

International Standard 6592

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Information processing — Guidelines for the documentation of computer-based application systems

Traitement de l'information — Principes généraux relatifs à la documentation des systèmes d'application informatisés

First edition — 1985-11-15

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6592 was prepared by Technical Committee ISO/TC 97, *Information processing systems*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Information processing — Guidelines for the documentation of computer-based application systems

1 Scope and field of application

This International Standard establishes guidelines for the documentation of computer-based application systems. It also contains checklists with the aim of supporting effective activities throughout the system life cycle.

The guidelines given in this International Standard have been developed with the aim of

- a) obtaining the necessary commitment of the parties involved with the development of the computer-based application system;
- b) contributing to the production of a well-planned, standardized system documentation;
- c) enabling the successive production of system documentation in parallel with system development.

Well-defined rules for documentation during the process of system development will facilitate

- a) the preparation of the documentation itself;
- b) estimation of the time and resources required for the achievement of a project;
- c) exchange of information between the parties concerned, resulting in
 - selection of attainable objectives for a system;
 - a more complete and well-considered functional design;
- d) making decisions and briefing of personnel during work on system development.

The system documentation produced in accordance with these guidelines

- a) enables the management to exercise control over the development process;
- b) enables users of the system to use it efficiently and correctly;
- c) enables computer operators to schedule and run the system;
- d) aids diagnosis and correction of errors or faults;
- e) provides information about the system as support for system maintenance.

This International Standard does not cover the requirements for documenting the hardware design of a computer-based application system.

2 Principles of documentation

2.1 General considerations

Despite the diversity of applications of computer-based systems, there are fundamental similarities, for example, the obvious feature that a computer is always subject to input, processing and output phases. There should always be a need to establish and justify the resources such as personnel, materials and finance necessary to develop and implement a computer project, however large or small, and to document adequately all aspects of the proposed system.

It is in this context that the guidelines established in this International Standard have been formulated; the aim being to establish a basic framework of documentation that would act as a solid base for any project and enable effective development and implementation through proper progress and control machinery, permitting the development to proceed in a planned and authorized manner.

The application of these recommendations will vary according to the type of system being introduced: as an example, methods of operating might assume greater importance in a process control environment than in, for example, a commercial batch processing system.

A particular document or piece of information may have no relevance to one system and yet be important to another. The checklists given in this International Standard should be used to ensure that, if information is omitted from the documentation, the omission is the result of a positive decision and not an oversight.

The gradual change in the level of detail in the development process may necessitate revision of documentation from earlier stages.

2.2 Types of information

Two basic types of information are identified in this International Standard, i.e. administrative and technical.

Administrative information is project control and management information which records what has been authorized and what has been done. This information should be retained but it may not be necessary to update it once implementation is complete.

ISO 6592-1985 (E)

Technical information includes an up-to-date description of all aspects of the system, including hardware, software, and data. It is essential that it is constantly updated during the system life cycle.

Both types of information may be included in some documents, but these guidelines recommend that they be kept in separate sections so that the technical information may be more easily maintained.

2.3 Relationship between project stages and documentation

The guidelines given in this International Standard are structured to relate project development stages to the documentation which they generate. Generally, each stage is initiated and concluded by a document. Although the main stages take place in sequence, some stages and the preparation of some documents overlap each other, for example preparation of system support manuals should be started during the system design and development stage. The number of stages and the number of documents may vary for different applications; these guidelines list the elements of documentation which would usually appear in the documents generated by each stage of the development process.

3 Feasibility study

3.1 Objectives

The objectives of the feasibility study are

- a) to identify exactly what is needed following a preliminary study;
- b) to work out possible solutions and identify a preferred solution;
- c) to document the requirements and constraints for the new system.

3.2 Feasibility study request

This document authorizes the use of resources to investigate a specific requirement, design aim or problem and to suggest a possible solution. It is produced by or for the user before work commences on the project.

Preparation of this document may entail the assistance of a specialist in determining, for example, the time and cost targets for the feasibility study.

Authorization of this feasibility study request leads to a feasibility study and the writing of a feasibility study report.

3.3 Feasibility study report

3.3.1 Objective

The feasibility study report should enable the user to decide whether or not to continue to the next stage of system design.

3.3.2 System problem and information analysis:

- a) system problems:
 - 1) definition, including background and present situation;
 - 2) constraints, technical and financial;
- b) system objectives:
 - 1) definition and description;
 - 2) delimitation;
 - 3) summary;
- c) system information:
 - 1) definition and description;
 - 2) relations;
 - 3) specifications;
- d) system processing:
 - 1) description;
 - 2) input, stored data, and output;
 - 3) relations between data;
 - 4) periodicity;
 - 5) volume of data.

3.3.3 Project organization and requirements:

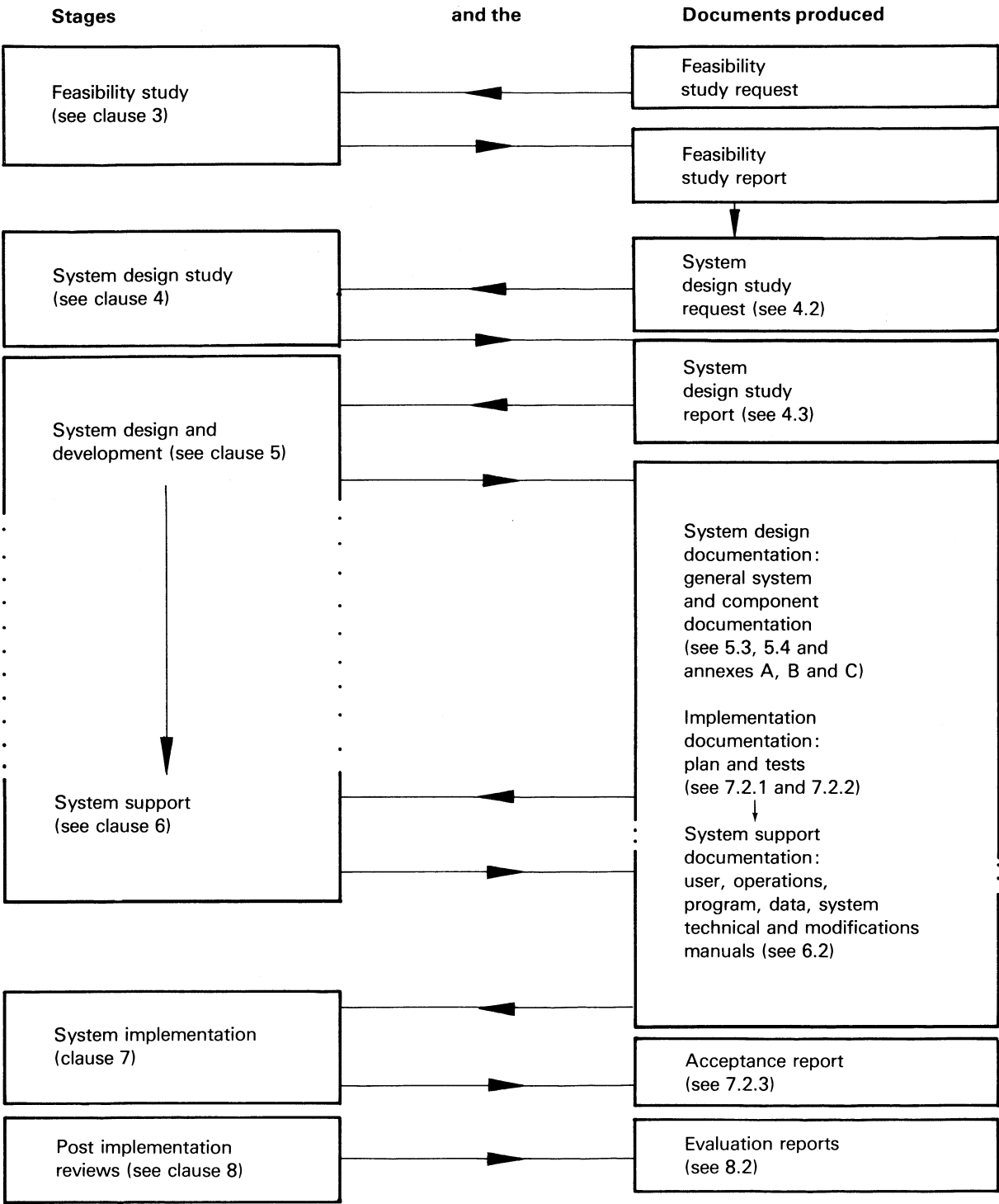
- a) staff requirements;
- b) training and education;
- c) timetable of main activities;
- d) manpower;
- e) hardware;
- f) software;
- g) accommodation.

3.3.4 Costs and benefits:

- a) financial costs;
- b) benefits.

3.3.5 Proposed system:

- a) functional description;
- b) controls to ensure accuracy;
- c) security;
- d) interfaces;
- e) data flow;



* Alternative starting points in cases where a separate feasibility study is not required.

Figure – Summary of the relationship between project development

ISO 6592-1985 (E)

- f) allowance for growth: volume of data, new functions;
- g) scheduling/timing;
- h) non-computer functions;
- j) manpower;
- k) hardware;
- m) software;
- n) accomodation.

3.3.6 Implementation, quality and acceptance considerations:

- a) system testing;
- b) file creation/conversion;
- c) integration with existing systems;
- d) user education and training;
- e) emulation;
- f) proposed changeover methods;
- g) modifications to service;
- h) quality assurance requirements;
- j) product liability requirements;
- k) system acceptance criteria.

3.3.7 Support facilities:

- a) recovery from failure;
- b) maintenance;
- c) availability of spares.

3.3.8 Glossary: explanation of new or unusual terms.**3.3.9 Conclusions and recommendations:**

- a) system requirements:
 - 1) needs of the user;
 - 2) how they will be met.
- b) alternatives:
 - 1) describe alternatives considered;
 - 2) state reasons for rejection.

4 System design study**4.1 Objective**

The objective of this stage is to define, in detail, the chosen design.

4.2 System design study request

This document states the action that the initiator requires to be taken after considering the feasibility study report. In its simplest form, it will merely accept the recommendations in this report and authorize the system design study.

4.3 System design study report**4.3.1 Objectives**

The system design study report should be sufficiently detailed in order that

- a) the user has a clear description of what the system will do (input, processing, output information stored, timing, etc.);
- b) the user knows exactly what to do to operate the system;
- c) the organizational changes or adaptations necessary to implement the system and operate it are defined, and can be commenced as separate tasks;
- d) the functional requirements for the system are sufficiently unambiguous for the system design documentation to be worked out in the next phase.

4.3.2 Plans:

- a) organization;
- b) timetable;
- c) major resource requirements;
- d) quality assurance;
- e) standards to be used.

4.3.3 Costs and benefits:

- a) development costs;
- b) installation costs;
- c) training and education costs;
- d) running costs;
- e) benefits, tangible and intangible.

4.3.4 System description:

- a) functional overview of the application of the system;
- b) hardware requirements;
- c) communication requirements, for example terminals, lines, modems, concentrators;
- d) software requirements for languages, data base, operating system, etc.;
- e) data description;