

# APPENDIX C

## Computer-Assisted Auditing Techniques (CAATs)

### C.1. Introduction

#### The concept

Computer-assisted auditing techniques (CAATs) are powerful tools that can be used to perform different audit procedures. With the use of a CAAT, the auditor can, for example:

- (a) perform various calculations on the data;
- (b) perform various analytical procedures;
- (c) identify unusual items, duplicate items, or missing items;
- (d) compare data in one file to the equivalent data in another file; and
- (e) determine a sample size, select the sample and evaluate the sample results.

To help the auditor analyse the data, most CAATs enable an auditor to:

- (a) list transactions in chronological order, or in increasing/decreasing order of magnitude;
- (b) group transactions according to various criteria, such as those with the same date or the same supplier or customer number;
- (c) search for fields with values greater than a reasonable amount;
- (d) calculate aggregate figures for a particular period; and
- (e) conduct various calculations on the data, such as the average payment amount for the acquisition for a particular service or product.

With CAATs many of these procedures can be done almost instantaneously. If performed manually, the equivalent work could consume considerable audit effort.

These procedures can be performed on all types of audits, such as financial audits, compliance with authority audits, performance audits, and reviews of internal control structures. In particular, CAATs are a logical method for performing audits of Information Technology (IT) systems.

The auditor needs to specify the procedures to be performed. After running the CAATs procedures, the auditor follows up the results and obtains explanations for any anomalies found.

This annex provides a summary of the steps performed when using CAATs.

## **C.2. Steps to using CAATs**

### **Introduction**

There are basically seven steps involved:

- (a) Determine objectives;
- (b) Determine scope;
- (c) Understand the operating system;
- (d) Understand the characteristics of the data;
- (e) Access the data;
- (f) Apply the CAAT; and
- (g) Follow up the results.

Each is discussed in turn below.

### **Determine objectives**

Although often the use of a CAAT tool involves some degree of exploration, the auditor should define, up front, what he/she hopes to achieve through the use of the CAAT.

In the case of a financial audit, the specific objective that the auditor determines should relate to a specific financial audit objective or a related compliance with authority objective.

Some examples of specific objectives are:

- (h) Match quantities and unit costs on supplier invoices with equivalent amounts on purchase orders and/or contracts to obtain assurance that the expenditures are valid and that they have been properly authorised;
- (i) Look for duplicate cheque numbers to obtain assurance that all payments are valid and have been properly authorised;
- (j) Look for two invoices from the same supplier at approximately the same time and/or two cheques to the same supplier at approximately the same time to check for split invoices/payments, which might indicate evasion of approval limits; and
- (k) Compare expenditures against the appropriation to identify expenditures in excess of the authorised amount.

### **Determine audit scope**

The auditor has to decide what audit coverage is required. The auditor may decide to examine the total database, or restrict the examination to particular areas or functions within the organisation.

Further, the auditor has to decide what periods to examine. The auditor may decide to examine the current year, or to go back three or four years. If the auditor wishes to determine if there is

some pattern to the expenditure or revenue, the auditor may want to take discrete periods and compare them with other periods.

### **Understanding the operating system**

The auditor should develop a clear understanding of each computer system to be examined. This understanding should include:

- (l) The processing procedures and practices;
- (m) The specific internal controls for the operating system, and the tests of internal control needed to determine whether the controls are working properly; and
- (n) Security and other environmental considerations, such as access controls and back-up procedures.

The auditor would probably want to build into his/her review of the internal control structure the understanding of the operating system that is required to perform the CAAT. This would include, for example, ensuring that:

- (o) Any flow charts, questionnaires or narratives that are being used to review the internal control structure deal with the operating system on which the CAAT is to be applied; and
- (p) The tests of internal controls will identify any internal control weaknesses in the operating system that could affect the CAAT.

### **Understand the characteristics of the data**

The auditor should examine documentation about the data. The documentation should include:

- (q) The characteristics of the files, records, and data fields;
- (r) The processing logic built into the software; and
- (s) Any anomalies, such as changes to the database, gaps in the continuity of the data, coding problems or changes in definitions.

The auditor may decide to test some of these characteristics using the CAAT tool itself. For example, the auditor may test for any records containing a coding structure that is not defined in the chart of accounts.

### **Access the data**

The auditor may require assistance in obtaining access to the data. The auditor must be satisfied that the data examined is valid and complete. The auditor may use current data or data from a specific prior time period.

The CAAT may be applied on live data or, alternatively, a copy of the data may be made on which the CAAT is applied off-line.

When the CAAT is applied on live data, the auditor must ensure that the CAAT has full access to all data and is not subject to any access controls.

When the CAAT is operated on a copy of the data, the auditor should conduct various tests to determine the number of records, file totals, etc. in the live data, and compare those to the number of records, file totals, etc. in the file provided for the CAAT.

Also, the auditor should ensure that the records contained in the file provided for his/her CAAT are for the period under examination. The auditor should perform a test to determine if any transactions included in his/her database took place outside the period under examination.

### **Apply the CAAT**

Most software packages are capable of automatically determining the record layout of the data file. If the package being used is not capable of doing this, the auditor will be required to determine the record layout and tell the software how to read the data in the file.

The auditor should perform tests to confirm that the specific internal controls on which he/she intends to rely are working properly. For example if the system is meant to have data entry controls such as not accepting a record unless there is a monetary value in a particular field, the auditor can test to see if any records exist that violate that requirement.

Also, the auditor may wish to test the built-in formulae that are used to automatically perform calculations.

### **Follow up the results**

The auditor has to decide which anomalies and other transactions identified by the tests should be followed up.

Normally, all items listed for follow up should be examined. In some cases, though, the auditor may check a few items and discover an underlying cause. The auditor may then conclude that it is not necessary to test all of the other items that could have been caused by the same factor.

Explanations for the items discovered may be a systemic problem or may be due to an individual error. Explanations may be discovered very easily and quickly, or may consume extensive audit effort.

The auditor needs to apply professional judgment when determining how much audit effort should be applied to follow up the anomalies.