

Guide to

Specifying user requirements for a computer-based system

658.71:681.32.02

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Office and Information Standards Committee (IST/-) to Technical Committee IST/15, upon which the following bodies were represented:

- Association of Computer Units in Colleges of Higher Education (ACUCHE)
- British Computer Society Ltd.
- British Telecommunications plc
- Business Equipment Trade Association
- Computing Services Association
- Department of Trade and Industry
 - National Physical Laboratory
- Electricity Supply Industry in England and Wales
- Electronic Engineering Association
- HM Treasury (Central Computer and Telecommunications Agency)
- Institute of Data Processing Management
- Institution of Electrical Engineers
- LAMSAC
- Ministry of Defence
- National Computing Centre Ltd.

This British Standard, having been prepared under the direction of the Office and Information Standards Committee, was published under the authority of the Board of BSI and comes into effect on 31 October 1986

© BSI 03-1999

The following BSI references relate to the work on this standard:
Committee reference IST/15
Draft for comment 85/60355 DC

ISBN 0 580 15371 1

Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
0 Introduction	1
1 Scope	1
2 Structure of user requirements	2
3 Part one of specification of user requirements: summary of user requirements	2
4 Part two of specification of user requirements: detailed description of user requirements	3
5 Evaluation of suppliers' responses	4
Appendix A Introduction to the user requirements	5
Appendix B Environment	5
Appendix C Essential features	6
Appendix D Desirable features	7
Appendix E Time and cost limits	7
Appendix F Information provided to the required system	8
Appendix G Manipulation of the information provided	8
Appendix H Required system output	9
Appendix J Acceptance criteria	10
Appendix K Performance monitoring	10
Appendix L Evaluation of suppliers' responses	11
Publications referred to	Inside back cover

Foreword

This British Standard Guide has been prepared under the direction of the Office and Information Standards Committee.

Computer-based systems¹⁾ have been in increasingly widespread use for several decades, yet despite the extensive experience that has been gained, new systems often fail to meet the requirements of those whom they are intended to serve. In many instances these failures have been found to result from the requirements being inadequately defined at the outset. Potential suppliers of a system, whether they be computer shops, computer manufacturers, computer systems companies or specialist services within the prospective user's organization, cannot be expected to be fully conversant with all aspects of the activities or functions which the system is either to serve or perform. It is therefore essential that the requirements reflect corporate policy, are specified clearly and are in such detail that a potential supplier can easily and quickly appreciate precisely what is needed. The penalties for not providing a logically presented and fully detailed specification of requirements can include, for example, delays, excessive costs, poor performance, inadequate security, even the supply of an almost useless system.

The purpose of this guide is to assist prospective users to avoid these penalties by ensuring that their requirements are clearly, fully and logically specified.

Although the principles of specifying user requirements remain the same, the application of the guide will depend on the type of prospective user (see clause 0).

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

¹⁾ Hereafter "computer-based system(s)" will be referred to as "system(s)".

0 Introduction

Prospective users of systems may be divided into two types.

- a) Those users who will either be purchasing off-the-shelf packages or using a standard bureau service or both.

Prospective users of this type should apply the advice given in the guide firstly to determine what the required system should provide and then to devise a check list of features which, ideally, should be so weighted that, when all the candidate systems have been assessed, an informed decision on purchase can be made.

- b) Those users who will either be purchasing modified packages, enhancements to existing systems, bespoke systems or using bureau services in a non-standard way.

Prospective users of this type should apply the advice given in the guide to establish a specification of user requirements which is appropriate to the required system, for example as follows.

- 1) If the required system is an off-the-shelf package, the specification will need especially to address the modifications required to the standard packages being purchased.
- 2) If the required system is an enhancement to an existing system, the specification will need to address not only the enhancements required but also how they will interface with the existing system.
- 3) If the required system is a bespoke system, the specification will need to address the total system. If it is a bureau service, then the specification will need to address the total service.

The prospective user may be inexperienced in the application of systems and may wish to take advice on changes to current practices which might be enabled by a new system. If the prospective user is unable to provide all the information himself in the necessary form, then he or she²⁾ should evaluate a supplier and employ him to produce the specification of his requirements. The user can then use the check lists given in the appendices to verify that the supplier has covered all the areas.

However, the user needs to be prepared to provide the necessary time to assist the supplier at each stage and to read, discuss and agree the resulting specification of requirements. This approach is in no way a short cut, and the user needs to be even more aware of the effects on his organization that the specified system may have. The prospective user will find it useful to learn from the experience of others who have encountered similar problems. Potential suppliers will usually be pleased to arrange suitable introductions.

Clearly, in cases where more than one prospective user is involved, only one specification of user requirements should be produced, preferably by consensus.

1 Scope

This British Standard guide, which relates to the user requirement stage defined in BS 5515, provides prospective users of computer-based systems with guidance on developing a clear and precise specification of requirements. It does not seek to advise on the establishment of contractual arrangements with suppliers.

The general principles described in this guide are relevant to all specifications of requirements irrespective of the source of supply of the required system. They are relevant to systems which may be based on micro-, mini- or mainframe computers and which may be one or a combination of two or more of the following:

- a) off-the-shelf packages;
- b) packages modified to meet the prospective user's needs;
- c) enhancements to existing systems;
- d) bespoke systems;
- e) bureau services.

Guidance on how to evaluate the supplier's response is also given.

NOTE The titles of publications referred to in this standard are listed on the inside back cover.

²⁾ Hereafter, for convenience, referred to as "he", etc.

2 Structure of user requirements

This guide recommends that the prospective user produce the specification of requirements in two parts, as follows.

Part one: a generalized summary of requirements which will introduce potential suppliers to the prospective user's organization, the nature of the problem and the principal constraints, e.g. time, cost, security, upon any acceptable solution. Guidance on what to include in this summary is given in clause 3.

Part two: a fully detailed and logically presented specification of all the functions the system is required to perform, when and in what sequence. Guidance on the preparation of this detailed specification is given in clause 4.

3 Part one of specification of user requirements: summary of user requirements

3.1 General

The object of producing this summary of user requirements is to give potential suppliers a brief but clear and easy to comprehend introduction to the nature of the required system, the facilities and services required, the user's organization, and the conditions under which the system will be required to function. In preparing the summary, the prospective user should take care to explain local jargon which potential suppliers may not understand.

It is recommended that the summary should include the following sections:

- a) an introduction to the user requirements;
- b) a description of the environment, e.g. office, shop, factory, on board ship, in which the required system needs to operate;
- c) a list of essential features of the required system;
- d) a list of those features which are desirable but which should only be included if they can be provided within stated limits of, for example, time and cost of both delivery and operation;
- e) time and cost limits for obtaining and operating the required system.

3.2 Introduction to the user requirements

The main purpose and scope of the required system should be explained, together with the relationship of the required system to the organization's goals, operational policies and strategies. This section should also specify what supporting facilities and services suppliers will be expected to provide. (See the check list in Appendix A.)

3.3 Environment

It is important that potential suppliers are made fully aware of any peculiarities in the environment, particularly the physical environment, in which the required system will operate. It is also important to describe the extent of any physical changes to which this environment may be subject. (See the check list in Appendix B.)

NOTE Detailed recommendations for the accommodation and operating environment of computer equipment will be given in a forthcoming British Standard, which is currently in preparation.

3.4 Essential features

The prospective user should state clearly what features of the required system are not negotiable in any way (see the check list in Appendix C). It is important to distinguish between those features which are functions of the required system (what it is to do, e.g. produce an invoice) and those which are qualities (how well it does it, e.g. the degree of arithmetical accuracy).

The prospective user should also be aware that the greater the quality of a system then the higher will be the price. Therefore only real essentials should be specified to the supplier. The user may wish to identify the quality areas and features which are important and then assess the supplier on the extent to which he provides them, thus allowing the supplier to propose a cost-effective solution with compromises.

3.5 Desirable features

Those features of the required system which the prospective user would like, but only if obtainable within what he considers to be reasonable limits of, for example, time, cost and security, should be described separately, together with the limits relating to them. In instances where some features are regarded as more desirable than others, an order of priority should be stated. (See Appendix D.)

3.6 Time and cost limits

The prospective user should determine when the required system needs to be available to him and how much he is prepared to pay to obtain and to operate the required system. These factors should be assessed separately for the essential features referred to in 3.4 and the desirable features referred to in 3.5 (see the check list in Appendix E). The prospective user should consider whether time constraints or cost constraints or both should be communicated to potential suppliers at this or a later stage.