

Anmerkung

Bei dem vorliegenden Dokument handelt es sich um eine **inoffizielle und nicht amtliche Übersetzung** der "Grundsätze ordnungsmäßiger DV-gestützter Buchführungssysteme (GoBS)" der Arbeitsgemeinschaft für wirtschaftliche Verwaltung e.V. (AWV) sowie des dazu ergangenen Begleitschreibens des Bundesministers der Finanzen vom 07.11.1995, die wir **für interne Zwecke** angefertigt haben (Quelle: BStBl I 1995, S. 738 ff.).

Federal Tax Gazette 1995 Part I, p. 0738
Generally Accepted Accounting Principles in
Computer-Assisted Accounting Systems (GAAP-CAAS)

German Tax Code 1977 (Abgabenordnung)

November 7, 1995

German Federal Ministry of Finance

IV A 8 - S 0316 - 52/95

Highest Tax Authorities of the Länder (the individual States of the German Federal Republic)

copy:

Representation of the Länder at the Bund

Generally Accepted Accounting Principles in
Computer-Assisted Accounting Systems (GAAP-CAAS)

TOP 7, meeting Bp II/95;

my letter of July 28, 1995 - IV A 8 - S 0316 - 43/95 -

1 Annex (GAAP-CAAS)

The attached Generally Accepted Accounting Principles in Computer-Assisted Accounting Systems ("GAAP-CAAS") have been drawn up by the Arbeitsgemeinschaft für wirtschaftliche Verwaltung (Business Administration Study Group) in Eschborn. With reference to the outcome of the discussions with the highest tax authorities of the Länder, these Principles are to be applied in accordance with the following:

I. Application (GAAP-CAAS, Part 1)

- a) Under section 148(5) of the German Tax Code 1977 (Abgabenordnung, or AO), the books and other necessary records required to be maintained by tax regulations may be maintained on data storage media provided that this form of book-keeping, including the procedures employed, is in conformity with the accounting principles generally accepted in Germany ("GAAP"); when certain conditions are satisfied, section 147(2) Tax Code allows documents to be kept on data storage media. Besides microfiche and microfilm, machine-readable media may be used for this purpose (e.g. diskettes, magnetic tapes, magnetic disks or electro-optical disks).
- b) Basically, the acceptability of a computer-assisted accounting system is judged according to the same principles as a manual system. The GAAP are the criterion for the acceptability of the accounting, and the purpose of the GAAP-CAAS is to define the GAAP more precisely for application to computer-assisted accounting systems. In addition to the GAAP embodied in commercial law (see, in particular, sections 238, 239, 257 and 261 Commercial Code), the accounting must also be in conformity with sections 145 through 147 Tax Code. The most important GAAP are set out in Regulation 29 of the Income Tax Regulations 1993 (Einkommensteuerrichtlinien).
- c) The application of the GAAP-CAAS is not restricted to conventional database accounting systems. They must also be applied, as the context requires, to COM and similar systems (such as COLD), and to document management systems.

II. Voucher, journal and account functions (GAAP-CAAS, Part 2)

- a) The requirement that it must be possible to trace transactions both forwards and backwards through the system must be satisfied by computer-assisted accounting systems as well.

Forward tracing starts with the voucher, follows it through the day book to the accounts, and on to the balance sheet or statement of income, and tax return. Backward tracing is the reverse procedure.

For the voucher function to be performed, therefore, the voucher must contain information on the account coding, the sorting criterion for filing purposes, and the posting date. The sequence in which the postings are made must be documented.

The proper operation of the respective system must be verifiable. Evidence of the performance of the controls provided in the respective procedures is to be produced, inter alia, by means of program logs and the system documentation (see IV. below).

- b) The data processing procedures used must assure that all data entered into the data processing system are properly registered and cannot be suppressed [section 146(4) Tax Code].
- c) Where accounting entries have been accumulated and posted to accounts in total only, breakdowns of these totals must show the individual items in a clear and comprehensible manner. For the posting of such totals to be acceptable, it must be possible to show the individual items of which they are made up.

Section 147(5) Tax Code requires the entity, at the tax authority's request, to provide without delay complete or partial printouts of stored information or reproductions that are readable without further aids (see VIII. below).

III. Postings (GAAP-CAAS, Part 3)

It is not permitted to alter a posting after it has been made. A valid and verifiable change to a posting may be made by cancelling and reposting it. Once a posting has been made, therefore, there is neither a need nor a requirement for further alteration. If, exceptionally, a posting is altered, the provisions of section 146(4) Tax Code must be complied with.

IV. Internal control system (GAAP-CAAS, Part 4)

The internal control system is only one of many criteria for the acceptability of a computer-assisted accounting system. The internal control system alone does not indicate that a computer-assisted accounting system is acceptable.

The description of the internal control system is an integral part of the system documentation (see VI. below). The entity is not free to choose what description it considers necessary.

The audit should include compliance testing of the controls and safeguards provided. In this way, audit areas can be narrowed down or treated as taken care of (combined compliance and substantive testing). However, the examination of the internal control system should not be planned as a formal examination in the context of the GAAP.

V. Data security (GAAP-CAAS, Part 5)

Besides the "information" already mentioned it is necessary to safeguard and protect changes to tables and master data. The backup of these items is just as important as the backup of other program and master data.

With regard to the steps to be taken by the entity to assure that its sensitive information is not accessible to unauthorized persons, this does not mean that such information need not be disclosed during a tax audit.

The object of the data security measures is to avoid the risk of loss, destruction or theft of the backed up programs and data. The risk of loss is to be eliminated by systematic documentation of the backed up programs and data. The risk of destruction of the data media is to be avoided by keeping them in a suitable place.

VI. Documentation and auditability (GAAP-CAAS, Part 6)

- a) For each computer-assisted accounting system a documentation must be prepared (system documentation).

Section 6.2 of the GAAP-CAAS indicates areas that "in particular" must be covered by the documentation. This is done merely to give an indication of the scope of the documentation; it is not intended to be an exhaustive list of all retainable parts of the documentation. A documentation must contain whatever is necessary for an understanding of the accounting system to which it relates.

- b) The documentation must also include a description of the possible modifications to system parameters that the end-user is allowed to initiate within the programs. The description of the variable user-defined tasks is part of the application handling description.
- c) The description of the software must also include the length of time a table is regarded as valid.

As evidence of program identity the program log is required (i.e. the conversion list, etc.). As part of the documentation, this log usually provides the only exact evidence of the content of the program actually used (reference: section 147[1] no. 1 Tax Code).

VII. Retention periods (GAAP-CAAS, Part 7)

The retention periods referred to in Chapter 7 of the GAAP-CAAS may be extended by the rule in section 147(3) sentence 2 Tax Code. An administrative regulation dealing with the application of this rule has been issued (Federal Tax Gazette 1977, Part I, p. 487).

VIII. Reproduction in readable form of the records stored on data media (GAAP-CAAS, Part 8)

- a) An entity able to produce retainable information only in the form of a reproduction on data storage media must provide at its own expense the aids that are necessary to make the information readable; at the tax authority's request, the entity must provide complete or partial printouts of stored information, or readable reproductions; this must be done without delay and at the entity's own expense (see II. above).
- b) Section 147(2) Tax Code does not prescribe the technique to be used for archiving documents on digital data media. This is intentional. This means that, except for annual financial statements and the opening balance sheet, retainable documents may be stored and archived on digital data media ("other" data media, as referred to in Section 147(2) Tax Code).

Basically, there are two different ways of doing this:

1. By storing analog documents (paper documents).

Analog documents are scanned and then archived on digital data media. For this scanning process detailed organizational instructions are necessary, which must define

- who is allowed to scan,
- when scanning is to be done,
- what documents are to be scanned,
- whether a true visual reproduction in accordance with the original is required, or whether it is sufficient for the content to be the same (reference: section 147(1) no. 2 or 3 Tax Code),
- how quality is assured, as regards readability and completeness, and
- how error logging is done.

The digital document created by the scanning must be assigned an unchangeable index. Hardware and software must assure that the result of the scanning cannot be modified.

Once a document has been scanned, further processing may be done only with the stored voucher (e.g. posting reference).

2. By storing original digital documents.

Original digital documents are archived on digital media by transmitting content and formatting data.

When original digital documents are transmitted to another data medium the hardware and software must assure that further processing of these data is not possible during the transmission. Indexing must be done in the same way as for scanned documents.

It must be assured that the digital document archived in this manner can be processed and managed only using the index assigned to it. The steps involved in the processing must be documented and the relevant data stored together with the document. The processed document must be identified as a "copy".

It must be assured that the stored documents are capable of being reproduced (i.e. made readable) at any time during the entire retention period (see VII. above).

- c) In the case of certain documents stored on data media, steps must be taken to assure that the reproduction is a true visual reproduction according to the original (section 147[2] no. 1 Tax Code). Where color fulfills the function of evidence, the reproduction must be complete with all colors.

Where an entity chooses not to have conventional vouchers, the possibility of examining postings for formal and factual correctness may not be impaired by this choice. It must be assured that the link between index, digital document and data medium is maintained throughout the retention period.

In addition to the above, original documents may be destroyed only where there are no other regulations requiring the originals to be retained.

This letter supersedes my letter of July 5, 1978 - IV A 7 - S 0316 - 7/78 - (Federal Tax Gazette Part I, p. 250).

IX. In all other respects, the rules in the letter of February 1, 1984, from the Federal Ministry of Finance (Federal Tax Gazette 1984 Part I, p. 155) remain unaffected.

This letter (together with the annex) will be published in the Tax Code "Kartei".

By order,

Rendels

Annex

to the letter from the Federal Ministry of Finance

of November 7, 1995

IV A 8 - S 0316 - 52/95

Generally Accepted Accounting Principles in Computer-Assisted Accounting Systems (GAAP-CAAS)

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Introduction

Computer-assisted accounting systems give rise to a number of questions concerning conformity with the accounting principles generally accepted in Germany ("GAAP"). The Principles set out below provide answers to these questions.

Since the first publication in 1978 of the 'Generally Accepted Accounting Principles in Database Accounting Systems' ("GAAP Database") much progress has been made in data processing technology and applications, and this has led to changes in the accounting area and accounting workflows.

The GAAP Database, as first drawn up, were concerned with plain database accounting systems in which postings were stored on machine-readable data media and intended to be made readable for certain purposes only. However, there was soon a consensus of opinion, as there is today, that the GAAP Database should be a more precise definition of GAAP applicable to **all** computer-assisted systems and procedures related to the accounting function. To adapt the GAAP Database to the information systems presently installed in business undertakings, and those that will be installed in future, they have therefore been revised, and renamed "**Generally Accepted Accounting Principles in Computer-Assisted Accounting Systems**" ("GAAP-CAAS").

Developments in data processing in recent years have also brought about a change in the approach to computer-assisted accounting systems. A point of material importance in this regard is that it is now not always as easy as it used to be to say exactly where the boundaries of the book-keeping function lie. Integrated data processing systems can feed "accounting data" generated by processes taking place outside the "book-keeping" department straight into the accounting system. This can happen, for instance, where production data collection and data transmission (e.g. electronic data interchange, or "EDI") are practised. Techniques such as these can thus come to perform voucher functions, with the consequence that they, too, must be measured against the yardstick of GAAP, and hence GAAP-CAAS. From the "voucher function" concept described in Chapter 2 below it will be clear that the accounting function can be integrated to a greater extent than before into computer-assisted processes that would not immediately be regarded as forming part of the computer-assisted accounting system. It is thus now appropriate to speak of "**computer-assisted accounting systems**" rather than "EDP book-keeping".

The GAAP-CAAS include requirements to be met by the controls, rules and measures to be provided and implemented by the entity if it is to conform with GAAP when it employs data processing. It was therefore necessary for GAAP-CAAS to deal with the **internal control system**. One of the objects of the internal control system is to secure as far as possible the acceptability of the accounting system by providing organizational control mechanisms, such as functional segregation and reconciliation controls.

Modern methods and tools for program production and maintenance, and the program documentation gained from them, can lead to further forms of documentation hitherto unknown. This document gives recognition to this development, as it also does, for instance, to the question of how program identity is achieved and unauthorized access prevented.

1. Application

1.0 The statutory basis for accounting systems in which books are kept on data storage media (computer-assisted accounting systems) is to be found in the Commercial Code (*Handelsgesetzbuch*, or *HGB*) and the Tax Code (*Abgabenordnung*, or *AO*). Sections 239(4) Commercial Code and 146(5) Tax Code provide that business books (the Commercial Code term), or books (in Tax Code parlance), and the other necessary records, may consist in the orderly filing of vouchers or be maintained on data storage media, provided that these forms of book-keeping, including the methods employed, are in conformity with GAAP.

GAAP-CAAS do not supersede GAAP; they merely define the latter more precisely for application to computer-assisted accounting systems, and describe the steps the entity must take to assure that it makes the postings, and keeps the other necessary records, completely and accurately, in an orderly manner and on a timely basis. Responsibility for conformity with GAAP lies always with the entity, whether the accounting system is computer-assisted or not.

1.1 In the following, the term "**computer-assisted accounting system**" is used to describe an accounting system in which the books are kept - in whole or in part, temporarily or as a permanent arrangement - with the aid of hardware and software on data storage media. An entity using such a system must assure that the books, vouchers and other necessary records can be made available in readable form at any time throughout the period of their storage on data media. Data storage media include magnetic media and, in particular, electro-optical media. As the use of COM technology to produce microfilm is an integrated continuation of the data processing, this process is similarly required to be in conformity with GAAP.

In a computer-assisted accounting system consideration must also be given to processes taking place outside the actual book-keeping area, where such processes involve the entering, generating, processing and / or transmission of accounting-related data.

1.2 A computer-assisted accounting system, like any other accounting system, must be in conformity with GAAP, in particular with the acceptability criteria of sections 238, 239 and 257 Commercial Code and 145 and 146 Tax Code. The principal consequences of this are as follows:

- The recordable transactions must be recorded correctly and completely, on a timely basis and in an orderly manner, and must be capable of being traced through the processing from their origin (the voucher and journal functions must thus be performed).
- The transactions must be processed in such a way that they can be presented in an orderly manner and an overview of the financial position and results of operations is assured (the account function must thus be performed).
- The postings must be capable of being presented individually and arranged by account, and the accounts must be capable of being shown updated by account totals or balances, and arranged by balance sheet or income statement caption, and postings and accounts must be capable of being made readable at all times.

- The respective accounting system must be capable of being understood by a competent third party within a reasonable space of time, and must be capable of providing him with an overview of the entity's business transactions and position.
- The procedures employed in the computer-assisted accounting system must be described in a system documentation in such a way that they can be understood and followed. The documentation must describe both the currently-used procedures and those previously in use.
- Steps must be taken to assure that the system described in the documentation is the same in every respect as the program (version) actually used (i.e. program identity must be assured).

2. Voucher, journal and account functions

2.1 The principle

An accounting system must provide evidence that all recordable transactions have been recorded, **and the evidence must show what was posted and when**. This principle applies whether the accounting system is computer-assisted or not.

To assure that each recordable transaction is **traceable** the entity must arrange for voucher, journal and account functions to be performed by the accounting system.

The connection between the underlying transaction and its posting, or the processing of its data, must be shown by a sufficiently informative **system documentation, supplemented by evidence that the system operates in accordance with the documentation** (see Chapter 6 "Documentation and Auditability"). With the aid of the system documentation the entity must assure that the voucher, journal and account functions are performed by the system with respect to every single transaction, to make it possible for a competent third party to obtain sufficiently certain, clear and understandable evidence of the transactions and their processing within a reasonable space of time.

2.2 The voucher function

- 2.2.1 The voucher function is the basis of the evidential value of an accounting system. It provides auditable evidence of the connection between (i) the external and internal recordable transactions, as they actually took place, and (ii) the transaction content posted to the books of account. The voucher function must, of course, be performed for the postings whether the accounting system is computer-assisted or not.
- 2.2.2 Dealings with customers, suppliers, banks, insurance companies, public authorities, etc. give rise to **external** recordable transactions affecting the entity's financial position, profit or loss and liquidity.
- 2.2.3 Recordable events arising from entity-internal processes or serving to allocate items to the accounting period or periods to which they relate, are **internal** transactions.
- 2.2.4 In a computer-assisted accounting system, the voucher function may be performed in a variety of ways. This is because postings in such systems may be initiated not only by existing conventional paper documents but also, increasingly, by automatic data collection (production data collection, for instance), by program-internal routines and by the exchange of machine-readable data storage media or data transmission via telecommunication lines (EDI, for example).
- 2.2.5 Regardless of how the voucher function is performed, the following **information** on the posting must be available:
 - an adequate explanation of the transaction,
 - the amount to be posted, or quantities and prices from which this amount can be calculated,
 - the date of the transaction (recording in the proper accounting period), and

- the approval (authorization) of the transaction by an authorized person.
- 2.2.6 It must be assured that conventional vouchers are appropriately prepared for posting. Each item of information to be entered must be clearly identifiable on the voucher.

Preparation of the vouchers for posting is particularly important where they consist of documents originating with outside parties, as the entity normally has no control over the layout or design of the letters and invoices it receives.

- 2.2.7 In contrast to conventionally processed transactions, the voucher function in program-internal postings, postings based on automatic production data collection and EDI-based postings must be performed by the system. Here, the system itself acts as a perpetual voucher.

In these cases the voucher function is performed by the system, when operating properly. To show that this is the case the entity must show that the controls provided for the respective procedures were actually performed; further evidence must be provided by the system documentation (see Chapter 6 "Documentation and Auditability").

The system controls (see Chapter 4 "Internal Control System") must assure that the transactions are complete and correct and have been confirmed (authorized) by the entity or an authorized person acting on its behalf.

2.3 The journal function

- 2.3.1 Evidence of the complete, timely and formally correct recording of the transactions may be provided by **logging** at various stages of the processing (during data entry or incoming data transfer, during the processing, or after the processing). Where the logging is not already done during data entry or incoming data transfer (day books, for instance), but at a later stage of the processing (e.g. machine-internal postings logs), the system must include controls designed to assure the completeness of the transactions from origin up to the point where they are logged.

The logging may be done on paper, microfiche / microfilm or other media (see also Chapter 8 "Reproduction in readable form of the records stored on data media").

- 2.3.2 The evidence (journal function) of the complete, timely and formally correct recording, processing and reproduction of a transaction must be capable of being made available within a reasonable space of time throughout the statutory retention period.

2.4 The account function

For the **account function** to be performed the transactions must be capable of being presented by (general ledger or personal) account.

Where accounting entries are accumulated and posted to general ledger and personal accounts in total only, it must be possible to show the individual items making up these totals.

The accounts may be shown on a screen, on paper, on microfiche / microfilm or on other data media. Where they are shown on a screen or other data media, a reproduction that is readable without further aids must be made available on valid request (see also Chapter 8 "Reproduction in readable form of the records stored on data media").

3. Postings

- 3.1 In a computer-assisted accounting system (batch and / or interactive systems), transactions are **properly posted if they have been recorded and stored completely, in a formally correct manner, on a timely basis, and in such a way that they are capable of being processed and sorted:**

- In a computer-assisted accounting system, the **sortability requirement** means that the voucher and account functions need to be performed. The transactions are not required to be stored according to any specific sorting criterion. The sortability requirement is satisfied if selective access to the stored transactions and / or parts thereof is possible.
 - Steps must be taken to assure that the **postings can be processed**, from their entry into the system and during all further stages. This means that not only the transaction data but also the tables and programs needed for the processing must be stored.
 - **Controls** must assure that **all** transactions are recorded **completely**, and that they cannot be altered after posting without authorization (i.e. without going through the access procedures that must be provided) and without there being a record of the pre-alteration status. Evidence of the controls may be provided in the form of posting logs or some other procedure-dependent form (machine-generated data entry, transmission and processing logs (see also Chapter 4 "Internal Control System").
 - The **formal correctness** of the postings must be assured by recording controls, to assure that all key elements of each posting that are needed for subsequent processing - immediately or later - are present and plausible. In particular, the elements enabling transactions to be sorted chronologically or by (general ledger or personal) account must be stored.
 - For postings to be timely, recording of transactions must be up to date and transactions must be recorded in the correct accounting period.
- 3.2 From the foregoing requirements concerning the timing of the posting it follows that the point in time at which a posting takes place depends on the system and procedure chosen. This point in time must be defined in the system documentation (in the user manual, for instance).

If data are changed after recording but before posting takes place, because they are **obviously wrong**, for example, there is no need for the information originally stored to be ascertainable.

If elements of a posting that has already been made are **altered** (voucher content or coding), the content of the original posting must remain ascertainable, e.g. by keeping a record of the alterations (cancellation and reposting). These alteration records form part of the accounting records and must be retained.

4. Internal control system

- 4.1 The internal control system is the whole **system of co-ordinated and interlinked controls, measures** and arrangements designed to
- safeguard the assets and available information and protect them from loss,
 - enable complete, accurate, informative and up-to-date records to be provided,
 - promote operational efficiency through record evaluation and control, and
 - assist in adhering to established business policies.
- 4.2 In a computer-assisted accounting system, the object of the internal control system must be to assist in assuring that the accounting and the financial statements are in conformity with statutory requirements and the entity's articles and to assist in providing an overview of the entity's economic position.

A material requirement for conformity with GAAP-CAAS is thus the provision of complete, accurate and informative records on a timely basis. The safeguarding and protecting of assets and information against loss of any kind is another aspect that may need to be considered in evaluating conformity with GAAP-CAAS.

- 4.3 For a computer-assisted accounting system to be acceptable, therefore, the internal control system must perform the two functions referred to in 4.2 (provision of records, and protection of assets in the broader sense of the term). Single, isolated controls are quite inadequate here because of the complexity of the entity's procedures and structures. To install an efficient control system it is necessary to proceed systematically and leave no loopholes.
- 4.4 In the light of these two tasks to be performed, the following points must be considered when designing and evaluating an internal control system in a computer-assisted accounting system:
- To assure completeness and correctness, complex and integrated systems require both control procedures that have been designed into the program, and manually performed controls. The computer controls and the manual controls must be co-ordinated.
 - Responsibility for entity-internal functions must be **clearly defined**, observing the principle of functional segregation. Where **functional segregation** is not possible, or would be unreasonably expensive, further appropriate organizational controls will be necessary.
 - Procedures relating to postings, and the sequence in which they are to be performed, must be defined.
 - Manual and computer control procedures that have been performed must be documented (reconciliation and plausibility controls, system release procedures).

It should be noted that **manual controls** can be circumvented, or may not be performed with the necessary care. **Generally**, therefore, it is necessary to **check that they have been carried out**. **Computer controls** are controls that have been designed into a program to prevent the processing of implausible and incomplete data. They may be installed at operating system level, at operating system integrated software level or at application program level.

- A properly functioning internal control system must also assure program identity, i.e. it must be verified for each accounting period that the computer-assisted accounting system used was in fact identical to the system described in the documentation (see also 6.2.3).

Program identity must be assured regardless of the nature of the computer system employed (whether mainframe or stand-alone PC).

An important prerequisite for the assurance of program identity is the existence of up-to-date, individually tailored, co-ordinated

rules on

- programming
- program testing
- program release
- program modifications
- alterations to master data and tables
- the authorization of access to data and rooms and
- the proper use of databases, operating systems and networks

the use of test data files and systems

controls over the use of programs.

In accordance with the general transparency, controllability and reliability standards to be met by the computer processing system used by the entity there must be assurance that each program

used for production purposes is used for the right purpose and after proper authorization. The program version in use at any time must be ascertainable and documented.

- 4.5 The internal control system must be described; here, particular importance must be attached to the "interfaces" between man and computer.

The description of the internal control system is an integral part of the system documentation, to the extent it is needed for an understanding of the computer-assisted accounting system (see Chapter 6).

5. Data security

- 5.1 The high degree of dependence of the entity on its stored information makes a highly developed data security concept indispensable for compliance with GAAP-CAAS. It must be clearly realized that data security can be achieved and maintained only if the entity knows what is to be safeguarded and protected, for how long, against what eventualities, and how this is to be done.

- 5.2 Besides the information relevant to the accounting which is stored on data media, the entity must also safeguard and protect other information where it is in its own interests to do so, or this is required by other statutes.

In this context, "information" means software (operating system and application programs), tables and master data, movement data (e.g. transaction data) as well as the other records.

Documents and other records retained by the entity in conventional (paper) form must also be safeguarded and protected.

- 5.3 This information must be safeguarded against loss and protected against unauthorized alteration. In addition to the GAAP-CAAS requirements, steps must be taken to assure that the entity's sensitive information is not accessible to unauthorized persons.

- 5.4 Information relevant to the accounting must be safeguarded and protected for at least the duration of the statutory retention period (see Chapter 7 "Retention Periods"). The entity must decide what information, if any, it wishes to retain for a longer period, for reasons of its own.

Information of relevance to the accounting must be capable of being presented in readable form at all times during the prescribed retention period. To enable the entity to comply with this requirement it must assure the availability of the hardware, as well as the data and the software. The "data" security concept must therefore also provide for the safeguarding of the computer installations (hardware and data transmission lines, etc.).

- 5.5 How a particular entity is going to achieve and maintain the necessary data security will depend on the technical situation and the possibilities to which it gives rise.

- 5.5.1 Protection of the information against unauthorized alteration must be assured by effective access control. This includes control over access to data and programs, which must be designed in such a way that such access is restricted to authorized persons and to the extent that these persons require such access for the performance of their duties. It also includes control over access to rooms in which data media are kept; these access control procedures must prevent access to data media by unauthorized persons, and must, in particular, apply to the separate rooms in which data backup media are stored.

- 5.5.2 Safeguarding the information against loss necessitates, as a first step, the performance of backup procedures for the programs and data maintained on the computer system. Binding instructions must be given for the performance of data backup procedures. It is expedient to schedule periodic backups, and to supplement these by ad hoc backups if alterations to or processing of programs and / or data between two regular backups has been unusually intensive. Additional backup

copies should be made of retainable and other sensitive data and programs, and these copies should be stored in a different place (different security area).

The second step involved in safeguarding the information against loss comprises the measures designed to achieve the necessary reduction in the risk of the backed-up programs and data files being unlocatable, destroyed or stolen.

The risk of unlocatability must be reduced by maintaining a systematic register of the backed-up programs and data files. This register must show, for each single data medium, its location, contents, date when the backup was performed and the earliest date on which the contents may be erased.

The risk of destruction must be reduced by organizing the retention locations in such a way as to rule out as far as possible the destruction or impairment of the backed-up information by fire, temperature, humidity or magnetic fields, etc.

The risk of the data media being stolen must be reduced by storing them in rooms or safes that are kept locked, and are sufficiently burglar-proof.

To assure that data media remain readable when retainable information is stored for long periods, instructions must be given as to how often readability of the data media is to be checked. The length of the intervals between such checks will depend on the storage method used.

- 5.6 How data security is to be achieved will depend on the current state of computer technology. Technological progress will make it necessary for the entity to modify its data security concept in accordance with the latest needs and possibilities.
- 5.7 The entity's data backup concept must be documented. This requirement applies particularly to the data backup methods and procedures (see Chapter 6 "Documentation and Auditability").

6. Documentation and auditability

- 6.0 Like any accounting system, a computer-assisted accounting system must be capable of being audited for formal and factual correctness by a competent third party within a reasonable space of time. This requirement applies both to the auditability of individual transactions (substantive testing) and of the accounting system (system audit). Furthermore, the documentation must show that the system operates in accordance with its description.
- 6.1 The system documentation must enable the reader to obtain a complete picture of the content, structure and operation of the accounting system. In particular, the system documentation must show that the requirements to be satisfied by an acceptable system, as set out in Chapter 1 through 5, are fulfilled.

The layout of the necessary system documentation, and the technique used for maintaining it, can be decided by the entity itself. However, the system documentation must be capable of being understood by a competent third party.

The size of the necessary system documentation will depend on the complexity of the computer-assisted accounting system (on the number and size of the programs, the structure of their interconnections, and the usage of tables, for instance). The requirements to be satisfied by the system documentation are independent of the size and capacity of the hardware used; this means that the appropriate system documentation must be provided, whether the entity uses a mainframe system or a PC system.

Where the entity uses purchased software, the documentation for which was produced by the software manufacturer, responsibility for the completeness of and the information conveyed by the documentation lies with the entity. The entity is thus also responsible for ensuring that in case of need, those parts of the documentation can be inspected that were not given to it.

- 6.2 The system documentation must contain, in particular,
- a description of the application handling solution,
 - a description of the program-technical solution,
 - a description of the manner in which program identity is assured,
 - a description of the manner in which data integrity is assured, and
 - operating procedures for the user.

From each of the foregoing descriptions it must be possible for the reader to see the extent of the internal control system and how it operates.

- 6.2.1 The application handling description sets out the task to be accomplished as seen by the user.

In particular, it must contain the following points:

- a general description of the task,
- a description of the user interfaces for input and output, including the manual steps to be performed,
- a description of the data files,
- a description of the processing rules,
- a description of the data exchange (data media exchange / data transfer),
- a description of the computer controls and the manual controls,
- a description of the error messages and the action to be taken when errors occur,
- tables of data keys,
- interfaces with other systems.

- 6.2.2 The description of the software must show where and how the application handling requirements are met by the program. Tables that can affect the functions within the program must be treated like programs.

Program modifications must be shown in the system documentation. Where program modifications are not documented automatically, additional steps must be taken to assure that the old and new status of a modified program are ascertainable. Alterations to tables with program function must be documented in such a way that the contents of a table at any given time are ascertainable throughout the retention period.

- 6.2.3 In the description of how program identity is assured, the entity must show that the application handling requirements are or were performed by the programs used. This must include a precise description of the release procedure, containing rules on authority to release programs, and of the test runs to be performed and the data to be used for those runs, and instructions on program usage controls.

The most important part of the proof of program identity is the release statement, in conjunction with the test data files. The release statement must show what program version is intended to be used for production purposes from what date.

- 6.2.4 The description of the steps taken to assure data integrity must cover all arrangements intended to make it impossible for data and programs to be modified by unauthorized persons. It must include a description of the procedure for authorizing access and evidence to show that access authorizations have been granted properly and are appropriate.

- 6.2.5 The operating procedures that must be available for the user to enable him to perform and complete his tasks properly, also form part of the system documentation, and must be set down in writing. In particular, they must include a description of the manual controls and reconciliations to be performed in the system. Consideration must also be given here to interfaces to other systems running before or after.

7. Retention periods

Generally, data performing voucher functions must be retained for six years, and data and other necessary records performing daybook or account functions for ten years.

The system documentation on the computer-assisted accounting system is one of the operating procedures and other organizational documents referred to in section 257(1) Commercial Code and section 147(1) Tax Code, and must generally be retained for ten years. Parts of the system documentation performing voucher functions only (e.g. the documentation on computer-assisted voucher generation, from which postings result) generally must be retained for six years. The system documentation may be retained on microfiche / microfilm or other data media.

The retention periods for the system documentation begin at the end of the calendar year in which data relating to the accounting were recorded, generated or processed using the respective system.

8. Reproduction in readable form of the records stored on data media

- 8.0 The entity must assure that the stored postings and the operating procedures and other organizational documents necessary for an understanding of the postings can be made readable at all times within a reasonable space of time. The data, programs and machine times and the other aids, such as personnel, screens, reading devices and the like required for this purpose must be made available by the entity. At the request of a third party entitled to make such request (e.g., the fiscal authorities, or external auditors), the entity must make the stored postings **readable within a reasonable space of time**, and produce the operating procedures and other organizational documents necessary for an understanding of the postings, and if so requested, it must supply reproductions that are readable without further aids.

- 8.1 The archiving method used by the entity must assure that the content of the records as reproduced is the same as the content of the records as maintained on machine-readable data media.

Where the reproduction is required to conform visually with the original document - as sections 257 Commercial Code and 147(2) no. 1 Tax Code require for business letters received by the entity, and posting documents, provided they originally existed in visual form - the archiving method used must assure a true visual reproduction in accordance with the original. The requirement of a visual reproduction is satisfied if all significant information on the original is reproduced in such a manner that it is a true visual reproduction in accordance with the original.

- 8.2 The procedures used to reproduce the information maintained on micro-fiche / microfilm or other data media (data output) must be put down in writing by the entity in the form of operating procedures (such as printing instructions, COM instructions, or instructions for interactive on-line selection and display of the stored information on a screen, e.g. where optical storage systems are used).

The operating procedures must contain a description of the sorting principle for the reproductions and rules on the method to be used to determine the completeness and correctness of the reproductions. The reproductions must be capable of being clearly attributed to the entity's accounting function.

It must be possible to verify that the content of selected reproductions is the same as that of the information maintained on machine-readable data media.

9. Responsibility

Responsibility for conformity with GAAP - and hence with GAAP-CAAS- lies solely with the entity, whether the accounting system is computer-assisted or not.

This responsibility embraces the use both of self-made computer-assisted accounting systems and those made by others.

Responsibility for conformity with GAAP and GAAP-CAAS also lies with the entity where it commissions an outside firm to operate the computer-assisted accounting system.