

**BRITISH STANDARD**

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**BS EN  
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# **Value management, value analysis, functional analysis vocabulary**

## **Part 1. Value analysis and functional analysis**

ICS 01.040.03; 03.100.99

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## National foreword

This British Standard has been prepared by Technical Committee DS/1 and is the English language version of EN 1325-1 : 1996 *Value management, value analysis, functional analysis vocabulary — Part 1 : Value analysis and functional analysis*, published by the European Committee for Standardization (CEN).

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### Cross-references

Publication referred to	Corresponding British Standard
EN ISO 8402 : 1995	BS EN ISO 8402 : 1995 <i>Quality management and quality assurance — Vocabulary</i>

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EUROPEAN STANDARD  
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Value management, value analysis, functional analysis vocabulary —  
 Part 1. Value analysis and functional analysis

Vocabulaire du management de la valeur, de  
 l'analyse de la valeur et de l'analyse  
 fonctionnelle —  
 Partie 1: Analyse de la valeur et analyse  
 fonctionnelle

Value Management, Wertanalyse, Funktionenanalyse  
 Wörterbuch —  
 Teil 1: Wertanalyse und Funktionenanalyse

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 279, Value management — Value analysis, functional analysis, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 1997, and conflicting national standards shall be withdrawn at the latest by March 1997.

The aim of this standard is to define the main terms of the value management (VM), value analysis (VA), functional analysis (FA) field.

It integrates into the standardization work in this field conducted successively through the prestandardization work supported by the SPRINT programme of the European Commission (EC) and through the standardization work of the CEN/TC 279.

As the standardization work on value management is currently under way, it seemed too early to give in this standard a normative status for the definition of this concept.

Consequently, the definitions of the terms specifically related to value management will be the subject of a second part of this standard:

prEN 1325-2 *Value management — Value analysis, functional analysis vocabulary*  
Part 2: *Value management*  
(provisional title)

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## 0 Introduction

A set of methods such as value management, value analysis, functional analysis are founded on the concept of value and on the functional based approach.

They are used at the general management level of companies and organizations, for the development of products and services, or to work out the optimized solution of many kinds of industrial and organizational problems.

Their concern for the end purposes, or functions, of the matter examined, their search for the optimization of these functions in relation to the means, resources or expenditures which are necessary for their attainment, are very important factors for the overall efficiency and competitiveness of companies and organizations.

These methods are largely used in the industrialized countries; they are gaining wider recognition the world over.

European Standards are being developed to promote unified concepts and the highest level of expertise and efficacy in the European countries.

A common way of practice of these methods, a common understanding of the standards make it necessary to define and standardize in a vocabulary standard the precise meaning of the specialized terms which are used. If the standards on value management methods which are just now being developed require a correction or adaptation of terms and definitions then this will be taken into account by a revision of this standard.

## 1 Scope

This standard defines terms on value analysis (VA) and functional analysis (FA).

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN ISO 8402 : 1995 *Quality management and quality assurance — Vocabulary (second edition).*

## 3 Definitions

For the purposes of this European Standard, the following definitions apply.

NOTE. When a term, which is defined in this vocabulary, is used in the definition of another term, it is printed in bold type.

### 3.1 General terms

#### 3.1.1 value

The relationship between the contribution of the **function** (or **VA subject**) to the satisfaction of the **need** and the cost of the function (or **VA subject**).

NOTE 1. The term of **value** is also used when factors other than **cost** such as reliability, weight, availability of resources and time are considered.

NOTE 2. In the original VA meaning, **value** was only the ratio between **functions** and **cost**.

NOTE 3. This definition mainly concerns the **value** for a specific **user** (**value** can be different for the different **users**). The **cost** of the **function** (or **VA subject**) is the **cost** (or price) the **user** bears. When the **value** is considered for the producer, the **cost** taken into account is the **cost** of production.

#### 3.1.2 value analysis; VA

An organized and creative approach using a **functional** and economic design process which aims at increasing the **value** of a **VA subject**.

NOTE 1. The **VA subject** can be an existing **product**, or a new one which is being developed.

NOTE 2. The procedure of **value analysis** is implemented by a **VA team** and outlined by the **VA job plan**.

#### 3.1.3 value engineering; VE

Term sometimes used for the application of **value analysis** to a new **product** which is being developed.

#### 3.1.4 need

What is necessary for or desired by the **user**.

NOTE. A **need** can be declared or undeclared; it can be an existing or a potential one.

#### 3.1.5 user

Any person or organization for which the **product** is designed and which exploits at least one of its **functions** at any time during its life cycle.

NOTE. A **user** can be an external or internal customer.

#### 3.1.6 product

Result of activities or processes.

NOTE 1. A **product** can include service, hardware, processed materials, software or a combination thereof.

NOTE 2. A **product** can be tangible (e.g. assemblies or processed materials) or intangible (e.g. knowledge or concepts), or a combination thereof.

NOTE 3. A **product** can be either intended (e.g. offered to customers) or unintended (e.g. pollutant or unwanted effects).

(1.4 of EN ISO 8402 : 1995)



### 3.1.7 constraint

A characteristic, result or design feature which is made compulsory or has been prohibited for any reason. No alternative possibility is left.

NOTE 1. **Constraints** are generally restrictions on the choice of solutions in a **VA project**.

NOTE 2. Two kinds of **constraints** are considered, those which concern solutions, and those which concern the end purposes which are the **functions** of the **VA subject**.

NOTE 3. Environmental conditions for instance can, to some extent, require development of the **VA subject** so that it performs one or more **functions to**, for example, withstand corrosion. In this case nothing is really compulsory, it is up to the company to decide which **VA subject** is to be developed.

NOTE 4. For example **constraints** can come from law, standards, market demand, investments and means availability, or the organization's policy.

## 3.2 Terms related to VA work

### 3.2.1 VA subject

A potential or existing **product** to which **value analysis** is applied.

NOTE 1. The **products** to which **value analysis** is applied are most usually intended products (see note 3 of 3.1.6).

NOTE 2. Unintended **products** can be the result of an **unnecessary** or **undesirable function** (of a process for instance). A serious problem could arise in the latter case, and **value analysis** could be used to solve it. Thus, an unintended **product** can also be a **VA subject**.

### 3.2.2 VA job plan

An organized and methodical procedure consisting of a certain number of phases intended to ensure successful application of **value analysis**.

### 3.2.3 VA target

**Functional** and **cost** objectives (or objectives other than cost such as availability, time, volume, etc.) for the **VA project** set for the **VA team**.

NOTE. Depending on the progress of the work of a **VA project** a general or a detailed objective can be identified.

### 3.2.4 VA manager

A person who is responsible for planning, organizing, supervising and implementing VA activities in an organization such as a company, a commercial or administrative organization.

### 3.2.5 VA decision-maker

The member of management who gives direction to a **VA project** and is the ultimate decision-maker on which proposals of the **VA team** will be implemented.

### 3.2.6 VA project

The application of **value analysis** to a **VA subject**.

### 3.2.7 VA team

A multi-disciplinary group of people, selected for their competence, expertise and/or responsibility in various aspects of the **VA subject**, who undertake the **VA project**.

### 3.2.8 VA project leader

The person who has the knowledge, experience and personality to organize, lead and co-ordinate a **VA team** in a professional and successful way, and as such has been put in charge of this responsibility by management.

### 3.2.9 enquirer

Person or organization in search of a **product** and who is responsible for issuing the **functional performance specification**, with a view to its purchase or requisition and use by itself or by others.

### 3.2.10 VA pre-conditions

Elements of the context which are necessary before **value analysis** can proceed.

NOTE. **VA pre-conditions** are, for example, market research, costs, motivation, resources, skills.

## 3.3 Terms related to function

### 3.3.1 function

Effect of a **product** or of one of its constituents.

### 3.3.2 functional analysis; FA

A process that describes completely the **functions** and their relationships, which are systematically characterized, classified and evaluated.

NOTE. The **function structure** is a part of the result of **functional analysis**.

### 3.3.3 Types of functions

#### 3.3.3.1 user related function

Effect expected of a **product**, or performed by it, in order to meet a part of the **need** of a definite **user**.

NOTE 1. The **users** and the market are only interested in **user related functions**.

NOTE 2. **User related functions** are either use or esteem functions.

#### 3.3.3.2 product related function

The effect of a constituent or the effect between the constituents of the **product** for the purpose of performing **user related functions**.

NOTE 1. When choosing an overall solution, the designer or organizer determines the **product related functions** sometimes called internal functions.

NOTE 2. The product related functions of a complete product or system can be the **user related functions** of a constituent element entering into the composition of this product.

NOTE 3. The **product related functions** can be related to the available technology.

### 3.3.4 function cost

The whole of the expenditure forecast or incurred for including a **function** in a **VA subject**.

NOTE. Before design or re-design, the **function cost** is a target or a limit: the expenditure which is granted for including that **function**. After development or implementation, the **function cost** is the **cost** which has been effectively incurred.



### 3.3.5 functional performance specification; FPS

A document by which the **enquirer** expresses his **needs** (or those which he is instructed to express) in terms of **user related functions** and **constraints**. For each of these, **evaluation criteria** are defined together with their **levels**, a certain degree of **flexibility** being assigned to each one.

### 3.3.6 Particular characteristics of functions

#### 3.3.6.1 unnecessary function

**Function** that does not contribute to the satisfaction of the **need** of a **user**, and so has no positive contribution to the **value** of the **product**.

#### 3.3.6.2 undesirable function

**Function** which has an adverse effect for the **user**. It has a negative contribution to the **value** of the **product**.

NOTE. **Undesirable functions** are generally the unanticipated results of the technical choices.

### 3.3.7 function structure

Arrangement of **functions** resulting from **functional analysis**, which can be presented in the forms of a tree, or of a diagram, giving a complete, visual, written presentation.

When **product related functions** are considered, the **function structure** shows the way in which the **functions** interact.

### 3.3.8 function carrier

Feature by which a **function** is realized.

NOTE. **Function carriers** can be parts of a **product** or operations in a process.

### 3.3.9 evaluation criterion

Characteristic used to evaluate the performance expected from, or provided by the **VA subject**.

NOTE 1. **Evaluation criteria** can be specified for one or more **functions** or for the whole **product**.

NOTE 2. Several **evaluation criteria** are generally necessary to precisely specify a **function**.

### 3.3.10 Level of an evaluation criterion

Position on the scale of measurement for a **function evaluation criterion**.

NOTE. This level can be the one sought as a goal set in the **functional performance specification** for instance, alternatively it can be the level reached by a proposed technical solution which is used to formulate a judgement of the solution.

### 3.3.11 flexibility of a level

A set of indications given by the **enquirer** regarding the possibility of adjusting the **level** sought for an **evaluation criterion**.

NOTE. This flexibility can be expressed:

- in a qualitative way ('classes' of flexibility);
- in a quantitative way (in particular in terms of cost benefit).

## 3.4 Terms related to cost

### 3.4.1 cost

The expenditure incurred on, or attributable to, a given **product**.

### 3.4.2 design to cost; DTC

A method of managing a project which allows the project to be controlled from its inception in order to meet defined performances within pre-established objectives of **cost** and time.

NOTE 1. This calls, in the early project phase, for a **cost** based on past experience, budget, market price, etc., to be assigned to a **product**, its components and assemblage and then for the technical specification and **cost** to be traded off against each other until a general agreement is reached.

NOTE 2. A continuous **cost** visibility should be ensured during development.

### 3.4.3 life cycle cost; LCC

The **cost** of acquisition and ownership of a **product** over a defined period of its life cycle. It may include the **cost** of development, acquisition, user training, operation, support, removal from use and disposal of the **product**.

NOTE. Life cycle is the time interval from a **product's** inception until its removal from use and its disposal.



**Annex A (informative)**

**Bibliographical references**

Value analysis glossary, published by the Commission of the European Communities — Brussels, Luxembourg 1991 (Office for official publications of the European communities - ISBN 92-826-2927-9).

Value Management Handbook, published by the Commission of the European Communities — Brussels, Luxembourg 1994 (Office for official publications of the European communities - EUR 16096).

**Annex B (informative)**

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