- To fix responsibility on the users
- To bring in paperless work flow

A detailed plan for Work Flow Automation Project for Headquarters office was presented to C&AG in February 2005. The plan contained Work Flow Automation for Indirect Taxes and administration wings in the first phase. The Work Flow System to be designed would have data and document management features, integrated with intranet (iC&AG) to comprehensively cover all the functions of respective wings. The look and feel of the system would be uniform and user friendly. System flexibility for future requirement was provided. The rollout of the administration module

to the Field Offices could also be planned after implementation in HQrs office. The programme selected was Microsoft SQL server as database, Biztalk server for integration of existing applications and Share Point Portal Server for Intranet. This platform could be integrated or interfaced with all the existing applications as well as the new applications like Audit Management System (AMS) without any problem.

In November 2005, a micro plan for rollout of WF Automation System to other Audit Report Wings was prepared which contained the activities, end date/ period, role of officers, etc.

Currently, the WFAP is operational in Indirect Taxes wing, Administration wing, Works & Project Section, Railway Audit wing and Report (Central). The Users Requirement Specifications (URS) of Report (SCS) and Report (States) Wings are being finalised.

For implementing the WFA in Headquarters office, a vendor of repute was selected.

INFORMATION TECHNOLOGY AUDIT

Despite the fact that an EDP Audit Guide (New Audit Guide Series) was brought out and circulated to all audit offices by the end of 80s, the development of IT Audit was initially somewhat uneven in the department. Although, initial attempts in this direction were made in early 1990s by the formation of Computer Audit Groups and subsequently providing intensive training for skill upgradation, effective IT audit commenced much later. The following extract from an address by the then C&AG C.G. Somiah in September 1995, aptly sums up his perception of the status of EDP in the Department and his word of caution:

'Most of the participant Accountants General are conversant with computer applications. This is an area about which I must confess that I am less than happy. I was hoping that our offices would take to EDP very swiftly, since the personnel at all levels are exceptionally intelligent and talented. It is a great pity that our audit methodology and our accounting still make so little use of the computer…Our effectiveness, even credibility, and I repeat, our relevance, may be in peril if we pay insufficient heed to this important area.' Yet the measures taken in 1990s laid the solid foundation for a knowledgeable, trained manpower, the results of which came little later. The Department prepared its first IT Audit Manual in 1996 along with IT Audit Training Manual. A momentous decision that made a big difference in the development of IT Audit

was the setting up of IT Audit Centre. The proposal was, as mooted initially in October 2000, that a IT Audit core team may be set up in HQrs Office comprising one PD level Officer and 3 group officers. The fast emerging developments in IT and passing of IT Act 2000 along with the fast growth in computerisation of auditee organisations necessitated strengthening IT Audit set up in IA&AD. In pursuance of recommendations of 20th conference of Accountants General for constitution of a centre of excellence in computer research and data management in the Department, a working group set up to examine the proposal recommended that the proposed centre of excellence in IT should be headed by an AG Level Officer to be assisted by Group Officers. It would be the one stop centre, which will have entire sartorial requirements of IT in audit and accounts. Quite clearly they would have adequate knowledge of computers, accounts, audit and overall working of the Department.

C&AG, Shunglu while approving these proposals in October 2000 decided that the proposed IT Audit Centre would be located at International Training Centre at Noida. To the question whether the officers to be posted to this Centre should be IT experts from outside or officers of the Department, C&AG opted for the latter option. However, given the complexity of the task and the high standards of achievement expected from the Centre, selection of the candidates from the available talent was to be carefully done. C&AG emphasised that, considering that IT was a very rapidly changing sector, remaining up-to-date with the changes and consequential systems improvements would require continuous build up of core competency. The C&AG was of the view that 'while it will be wonderful to extract talent from within the Department, it would be undesirable to exclude outside experts.'

The setting up of IT Centre under PD (IT Audit) prompted the C&AG to clearly demarcate the functional areas amongst three persons involved in the IT related activity in the Department viz. (i) Director, EDP (now called Director, Information System), (ii) PD/ DG, iCISA, and (iii) DDG, NIC.

In December 2000, when these decisions were being taken, IT application in Department had 3 distinct aspects viz. (i) use of IT for house keeping and other inhouse functions like word processing, audit planning, e-mail, financial management functions, (ii) use of IT in accounts and entitlement functions, and (iii) audit of IT systems of various auditees in the Union Government, State Government Offices, PSUs and other bodies that come within the ambit of C&AG's audit.

The first two areas mentioned above were being dealt with by Director (EDP). The functions relating to audit of IT systems was given to PD (IT Audit) who was given the following main responsibilities:

(a) Carry out a survey of the impact of IT on financial statements and finance related operations of entities under the C&AG's audit jurisdiction.
(b) Design a detailed checklist for the above purpose.
(c) Assess the implications arising out of the survey and prescribe the appropriate audit programmes.
(d) Where the appropriate audit programme involves the use of CAATs, identify the proper methodology, software and resources and exercise supervision over implementation.
(e) Plan & supervise VFM audits of IT systems.
(f) Process reports arising out of audits carried out on this basis.

A detailed list of functions being performed in IT Audit Wing is at Annex.

It was emphasised that Director (EDP) and PD (IT Audit) would not function in watertight compartments and would have freedom to interact as and when needed. The position was to be reviewed after one year.

The 3rd IT functionary in the Department is DDG (NIC) who works as an IT Adviser to C&AG and the Department. For him, the principal role is that of advising both the wings viz. IT (Audit) and Director (EDP) on developments in the field of IT. In fact, DDG (NIC) was posted to the C&AG office by the National Informatics Centre currently under the Department of Information Technology on the specific request of IA&AD. This officer of PD level in audit parlance reports to Dy. C&AG and works as IT Adviser to C&AG and the Department with the following broad objectives:

(i) Creation of ICT Infrastructure, Capacity Building and devise IT and IT Audit Plan.
(ii) Establishment of Government Informatics Network (NICNET) node and NIC Cell at IA&AD.

DEVELOPMENTS IN IT AUDIT

While intentions to carry out IT Audit had been expressed right from the computer policy paper of 1989, it would be more correct to ascribe the advent of IT audit to the formation of Computer Audit Groups in Audit offices. Along with this, EDP profiles of auditee organisations were updated under IR Monitoring of audit functions

in each Accountant General office. The Computer Audit Groups had the responsibility of conducting EDP Audit of computer based systems. Their findings were reviewed from time to time in HQrs for qualitative improvement.

The personnel in these Computer Audit Groups were also provided intensive training at the NAO UK initially in two batches —first batch of 15 officers in May 1995 and second batch, also of 15 officers in September 1996. In September 1997, a third batch of 15 officers were trained in NAO UK in IT Audit. These trainees were 'core group' and they prepared subsequently practioners guide to IT audit and also IT audit training Manual. They also acted as resource persons for IT Audit Training Programmes.

The initial output from the field offices on IT Audit was subject to thorough review at HQrs. The bottlenecks identified in this regard mainly related to data downloading from Main Frame and Mini Computers. Around 1999, however, Computer Audit Groups had started IT Audit which were vetted at HQrs and as a result these were modified/ considerably improved.

DEVELOPMENTS IN IT AUDIT POST 2001

It would be fair to say, however, that with all the efforts, only sporadic IT Audit output was coming out. The important change in this context was as detailed above the establishment of a separate IT Audit Wing at Noida in 2001 as part of C&AG office, which gave a fillip to the IT Audit development. This IT Audit Centre acts as a nodal point and gives central direction and ensures uniform standards. Creation of iCISA will rank as one of the key contributions that C&AG, Shunglu made towards Department's march on IT Audit path.

The present system of IT Audit will indicate the close involvement of IT Audit Centre in the development of IT Audit skills and publication of IT Audit Reports.

To begin with, the Wing published a General Principles Monograph on IT Audit in December 2001 for use of Department. This was a guidance for IT Audit in the Department and intended to replace the 'EDP Audit Manual'.

DATA BASE OF IT SYSTEMS

There were also attempts at making a database of all the IT systems with the auditees. Accordingly, an information gathering checklist was developed and circulated to all audit offices in December 2001.

The responses to this checklist were received from the field offices and compiled in the IT Audit Wing. It was found that approximately 3500 IT systems were available in the country on various platforms and pertaining to different applications/systems from a simple payroll system to assessment of tax in Income Tax/Commercial Tax to Passenger Reservation System (PRS) in Indian Railways and ERP System in various public sector undertakings. The exercise was further repeated in 2004–05. This database with the Criticality Assessment Tool (CAT) developed by the wing in 2004 was utilised for IT Audit Plans of the field offices.

IT AUDIT RESOURCE MATERIAL

IT Audit wing has brought out several publications relating to IT auditing for use by the audit offices as resource material. These were:

- IT Audit—General Principles, Monograph (2001)
- Preliminary IT Audit Information Gathering Checklist (2001)
- Database on Auditee applications (2002)
- Inventory-checklist (2002)
- Strategic IT Audit Plan (2003)
- Training Material on IDEA (2003)
- IT Audit Reporting Guidelines (2003)
- Audit Checklist for Audit of Systems Under Development (2004)
- IT Audit Training Material for ASOSAI (2004)
- Criticality Assessment Tool (2004)
- Pursuit; the IT Audit Journal (2005)
- IT Audit Manual (2006)

STRATEGIC IT AUDIT PLAN

C&AG Kaul has repeatedly observed that he gives highest priority to the IT Audit as the audit of the future. In line with this thinking, he has given great thrust to the development of IT Audit in the department. He was helped in this by the Report of the NAO UK Consultant. C&AG commenced with formulation in 2003 of Strategic IT Audit Plan for five years with the following goals:

- To establish and enhance IT audit functions in IA&AD.
- To develop IT knowledge and infuse relevant skills among IT auditors.
- To acquire appropriate IT infrastructure for supporting and enabling IT audit processes in the audit department.

- ❖ To evolve best practices in IT audit, and to adopt and refine results of research in the leading edge technologies for IT audit.
- ❖ To prepare and disseminate fully researched and integrated audit documentation, to establish structures and processes for quality assurance, and to improve qualitatively and quantitatively international representation.

There were efforts on preparation of various handbooks, checklists and guidelines for assistance of the IT audit parties. Two batches of two officers each were sent to the General Accountability Office of the USA for three months training in IT audit. They were subsequently posted in the C&AG office for giving the impetus to the development of IT audit efforts of the Department. And this yielded the checklists for the audit of an inventory system (2002), a training material on Interactive Data Extraction and Analysis (IDEA) (2003), IT Audit Reporting Guidelines (2003), Checklists for Audit of Systems under Development (2004). SAI India was also involved in the ASOSAI project on development of the IT Audit Training Material, which was developed in 2004.

A landmark decision in creating resource personnel for the IT Audit was impetus on acquiring professional qualification-Certified Information Systems Auditor (CISA), Certified Fraud Examiner (CFE), Certified Information Security Manager (CISM) examination. At the top executive level the department was thus able to have 27 CISA qualified, 10 CFE qualified and 5 CISM qualified resource personnel in addition to similar officials at the middle level of hierarchy (as of September 2007).

A major exercise undertaken was to streamline the efforts of the field offices in IT audit planning and execution. Accordingly, it was decided to update the database of the IT applications in the audit offices and also to grade all the IT systems. A criticality assessment tool on the lines of what was being used in the NAO, UK was developed where the IT systems were given scores on 23 aspects. Based on the total scores, the systems were to be graded as 'A', 'B', 'C' or 'D' with A being the most critical. Thus, a risk assessment tool was developed and was put to use as a tool assisting in the IT audit planning. This went a long way in prioritising the resource deployment in the IT audit field.

The Department also adopted four CAATs for use in the department and efforts were increased to train as many personnel of the department as possible who would be engaged in IT audits. The CAATs included IDEA, Structured Query Language (SQL), MS

Access and MS Excel. The Regional Training Institutes of the IA&AD took upon themselves and started IT audit trainings on the request of field offices. The International Centre of Information Systems and Audit also undertook various IT audit trainings.

To give a uniform direction to the IT audit approach in the Department, CoBIT (Control Objectives for Information and related Technologies) framework of ISACA was adopted for IT audits by the department. The framework was disseminated to the IT audit parties in the field through various training programmes through RTIs and the iCISA. Subsequently in the year 2006 the wing came up with the IT Audit Manual (three volumes) for use in the Department. The manual contained detailed checklists on specific audits and information on use of CAATs apart from the description of the IT controls.

In the year 2005–06, it was decided to train one team from each field audit office under the Accelerated IT Audit Training Initiative (AITATI). The training had vertical integrated course for Group 'A' and Group 'B & C' officials for enhancing basic IT Audit skills of field offices. The IT Audit horizon was intended to widen through 13 AITATI programmes which included one programme on Training for Trainers also. An additional objective of imparting the training through AITATI was to bring in uniformity in IT audit approaches and also to 'demystify' and clarify the concepts of IT audit.

The IT audit efforts did start with the creation of the wing and by identification of few offices located in Mumbai, Delhi and Chennai to conduct IT audits.

The flow of the results of IT audits in the form of reports started in 2003–04 when 98 IT audits were attempted and 17 of these were cleared by IT Wing and also incorporated in the Audit Report. The year 2004–05 saw a big leap in the conduct and reporting in the IT audits. Overall 105 IT audits were attempted, 49 of these were cleared for inclusion in the C&AG's reports by the IT Audit Wing and 41 ITA Reports were finally incorporated in C&AG Reports. The next year, i.e. 2005–06, the number of IT Audit conducted and cleared for inclusion in the C&AG's report, were 131 and 70 respectively with 47 eventually incorporated in C&AG Reports. Thus efforts of the wing, various field offices and the IT audit parties, since 2001–02, had started yielding fruits. The target for the wing was that all the field offices should be doing at least one IT audit and should aim at completing the IT audit of important IT systems within a fixed timeframe.

In March 2006, HQrs formulated a procedure (after a meeting of all the functional heads in HQrs—DAIs and ADAIs) that, comprehensively deals with planning, monitoring, processing and approval of IT Audits in the IA&AD. It had the following important points.

Monitoring of the IT Audits in the field offices was to be done by IT Audit Wing.

Planning for IT Audit was to be a combined exercise involving IT Audit Wing who would initially select the topic in consultation with field offices and functional wings at HQrs.

IT Audit Wing would carry out evaluation of pilot studies, finalisation of guidelines, mid-term appraisals, etc. In all these activities, the concerned functional wings would be kept informed.

PROCEDURE FOR PROCESSING OF IT AUDIT REPORTS

Regarding processing and approval of the IT audit material, the instructions[3] clarify that IT Audit Wing shall process the material received from the field through the first journey and second journey and hold discussions with the field offices. However, in processing the material and approving the same, the IT Audit Wing would clear it from IT materiality angle to ensure that the material is fit for inclusion in the Audit Reports. The functional wing to whom the material will be forwarded by the IT Audit Wing would not change the portion containing IT audit output without the concurrence of IT Audit Wing. After this, the functional wing will process the material and submit to the concerned Dy. C&AG or Addl. Dy. C&AG.

In summary, therefore, IT Audit output would be a joint responsibility of both the IT Audit Wing and respective functional wing; no doubt the IT Audit Wing shall bear the sole responsibility as regards IT materiality.

Regarding classification of IT into Performance Audit or Transaction Audit, the functional Wing may take a final decision on the suggested classification given by IT Audit wing. The instructions also enjoined that functional wings would participate in the workshops conducted by IT Audit Wing, for which purpose, functional wings should be informed well in advance.

The instructions also contained the importance of coordinating on draft IT audit reports with the concerned report section to avoid any undue delay in its final output.

The IT Audit Wing continues to evolve with the changes in the IT environment and the newer systems and applications, which are seeing the light of the day. The IT Audit Wing has overseen audit of ERP systems, e-procurement systems, PRS of Indian Railways, etc. already and is geared up on all fronts to meet the emerging challenges in the realm of IT audit.

ANNEX

WORK IN THE IT AUDIT WING

The tasks presently being performed by the IT Audit Wing are as under:

(i) To plan, monitor and co-ordinate all IT Audit related activities of the department.
(ii) To make annual IT Audit Plan of IA&AD.
(iii) Conducting IT Audit Workshops. This year one workshop for all the Railway Audit Offices for topics likely to feature in C&AG Report 2007 was concluded on 16 June 2006 in headquarters office. Such workshop for Commercial and other functional wings are to be finalized.
(iv) To develop methodologies and guidelines for auditing Information System covering auditing the planning process of the Information Systems, and their operation, maintenance, quality and security.
(v) To develop procedures to collect electronic evidence.
(vi) To develop procedures to use Computer Assisted Auditing Techniques
(vii) To develop reporting standards for IT Audit reports
(viii) To plan and conduct IT Audit of selected Complex IT Systems
(ix) To assess the quality of IT audit reports of the department
(x) To guide the teams of field offices conducting complex IT Audit.
(xi) To disseminate knowledge of technology
(xii) To draw up suitable training plans and updating training courseware
(xiii) Developing expertise in the operating system, RDBMS etc. used in the department (Application packages are not covered in this)
(xiv) Other items as may be identified or assigned by ADAI/ DAI/ C&AG.

NOTES: CHAPTER-16

[1] The officer posted was Dharam Vir

[2] S.B. Pillay

[3] Issued vide U.O No. IT Audit/2005–06/Policy dated 22.3.2006 to all field offices of IA&AD under Circular No. IT Audit/Policy/2005–06 by Ghazala Meenai OSD (Trg. Research and IT Audit).

LIST OF KEY EVENTS

November 1989	Formulation of revised computer policy.
March 1991	C&AG procured IDEA software developed by Auditor General (OAG), Canada for use in audit of computer based systems.
1992–93	Action Plan for 1992–93.
19 May 1992	Decision to set up 'Computer Audit Groups' in each audit office.
May 1995	15 persons got training in IT audit in UK. 30 more were trained upto 1997.
May 1995	MAB Chennai prepared a report on 'Techniques for Accounts Audit where the auditee has computerised system'
17 August 1999	ADAI (RC) requested DAIs/ADAIs of functional wings to formulate audit strategy for their wings as per deliberations at ITC Ghaziabad.
9 November 1999	DGs/PDs auditing Union Government Accounts instructed to set up IT Audit Groups, prepare IT profiles of auditees, identify necessary hardware/software and send their Action Plan
November 2000	C&AG decided to set up IT Audit Centre at International Training Institute, Noida.
2001	Publication of General Principles monograph on IT Audit
24 July 2003	C&AG prepared IT Plan (2003-06) outlining IT projects to be undertaken during 2003-06.
2006	Procedure for processing and approval of IT Audit Reports and their categorisation was issued.
2006	Revised and Comprehensive IT Audit Manual in three volumes released.

DOCUMENTS

1

No. F. 10 (20)-8/73
Government of India, Ministry of Finance,
(Department of Economic Affairs)
11th June, 1973

OFFICE MEMORANDUM

Sub.:Introduction of computer-based accounting system in Government Department

The undersigned is directed to state that the Comptroller and Auditor General of India has pointed out that the Ministries/Department etc. are not following a uniform procedure in regard to the manner and the stage at which reference seeking his concurrence to the introduction of Computer based accounting system by them should be made. It has been suggested by the Comptroller and Auditor General of India that proposals regarding introduction of the computer based system should be referred to Audit at the following two stages:

a) After the work of systems design is completed but before the computer programmes are written up; and
b) After the computer programmes are written up and tested but before the new system is introduced;

The above suggestions have been made with a view to avoiding the need for costly system modification and re-programming as a result of audit observations. In this connection a copy of letter No. 624/74-O&M/72 dated 12 December, 1972 together with its enclosures from the Comptroller and Auditor General of India endorsed to this Ministry is forwarded herewith.

2. The Ministry of Agriculture etc. are requested to note the contents of the enclosed letter carefully and process proposals regarding introduction of computer based accounting system etc. In the manner desired by the Comptroller and Auditor General of India. The information listed in the annexure to the enclosed letter must invariably be supplied at the relevant stage, to the Comptroller and Auditor General of India along with the other papers containing the proposals .

Sd/-
S.Mathur
Under Secretary to the Govt. of India

To
All Ministries/Department of the Government of India
Copy forwarded for information to the Comptroller and Auditor General of India, New Delhi with reference to his letter No. 624/74-O&M/72 dated 12.12.1972 and No. 64-O&M/74-72 dated 13.3.1973.

Sd/-

ANNEXURE

The following information should be supplied to Audit at first stage of reference.Detailed analysis of the existing systems, bringing out:

(i) Scope and functions of the systems.
(ii) Volume, type and periodicity of transactions;
(iii) Records maintained in the system, with specimen copies of forms used;
(iv) Flow of information through the system;
(v) Significant weak points in the system and bottlenecks experienced in the actual operation of the system;

Detailed description of the proposed system indicating clearly:

(i) The functions which will be transferred to the computer;
(ii) The functions which will continue to be performed manually and the extent to which and manner in which these are proposed to be modified in the context of introduction of computer;
(iii) The records to be maintained manually with specimen copies of forms in which they are proposed to be maintained; and
(iv) An overall narrative description and accompanying flow chart of the general flow of information through the system;

The design specifications, which describe the logic of the proposed system, including:

(i) Flow charts showing the significant operations to be performed by each proposed computer run;
(ii) For each computer programme, a brief description of the functions to be performed , types of input and the resulting products;
(iii) Input and output forms and file lay-out, including the descriptions of physical characteristics of the data elements to be contained in the transaction records and data files and the media (punched cards magnetic tapes etc.) to be used;
(iv) The system of codification and the compatibility envisaged between different types of codes;
(v) The time-schedule of operations, with specific target dates prescribed for each operation and ;
(vi) Description of controls to be provided over data-
    a) Inputs, including the types and purpose of edit and other purification and validation routines;
    b) Processing, including the plan for back-up operations;
    c) Storage, including plans for reconstruction of data files; and
    d) Outputs
(vii) deviations from the provisions of the relevant rules, codes or manuals.

Any changes in procedures or rules considered necessary or desirable in the context of computerisations or otherwise.

After the programmes have been written up and debugged, and the system as a whole has been tested, the design specifications as finally firmed up should be sent to audit at the second stage of reference. The other information required to be supplied to audit at this stage would be as under:

1) the test data used for programme testing and system testing and corresponding printed outputs;
2) the results of experimental operation, which should clearly indicate, on the basis of the live data processed through the system, the following viz.
   (i) the extent to which the system fulfilled the planned objectives;
   (ii) the extent to which the programmes worked and were able to cater to the data;
   (iii) based upon (i) and (ii) above, the extent to which the system could be relied upon for timely and accurate processing of data;
3) the plan of switch over to the new system, including -
   (i) the phased programme of conversion;
   (ii) any special difficulties anticipated in conversion, and the measures proposed to be taken to overcome them with particular reference to the special action, if any necessary for cleaning up or purification of manual records before transfer to computer;
4) copies of Procedure Officer Orders, Procedure, Manual etc. prepared in connection with the new system.

2

T.R. Krishnamachari
Director (O&M)

D.O. No. 1471-1566/11-EDP/89
Dated: 28-11-1989

Dear Shri

Please refer to Shri. Sampath Narayanan's D.O. letter No. 1-JD/SD/Policy—Comp/86/Pt I dated 2.7.1987 forwarding therewith 'PAPER ON COMPUTER POLICY IN IA&AD'. The Comptroller and Auditor General of India has approved a computer policy statement. A copy of the statement titled 'Indian Audit & Accounts Department—Computer Policy' is sent herewith for your information and guidance.

Its receipt may please be acknowledged.

Yours sincerely
Sd/-

Encl: As above

Endst No. 1567-1583/11-EDP/89 Dated: 29-11-1989

Copy along with a copy of enclosure forwarded to:

1. All ADAIs/Directors in Headquarters Office

2. The Director (Staff). A spare copy of the statement referred to above is sent here with which may please be sent to the Staff Side of the Departmental Council (JCM).
3. AC (P)/AC (C)
   Encl: As above

Sd/-
(T.R. Krishnamachari)
Director (O&M)

INDIAN AUDIT AND ACCOUNTS DEPARTMENT COMPUTER POLICY

Back ground

Government organisations and public sector undertakings are increasingly relying on computer-based systems. In order to enable us to undertake comprehensive audit of such systems we need to adopt our methods and techniques of audit to the new technological environment. The Department has also to consider developing computerised systems in the area of financial accounting, which requires speed and flexibility of processing to be of real value to the user. Similarly, the use of computers to improve the quality of our entitlement work needs no emphasis. The planning and conducting of our audits, in keeping with the changing work culture and environment, will entail identification of appropriate computerised systems. In the light of the experience gained so far, our objectives and means are stated below.

Objectives

- To use computerised systems inaccounting anentitlement functions for qualitative improvement keeping in view the manpower resources and the practicability of switch over without avoidable loss of time;
- To undertake comprehensive audit of computerised systems;
- To use computerised systems to plan and undertake our audits more efficiently;

Means

- Defining our training needs with reference to our objectives and developing appropriate training plans;
- Specifying viable monitoring and review arrangements for implementing the plans.

Personnel

Computerisation in the department will not result in retrenchment of staff nor will it adversely affect the existing promotion prospects of personnel serving in the IAAD. Upgradation of skills to meet the growing needs of computerisation of accounts and entitlement functions and of audit of computerised systems will provide opportunities for personnel to be redeployed in more meaningful jobs, leading to a qualitative improvement in our work as a whole.

3

N. Siva Subramanian
Dy. Comptroller & Auditor General

No. 726-EDP/24-91 Vol. II
Dated: August 16 August 1991

Shri

It is very likely that many auditee organisations under audit control have computerised their Financial, Stores accounting system or payroll or Provident Fund, referred to as 'application' when done using computer (programmes) which are within the purview of audit. It is necessary to go by application areas computerised and not by mere existence of a personal computer (PC) in an office. The enclosed list of computerised auditees obtained from your office some time back, some more names may have to be added or more applications might have been brought on the computer. The list may kindly be updated and sent to us by 15.9.1991 for record. It will be useful for you also to get information in the enclosed Performa again from each auditee using computers, to know all applications coming under computers, presently.

2. The audit of organisations, done in terms of provisions of DPC ACT 1971 as amended from time to time, are conducted generally as per instructions in the Manual of Standing Orders (Technical) Volume I, other instructions issued from headquarters office, and special Manuals of your own office. These manuals were written in the context of manual compilation/processing of accounts. In the changed context of computerised processing, many of the audit checks in these manuals might be inoperative or impractical. The audit checks may also be ineffective in the computerised environment. Therefore, it is necessary to identify specifically.

a) the method of documentation,
b) change in procedures, and
c) the steps in audit process and the detailed checks which have been rendered impracticable, inoperative or redundant.

3. Under the computerised system, the identification of changes in audit process and in the scope of audit needs to be done with specific reference to each audit check—prescribed for check at headquarters or during local audit (Inspections)-as has been affected by the computerisation in the auditee organisation. They will be specific to an auditee or class of auditees. Therefore, the revised or new audit checks to be carried out on the computerised applications have to be formulated and incorporated in the various local manuals by way of a supplement to the manual or as a set of new instructions, covering individual computerised auditee or class of computerised applications.

4. Though the principles of audit and the objectives of audit do not change, there would be no uniformity in the detailed steps which Audit should follow in checking the computerised accounts or area of application of computers. This arises from the varieties of hardware, software, and innovations in the method of computerised processing in the individual organisations. The task of identifying the changes in audit checks vis-à-vis computerisation in the

auditee organisation will, therefore, have to be undertaken locally in your office, for each computerised auditee and class of applications.

5. A list of computer trained persons in your office is enclosed. This list also needs to be brought up to date and a copy sent to this office for record by 15.9.1991. These persons may be deployed on the 'task of identifying the revised or new audit checks that need to be exercised in the computerised processing of accounts, etc. in the auditee organisations'. For this purpose these officials may have to visit the auditee organisation along with the audit party or separately to understand the procedures in force for computerised processing and to formulate and write out the revised audit checks referred to in para 3 above. This task may be undertaken on priority basis and a copy of revised or supplementary set of instructions as will be appended to the Manuals may be sent to us. This may be done in instalments starting from 15.10.1991 if large number of auditees are involved. Progress may be reported to Principal Director (O&M and EDP) monthly.

4

D.O. Letter No. 337-352-EDP/24-92
N. Sivasubramanian
ADAI Date: 19 May1992

DearShri

Kindly refer to my D.O. Letter no. 726-EDP/24-91 Vol. II dated 16.8.91 regarding the audit of computer based systems of auditees. From the information received so far from most offices, it is clear that audit offices will soon come face to face with audit of applications which have been compuerised and appropriate revised audit techniques will need to be used. Every audit office may, therefore, need a computer Audit Group' very soon. Such specialist group may be needed because the number of line auditors may take time to imbibe knowledge, skills and experience needed to audit computerised systems in an auditee office without assistance from a core group.

In order to create institutionalised arrangements for the audit of computer-based systems used by auditees, the following decisions have been taken:

a) Every audit office may form a hand-picked 'Computer Audit Group', comprising one AO and two AAOs/SOs (AAO and SO are interchangeable) out of the existing staff. For the present, no new posts will be sanctioned for this purpose. Where hand-picked Auditors or clerks are preferred for the composition of the computer audit group, they may be added to the group if their computer-expertise will be useful and they can be attached to the group by internal arrangement.
b) The tasks of the Computer Audit Group are spelt out in Annexure-A
c) The knowledge and skills needed in members of the computer audit group, to discharge its functions, are spelt out in Annexure-B.
d) For acquiring necessary knowledge and skills, the members of the computer audit groups will need to undergo about 12 weeks of training in several short spells. The intervening periods would be devoted to on-the-job work and

experience in computer audit. The duration and content of training are spelt out in Annexure-C.

e) RTIs at Allahabad, Jaipur, Madras and Nagpur will be organising training for the members of the groups for 12 weeks in five different spells. The Calendar of Training Programmes for 1992–93 of the RTIs contains the dates of courses and slots allotted to your office. Kindly get in touch with the Principal of the RTI concerned to nominate your staff of the courses.

Nomination:

3. While nominating the personnel for the Group and training, the following criteria may kindly be kept in view:

The nominee should

a) possess sound knowledge and practical experience of conventional audit procedures and techniques;
b) have an aptitude for EDP-related work; and
c) have atleast five years service left before superannuation.

4. The Computer Audit Group may be placed under the supervision of a suitable Group officer with a positive approach to use of computers and learning about them. He may be assisted in becoming familiar with:

a) PCs and software packages like Dbase and Lotus 123;
b) Structured Systems Analysis and Design; and
c) Auditing computer-based systems.

Knowledge of programming and familiarity with UNIX and concept of RDBMS (Relation Data Base Management System) or willingness to learn them will help. If no such officer is available, the AO heading the Group may report to AG/PDA directly and seek assistance from Director (EDP) in Headquarters.

Reporting:

5. a. Details of the nominees to the Computer Audit Groups (Name, Date of Birth, Date of Commencement of Service, current designation, Date of appointment to the current Grade, Audit experience) and Group Officer may kindly be sent to Director (EDP) in Headquarters by 15.6.1992 and later changes made in consultation with him if unavoidable. The nominations may also be communicated to the principal of the RTI which is organising their training, as per the Calendar of Training Programmes for 1992–93.

b. Action Plan and action taken note on Annexure—A may kindly be sent to Director (EDP) by the beginning of the second quarter of 1992–93; for item (b) of Annexure-A, data may be sent in a floppy as Dbase IV files containing the structures specified in Annexure – D. Quarterly change floppies may be sent on important changes, if any. (The floppies will be returned to you quarterly).

Role of other Auditors:

6. Apart from setting up the Computer Audit Groups, all line auditors would have to be trained to handle relatively simple aspects of auditing computer-based systems. All line auditors would also need to be instructed to notify the

computer audit group whenever they come across any computerised output or system in the auditee office. The line auditors would have to be trained, or given a questionnaire, by the Computer Audit Group on how to conduct a survey of the computerised system to determine its impact on audit. When the audit of the computerised system is beyond the competence of the line audit party, the specialist computer audit group's assistance or guidance will need to be extended.

7. Kindly acknowledge receipt of this letter.

Yours sincerely,
Sd/-
N. Sivasubramanian

5

No. IT Audit/Policy/2005–06
Date 23 March 2006
To
All Audit offices in IA&AD as per mailing list
Sub.: Formulation of a procedure for processing and approval of IT Audit Reports and their categorisation
Sir/Madam

I am to forward herewith a copy of the order of the Comptroller and Auditor General of India on the above subject for information and compliance.

Yours faithfully
Sd/-
(GHAZALA MEENAI)
OSD (Trg. Research and IT Audit)

OFFICE OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA
NEW DELHI

Sub.: Formulation of a procedure for processing and approval of IT Audit Reports and their categorisation.The Comptroller and Auditor General has approved the following procedure for planning, monitoring, processing and approval of IT Audits in IA&AD:

1. Planning of the IT Audits

The selection of topics for IT Audits will be done by the IT Audit wing in consultation with the Field offices and the Functional wings.

2. Monitoring

Pilot studies evaluation, finalisation of guidelines, holding workshops, mid terms appraisals etc. would be done by the IT Audit wing. The concerned functional wings would be kept apprised of the developments.

3. Processing and Approval

After the IT audit material is received in the IT Audit wing, the IT Audit wing shall process the same through the first journey; second journey and hold

discussions with the field offices. The IT Audit material will be examined in the IT Audit wing with reference to the parameters of IT Audit reporting. In regard to processing and approval of the IT audit material, the IT Audit wing would clear it from the IT materiality angle and ensure that the material reaches a stage to be fit for inclusion in the Audit Reports. This would include, as is being currently done, full KD verification (manual and electronic).

(i) IT Audit wing may indicate to the functional wing the portions/ issues in IT audit outputs where the functional wing may be requested to take a view or also look into conversely the functional wings may also consult the IT audit wing if the situation demands. In order to avoid breakage of the logical links in the reports, concurrence of the IT audit wing may be obtained for any changes made in the report by the functional wings before submitting it to the concerned DAI/ADAI.

(ii) In so far as the audits that are not part of the Annual IT Audit plans and have utilised CAATs for data analysis only, the output would be the responsibility of the functional wings. However, the functional wing may consult the IT Audit wing, if required.

(iii) Thus IT Audit output would be the joint responsibility of both the IT Audit wing and the respective functional wing. As far as IT materiality is concerned, this shall continue to be the sole responsibility of the IT Audit wing.

4. Classification of the IT Audits

The IT Audit wing would suggest classification of the IT Audit material as Performance Audit or Transaction audit while forwarding the same to the functional wings. However, the functional wings may take the final decision.

5. Information to the functional wing of the Workshops

The functional wings would be informed of the workshops being held, well in advance. It would be desirable that the functional wings participate in the workshops.

6. Dates of submission of the IT Audit reviews

The schedule of dispatch of the draft IT Audits from the field offices will be synchronized with that of the concerned Report of the respective functional wings so that undue delays are not experienced. The dates of submission of IT audits would mean the date of submission of the IT Audit paras/reviews to the functional wing by the IT Audit wing for being included in the Bond copy. However, IT Audit wing shall on receipt of bond copy dates from all the functional wings work out the detailed schedule of submission and intimate to the field offices and the functional wing.

Sd/-
(M.S. Shekhawat)
Deputy Comptroller and Auditor General (LB/AEC)

U.O No. IT Audit/2005-06/Policy dated 22.03.2006

GLOSSARY OF ABBREVIATIONS

AITATI	Accelerated IT Audit Training Initiative
AMS	Audit Management System
CAAT	Computer Assisted Audit Techniques
CMC	Computer Maintenance Corporation Ltd.
CoBIT	Control Objective for Information and Related Technologies
Dir. (IS)	Director (Information Systems)
EDP	Electronic Data Processing
GPF	General Provident Fund
IDEA	Interactive Data Extraction and Analysis
ISACA	Information Systems Audit and Control Association
MAB	Member, Audit Board
OSD	Officer on Special Duty
OSS	Open Source Software
PSUs	Public Sector Undertakings
Report (SCS)	Report (Special Category States)
RTI	Regional Training Institute
SQL	Structured Query Language
TCO	Total Cost of Operation
URS	Users Requirement specifications
VFM	Value for Money
VLC	Voucher Level Computerisation
WFAP	Work Flow Automation Project