

JIS

JAPANESE INDUSTRIAL STANDARD

**Guidelines for the
Documentation of Computer-
based Application Systems**

JIS X 0126—1987

Translated and Published

by

Japanese Standards Association

Printed in Japan

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Guidelines for the Documentation of
Computer-based Application Systems

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1. Scope

This Japanese Industrial Standard specifies the guidelines for the documentation of computer-based application systems, hereinafter referred to as the "application system". This Standard aims to support effective activities throughout the system life cycle, and can be used for the affirmation of items to be documented.

This Standard does not cover the requirements for documenting the hardware design of an application system.

- (1) Objectives The guidelines given in this Standard have been developed with the aims of
 - (a) defining the necessary commitment of the parties involved with the development of the 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.
- (2) Effect by Documentation The well-defined rules for documentation adopting this guidelines, will facilitate the following items during the process of system development:
 - (2.1) the preparation of the documentation itself;
 - (2.2) estimation of the time and resources required for the achievement of a project;
 - (2.3) exchange of information between the parties concerned, resulting in
 - (a) selection of attainable objectives for a system;
 - (b) a more complete and well-considered functional design;
 - (2.4) making decisions and briefing of personnel during work on system development.
- (3) Effects of Documents The system documentation produced in accordance with these guidelines has the following effects:
 - (a) Manager can exercise control over the development process.

Corresponding International Standard:

ISO 6592-Information processing - Guidelines for the documentation of
computer-based application systems

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- (b) Users of the system can use the system efficiently and correctly.
- (c) Computer operators can lay out schedules and run the system.
- (d) The diagnosis and correction of errors or faults are easily carried out.
- (e) Information about the system as support for system maintenance is provided.

Remark: In applying this Standard, disposition adapted to circumstances as to the following items is permissible according to the type, scale, or form of development of the application system.

- (1) Name of document
- (2) Order of description of items
- (3) Arrangement of items (including omission)
- (4) Time of year and distribution of responsibility for documentation

2. Generals

2.1 Types of Information In this Standard, two basic types of information are identified, i.e. administrative information and technical information. 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.

It is essential that technical information is constantly updated during the system life cycle.

Both types of information may be included in some documents, but this Standard recommends that they be described in separate sections so that the technical information may be more easily maintained.

2.2 Relationship between Project Stages and Documentation This Standard is 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.

3. Feasibility Study

3.1 Objectives The objectives of the feasibility study are

- (1) to identify exactly what is needed following a preliminary study;

- (2) to work out possible solutions and identify a preferred solution;
- (3) to document the requirements and constraints for the new system.

3.2 Feasibility Study Request The feasibility study request authorizes the use of resources to investigate a specific requirement, design aim or problem related to this system and to work out 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 Objectives 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 System problem and information analysis shall be as follows:

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

3.3.3 Project Organization and Requirements Project organization and requirements shall be as follows:

- (1) staff requirements;
- (2) training and education;
- (3) timetable of main activities;
- (4) manpower needed;
- (5) hardware needed;
- (6) software needed;
- (7) other accommodations.

3.3.4 Costs and Benefits Costs and benefits shall be as follows:

- (1) financial costs;
- (2) benefits.

3.3.5 Proposed System Proposed system shall be as follows:

- (1) functional description;
- (2) controls to ensure accuracy;
- (3) security;
- (4) interfaces;
- (5) data flow;
- (6) allowance for growth on volume of data and new functions;
- (7) scheduling and timing;
- (8) non-computer functions;
- (9) manpower needed;
- (10) hardware;
- (11) software;
- (12) other accommodations.

3.3.6 Considerations on Quality and Acceptance The considerations on quality and acceptance shall be as follows:

- (1) system testing;
- (2) file creation and conversion;
- (3) integration with existing systems;

- (4) user education and training;
- (5) emulation;
- (6) proposed changeover methods;
- (7) modifications to service;
- (8) quality assurance requirements;
- (9) product liability requirements;
- (10) system acceptance criteria.

3.3.7 Support Facilities Support facilities shall be as follows:

- (1) recovery from failure;
- (2) maintenance;
- (3) availability of spares.

3.3.8 Glossary Glossary shall be as follows:

- (1) explanation of new and unusual terms.

3.3.9 Conclusions and Recommendations Conclusions and recommendations shall be as follows:

- (1) system requirements:
 - (a) needs of the user;
 - (b) how they will be met.
- (2) alternatives:
 - (a) description and explanation of alternatives considered;
 - (b) 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 The system design study request 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 on the following items:

- (1) clear description of system function (input, processing, output, information stored, timing);
- (2) exact description of system operation;
- (3) formulation of the organizational change or adaptation necessary to implement the system and operate it, and argument in favor of commencing them as separate tasks;
- (4) sufficiently unambiguous description of the functional requirements for working out the system specifications in the next phase.

4.3.2 Plans Plans shall be as follows:

- (1) organization;
- (2) timetable;
- (3) major resource requirements;
- (4) quality assurance;
- (5) standards to be used.

4.3.3 Costs and Benefits Costs and benefits shall be as follows:

- (1) development costs;
- (2) installation costs;
- (3) training and education costs;
- (4) running costs;
- (5) benefits, tangible and intangible.

4.3.4 System Description System description shall be as follows:

- (1) functional overview of the application of the system;
- (2) hardware requirements;
- (3) communication requirements, for example terminals, lines, modems, concentrators;
- (4) software requirements, for example languages, database, operating system;
- (5) data description;
- (6) data flow, including the normal and maximum volume of data;
- (7) allowance for change in data volume;
- (8) controls to ensure the accuracy of the data;

- (9) security and protection, for example system integrity, data protection, physical security, and availability;
- (10) environmental requirements including standby arrangements;
- (11) interfaces with other systems, either existing or proposed;
- (12) scheduling requirements;
- (13) allowance for additional functions;
- (14) non-computer procedures.

4.3.5 Implementation, Quality, and Acceptance Plan Implementation, quality, and acceptance plan shall be as follows:

- (1) user education and training;
- (2) file creation and conversion;
- (3) system testing and performance assessments;
- (4) emulation;
- (5) modifications to service;
- (6) integration with existing systems;
- (7) changeover methods;
- (8) quality assurance requirements;
- (9) extent of product liability;
- (10) system acceptance criteria.

4.3.6 Support Facilities Support facilities shall be as follows:

- (1) recovery from failures;
- (2) responsibility and liability for maintenance;
- (3) availability of parts and usability of alternative system.

4.3.7 Summary of Application System The summary of application system shall be as follows:

- (1) problem definition and solution;
- (2) recommendation;
- (3) system operation;
 - (a) manpower needed;
 - (b) hardware;