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Facility Management - Part 4: Taxonomy, Classification and Structures in Facility Management

Facility Management - Teil 4: Taxonomie, Klassifikation und Strukturen im Facility Management

Facilities management - Partie 4: Taxinomie, classification et structures

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Facility Management - Part 4: Taxonomy, Classification and Structures in Facility Management

Facilities management - Partie 4: Taxinomie, classification et structures

Facility Management - Teil 4: Taxonomie, Klassifikation und Strukturen im Facility Management

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 15221-4:2011) has been prepared by Technical Committee CEN/TC 348 “Facility Management”, the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This European Standard is one of the series EN 15221 "*Facility Management*" which consists of the following parts:

— *Part 1: Terms and definitions*

— *Part 2: Guidance on how to prepare Facility Management agreements*

— *Part 3: Guidance on quality in Facility Management*

— *Part 4: Taxonomy, Classification and Structures in Facility Management*

— *Part 5: Guidance on Facility Management processes*

— *Part 6: Area and Space Measurement in Facility Management*

— *Part 7: Performance Benchmarking*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

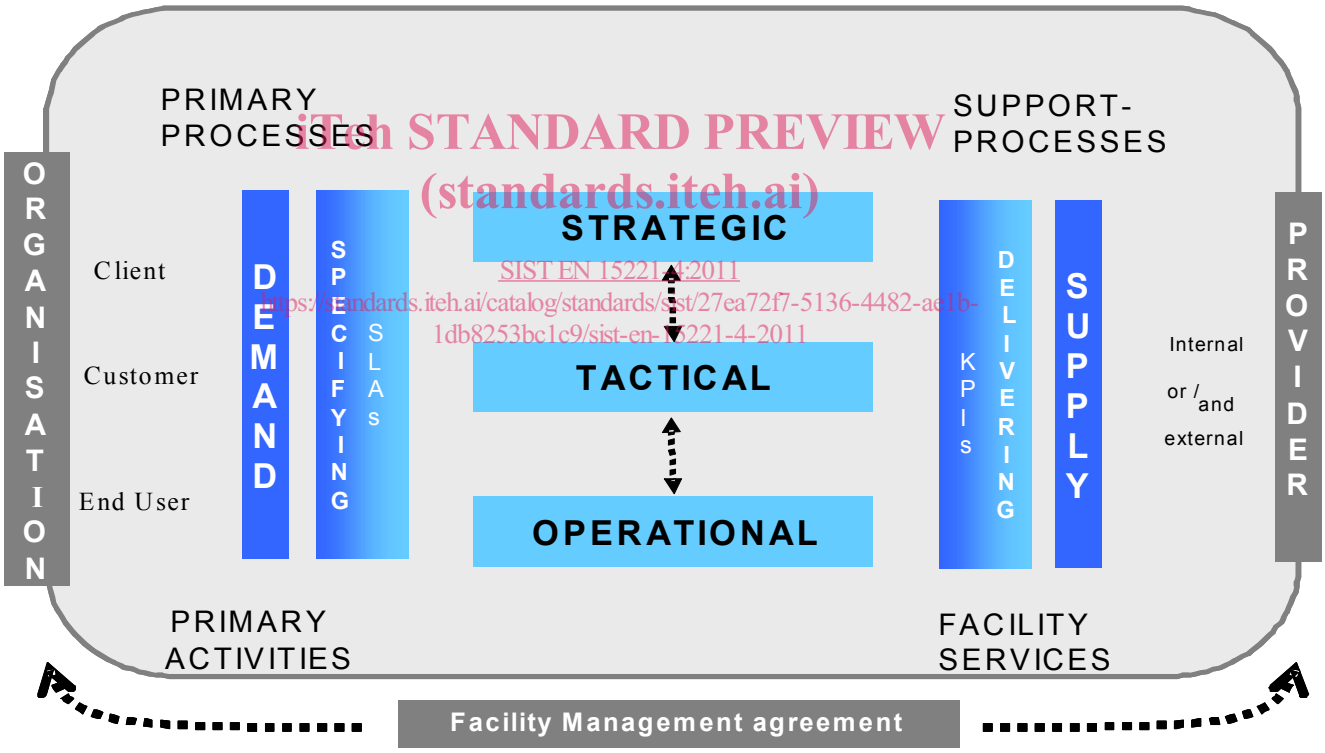
Common Introduction for the European Standards EN 15221-3, EN 15221-4, EN 15221-5 and EN 15221-6

In 2002 the initiative was taken to establish a European Standard for Facility Management benchmarking purposes. It was soon recognized that to reach this objective, preliminary standards had to be elaborated and published. The first result of that process was the standards EN 15221-1:2006 and EN 15221-2:2006. Based on the discussions in the development of those two standards the decision was made to develop four new European Standards for Quality, Taxonomy, Processes and Measurement.

After the realization of those six standards it was possible to pursue developing a European Standard for Benchmarking prEN 15221-7.

The standards, EN 15221-3, EN 15221-4, EN 15221-5 and EN 15221-6 have been developed, adopted and agreed as a set of principles, underlying the Facility Management approach on EN 15221-1, to ensure consistency. These are incorporated in the basic principles of a process-based management system, upon which these standards are founded.

The FM-model of EN 15221-1 is shown below.



Model EN 15221-1:2006

These standards also build on widely accepted management principles, in particular value chain (Porter, M E, (1985), "Competitive Advantage: creating and sustaining superior performance", Free Press, New York) and quality control (PDCA. Deming, W E (1986), "Out of the Crisis", MIT, Cambridge). Reference to ISO 10014:2006, *Quality management – Guidelines for realizing financial and economic benefits*.

The principles of the Deming cycle (PDCA) underpin all of the standards but are applied to a different extent and depth in each. In fact, there are different types of PDCA cycles depending of the term (e.g. long term, short term).

These standards align to EN ISO 9000 family of standards for Quality Management Systems and apply specific guidance on the concepts and use of a process-based approach to management systems to the field of Facility Management.

The term "facility services" is used as a generic description in the standards. The term "standardized facility products" refers to the "standardized facility services" defined and described in EN 15221-4, *Facility Management — Part 4: Taxonomy, Classification and Structures in Facility Management*.

Countries can decide to substitute the term "product' into "service", when they consider that it is important for a good acceptance and use of the standards in their own country.

The aim of all the standards is to provide guidance to Facility Management (FM) organizations on the development and improvement of their FM processes to support the primary activities. This will support organizational development, innovation and improvement and will form a foundation for the further professional development of FM and its advancement in Europe. Therefore, generic examples are provided in the standard to assist organizations.

These standards lay the foundation of the work that has to be done further more in developing Facility Management, for example, benchmark standards prEN 15221-7.

Introduction to Taxonomy, Classification and Structures in Facility Management

In the European Standard EN 15221-1 Facility Management is defined as the integration of processes that support the primary business of an organisation. Facility Management (FM) according to this definition envisages a business model that encourages an organisation to optimise its support services. The key focus is to improve the effectiveness of the primary activities of an organisation by streamlining the service provision and interaction of the parties.

Accessibility to the resources necessary to facilitate knowledge development, innovation and business improvement are important in a global market where leading edge practices are maintaining or improving competitive advantage as key objectives of a successful business or governmental organisation. Taxonomy provides a framework within which knowledge is able to be identified and categorised for ease of access by practitioners.

Based on various definitions, the most evident conclusion is that taxonomy is a classification system for improved information management, which contributes to improving the capability of users to sustain and improve the operations of their business. The key concept relates to how the use of taxonomy will improve the operations of the business. In this regard, the structure of taxonomy should be closely aligned to business processes so that the user's access to information is intuitively driven.

EN 15221-4 provides a taxonomy with a relationship model which integrates the FM-model, the process matrix, the product/service structure and a classification system. These are essential contributions to the removal of barriers to harmonisation and cross border trade.

This standard uses the term product in accordance with EN ISO 9000 which defines a product as the result of a process. In the context of FM, a product is a result of a process and the respective activities / facilities.

The standardised (classified) facility products are a well defined (commodified) and hierarchically organised set of facility services. They have been selected from the countless number of individual (customised) facility services to provide a basis for standardisation in the field of process definition, cost allocation, standardised tendering etc. They have been selected from a client perspective and attempt to integrate different European customs and practices.

1 Scope

FM covers and integrates a very broad scope of processes, products / services, activities and facilities. The approach of this standard is to consider the added value provided to the primary activities by adopting a product perspective as recognised by the primary processes or core business in the organisation. This standard therefore introduces the concept of standardised (classified) facility products.

The scope of this standard is to provide taxonomy for FM which includes:

— relevant interrelationships of elements and their structures in FM;

— definitions of terms and contents to standardise facility products which provide a basis for cross border trade, data management, cost allocation and benchmarking;

— a high level classification and hierarchical coding structure for the standardised facility products;

— expanding the basic FM model given in EN 15221-1 by adding a time scale in the form of the quality cycle called PDCA (Plan, Do, Check, Act);

— a linkage to existing cost and facilities structures;

— alignment with the primary activities requirements.

Additional benefits from this standard are:

— Introducing a client rather than a specifically asset oriented view;

— Harmonisation of different existing national structures (e.g. building cost codes) on an upper level relevant for the organisation and its primary activities.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15221-1:2006, *Facility Management — Part 1: Terms and definitions*

EN 13306, *Maintenance — Maintenance terminology*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 General taxonomy of Facility Management related terms and definitions

3.1.1
adaptability
possibility (ability) of changing characteristics like volume or function or space in order to meet new requirements

NOTE 1 Adaptability consists of:

— Elasticity: The possibility of changing the volume;

— Generality: The possibility of changing the function;

— Flexibility: The possibility of changing the distribution of space.

NOTE 2 Usability is defined in ISO 9241.

3.1.2
classification
system for grouping and categorising items with similar characteristics (attributes)

3.1.3
facility manager
person responsible for the facility management organisation who is the single point of contact for the client on strategic level; leads the FM organisation, ensures quality and continuous improvement and conducts strategic projects and tasks

NOTE If he is a member of the board of the organisation, the facility manager is also called Chief Facility Management Officer CFMO or Chief Facility Executive CFE.

3.1.4
facility process
support process which is integrated and managed by FM

NOTE 1 The output of a facility process is a facility product.

NOTE 2 Facility processes are subdivided into facility management processes on strategic and tactical level and facility services processes on operational level.

3.1.5
FM product map
structure of the standardised (classified) facility products in FM

NOTE Based on EN ISO 9000 the term product is used to cover service, software and hardware.

3.1.6
hierarchy
structure of levels in which each level includes its lower levels

NOTE Taxonomies are frequently arranged in a hierarchical structure. Typically they are related by supertype-subtype, also called parent-child relationships.

3.1.7
real estate
encompasses land along with anything affixed to the land, such as buildings

NOTE Real estate, immovable property, real property, realty are used synonymously.

3.1.8
standardised facility product
one of a defined set of classified and hierarchically organised facility services. Depending on national language customs, the term standardised facility service may be used synonymously

NOTE 1 The term product is used in accordance with EN ISO 9000 being the output of a (facility) process which can be a single or a package of material (hardware) or immaterial provisions (software), supplies or services which support the primary activity of the organisation and its properties.

NOTE 2 The term "Facility product" has been chosen due to its more commodified (classified) and therefore more comparable nature to enable benchmarking while facility services generally are of a more individual and customised nature. The products have been defined from a client perspective while considering different European customs.

NOTE 3 In this standard the term "Facility" (= a tangible asset, see EN 15221-1) is used in the sense of "facilitation", to provide services, assets, tools and consumables to make work easier/to support the primary activities. This includes a whole production site of an organisation and goes down to a single sheet of paper which needs to be purchased, stored, supplied, bound, archived and recycled. Facilities like a building or a sheet of paper are always embedded in activities and the provision of services.

3.1.9
structure
relationships between classes, groups and categories and how they are linked together

3.1.10
support processes
a workflow of activities not designated as primary activities (non-core activities)

NOTE Support processes which are integrated and delivered by FM are called facility processes.

3.1.11
taxonomy
practice and science of classification

NOTE A knowledge map of a topic typically realised as a controlled vocabulary of terms and or phrases. An orderly classification of information according to presumed natural relationships. A classification system for improved information management, which should contribute to improving the capability of users to sustain and improve the operations of their business, into a series of hierarchical groups to make them easier to identify, study, or locate.

3.1.12
tenant

individual or business which has temporary possession of or pays rent for real estate owned by another party (landlord)

3.2 Financial and administrative terms and definitions

NOTE When registering, recording or collecting facility costs, as well as allocating them to products, it is necessary to indicate the nature of the costs and revenue. A definition of cost types and terms related to costs used in this standard is given below. For more detailed definitions this standard refers to national or international accounting standards.

3.2.1
asset management
activities aiming to optimize the life cycle costs of facilities which have a value for the organisation

NOTE In the context of facility management, this is either an activity within the FM organisation and each standardised facility product concerning the facilities needed to provide its support services or a support service to the primary activity and concerning e.g. its production facilities.

3.2.2
cost of capital
interest and provision for capital

3.2.3
cost of enhancement of initial performance (improvement costs)
costs needed to change a facility to meet new requirements

3.2.4
depreciation
estimated or expected decline in value of an asset

NOTE The term is used in accounting, economics and finance to spread the cost of an asset over the span of several years.

3.2.5
FM cost centres
element within the accounting system which captures FM-costs

3.2.6
material costs/costs of materials
costs of goods (e.g. consumables, tools, spare parts)

3.2.7
personnel costs/costs of personnel
wage costs (the gross annual salary, including social plans and taxes, holiday pay, gratuities, bonuses and profit sharing) and other personnel costs

3.2.8
primary activity cost centres
element within the accounting system which captures costs

NOTE A cost centre often represents a division that adds to the cost of the organisation.

3.2.9
revenue
earnings

NOTE Costs and revenue are linked to the time when they are generated. Costs therefore are not necessarily equal to expenditure, and revenue does not, by definition, constitute receipts and vice versa.

3.2.10
tax costs
costs such as taxes, fees and offsetting of non-reclaimable VAT (value added tax)

3.3 Definitions of main standardised facility products

NOTE Facility products are hierarchically structured. The principle structure is outlined in the body of this standard and the terms are therefore added in this chapter. The structure follows the examples given in the annex of EN 15221-1 with minor adaptations. A more detailed definition of these standardised facility products as well as the definitions of the products on lower levels are given in Clause 5.

3.3.1
business support
services supporting mainly the management of an organisation, for example, legal counsel

3.3.2
cleaning
services related to hygiene and cleanliness that maintain a proper working environment and help to maintain assets in a good condition

3.3.3
Health, Safety, Security and Environment (HSSE)
services protecting from external dangers or internal risks and protect assets and the health and well-being of the people and providing a safe and sustainable environment

3.3.4
hospitality
services providing a hospitable working environment making people feel welcome and comfortable

3.3.5
ICT
services related to information and communication technologies

3.3.6
logistics
services concerned with the transport and storage of goods and information and improving the relevant processes

3.3.7
organisation specific
services related to people and organisation which are specific to the type or branch of the organisation

3.3.8
outdoors
services related to the outdoor areas including land, maintaining parking facilities, gardening etc.

3.3.9
primary activity specific (Industry sector specific)
services related to space and infrastructure which are specific to the type or branch of the organisation

NOTE A boiler for example can supply heating for buildings or steam for industrial processes. The latter would fall under this product to make investment and energy used in the buildings comparable to other buildings and industry processes comparable to similar industry processes and thus enabling benchmarking.

3.3.10
space (accommodation)
services for the provision of accommodation like design and build, acquisition or renting of space, including the administration and management of space and its disposal

NOTE 1 It includes the utilities and technical infrastructure (technical building equipment) resulting in a comfortable climate and supplying lighting/ shading, electrical power, water and gas.

NOTE 2 The investment costs of the technical infrastructure are generally included in the costs of space. The consequences are that technical infrastructure cannot be a product of its own on this level.

NOTE 3 The term space has several other meanings as well. This definition applies in the context of the standardised facility products.

3.3.11
sustainability
state in which components of the ecosystem and their functions are maintained for the present and future generations

NOTE See ISO 15392 - Sustainability in building construction.

3.3.12
workplace
services related to the working environment, for example, furniture, equipment and tenants fit out

4 Derivation of Facility Products and Relationship Model

4.1 General

The principle reason FM exists as an entity is to support the primary activities of an organisation more effectively, therefore alignment of facility processes that deliver facility services or facility products which are an essential support and/or add value to the client organisation with the primary processes is of fundamental importance.

In the field of Facility Management, there have been many different approaches to the definition, structuring and allocation of costs. The varying requirements have historically not been met by one single cost structure without compromise or repetition of items. This standard therefore defines generic structures and methods for the classification of hierarchically organised and standardised facility products which will allow consistent cost allocation and improve the ability to combine, analyse and present information. Based on EN ISO 9000 the term product is used to cover service, software and hardware.

The map of standardised facility product provides a basis for:

a) uniform specification for the provision of services;

b) cost allocation and cost comparisons;

c) measuring quality and performance in a consistent way;

d) benchmarking across organisations and national borders.

The creation of a set of high level standardised facility products will, if widely adopted, allow organisations to align internal structures and costs and, over time, benchmark with other similar companies with increased certainty.

Adoption of a detailed costing structure demands considerable time and effort. Every organisation has to determine the appropriate level of detail included in its cost allocation system, however, all organisations should be capable of implementing the high level structures of standardised facility products contained in this standard.

4.2 The generic structures needed to describe a facility product

In the field of Facility Management, there are differing relationships between information and costs. The information can be shown in different ways following different structures. The differing relationships cannot be accommodated by one single (cost) structure without compromise or constant repetition due to the fact that there is usually more than one dimension (independent structure) involved. This taxonomy standard therefore defines generic structures and cost allocation methodologies to consolidate the information and asset evaluation. The various partly overlapping existing structures in Facility Management (cost structures, activities, facilities, processes, resources, life cycle phases, building areas, utilities, ICT network, etc.) have been reduced to a minimal set of three generic structures needed to describe a Facility Product.

When the proposed structure is adopted, organisations will have the ability to compare costs of standardised facility products as well as costs of individual facility services in accordance with already existing cost structures. This ability will be further enhanced by the use of a standard computer based accounting system. At a certain level, cost information used in an accounting system will not be sufficient and physical or measured data like m2, kWh, etc. is required. This is the point where the application of an enhanced accounting system like e.g. a CAFM (Computer Aided Facility Management) is recommended.

Two of the resulting generic structures, the activities structure and the facilities structure, are connected together in form of a matrix. Adding cost information as the third structure, the resulting three dimensions