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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

Facility Management - Part 8: Principles and processes

Facility Management - Principes et processus

Facility Management - Grundsätze und Prozesse

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 348.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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European foreword

This document (prEN 15221-8:2023) has been prepared by Technical Committee CEN/TC 348 “Facility Management”, the secretariat of which is held by SN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15221-3:2011, EN 15221-4:2011, EN 15221-5:2011 and EN 15221-7:2012, see [1], [2], [3] and [5].

New content on sustainability (4.7.2 and Annex H), competences (4.7.3) and digitalisation and Building Information Modelling (BIM) (Clause 11) have been added.

Introduction

This document is based on the withdrawn European standards EN 15221 Parts –1 to –5 and –7 (except EN 15221 Part –6 about space measurement [4]) and on the EN ISO 41000 series of FM standards, see Clause 2 and Bibliography [8] to [14].

The aim of the European FM standards is to provide guidance to Facility Management (FM) organizations on the development and improvement of their FM processes in order to support and enable the function of the primary activities in a safe and motivating work environment. It supports organizational development, innovation and improvement and forms a foundation for further professional development of FM and its advancement in Europe. Generic examples are provided in the standard to assist organizations in its application.

The European FM standards are for use by management, practitioners, and consultants and are applicable to:

- FM in public and private/commercial organizations;
- demand organization and service provider relationships;
- both types of service providers in FM (internal and external);
- professionals in the full range of facility services or facility products;
- all types of working environments (e.g. industrial, commercial, administration, military, healthcare, housing, etc.).

EN ISO 41011 defines FM as an “organizational function which integrates people, place and process within the built environment with the purpose of improving the quality of life of people and the productivity of the core business”.

From a European perspective, this definition contains the following, additional aspects:

- An ‘organizational function’ means, FM has a responsibility within the organization to actively contribute to and be partly accountable for reaching its goals (productivity of the core business);
- The parts integration of ‘people, place and process’ (= workplace) and ‘improving the quality of life of people’ require that FM has a responsibility in the definition of the demand of the core business for space and other resources in order to optimize costs, efficiency, and functionality;
- The part ‘within the built environment’ consequently points to another responsibility in the field of sustainability.

Missing from this perspective are e.g. the anticipation of and adaptation to change.

Benefits or effects and outcome of FM are:

- Effectively operating primary processes;
- Satisfied, motivated and creative employees and external users;
- Safe and functional working/built environment according to user’s needs;
- Improved quality of support services
- Optimized use of resources within budgetary restrictions;

- Well utilized space and infrastructure;
- Sustainable and future-proof space and infrastructure;
- Compliance to laws and regulations.

Every organization, be it private, commercial, public or non-profit, needs support in form of managed services (FM or other support management) in order to enable its business to function. Every organization is also unique and so is every implementation and the responsibility of FM in an organization. (Move to introduction or delete it)

This document specifies an exemplary implementation of FM called FM business concept where individual implementations can be derived from.

This document sets inter-related structures in the FM business concept overview model, see Figure 1. It integrates the **organizational** background (Clause 4), the **demand** definition and the three-level model (Clause 5), the **roles** (Clause 6), the generic management **processes** (Clause 7), the product or **facility services** map (output, Clause 8), the associated agreement defining **quality** (Clause 9), and the controlling/reporting/continuous improvement (**benchmarking**, PDCA) structures (Clause 10). These Clauses are followed by a new and overarching Clause 11 about **digitalisation** and BIM.

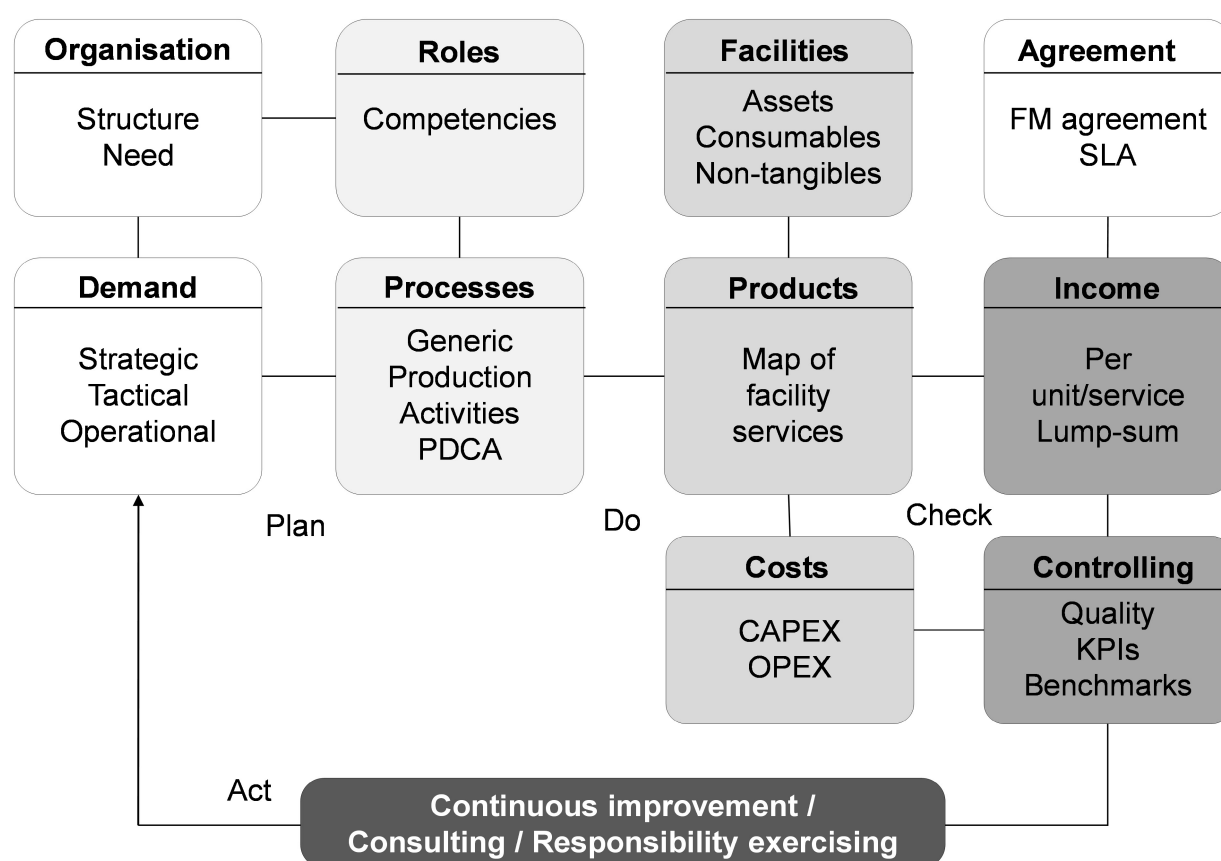


Figure 1 — Elements of the FM business concept and their relation

This document provides additional information in conjunction with EN ISO-standards on how to organize FM within an organization from a European perspective:

- It specifies fundamentals, principles, and processes for Facility Management and provides methods which enable the implementation and use of these within any organization;
- It specifies criteria to support organizational decisions;
- It gives guidance for development and improvement of the FM processes to support and enable the function of the primary activities.

It also points to the responsibilities and accountability of FM as an organizational function that enables the primary processes. It helps to demonstrate the benefits of FM to the organization and to create maximum value by enabling the organization to function in an optimal way.

Main users of the standard (target audience):

- Persons ordering FM: CEOs, COO's, head of department (overview);
- Internal professionals: Facility managers, Facility services managers (detail);
- External professionals: Consultants, service providers, software producers;
- Educational professionals: Persons involved in teaching, learning and research in FM. (suggest to move this to the introduction).

1 Scope

This document:

- specifies fundamentals, principles, and processes for Facility Management and provides methods which enable the implementation and use of these within any organization;
- specifies criteria to support organizational decisions;
- gives guidance for development and improvement of the FM processes to support and enable the function of the primary activities.

This document is based on and replaces EN 15221-3, EN 15221-4, EN 15221-5 and EN 15221-7.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 ISO 41011, *Facility management - Vocabulary (ISO 41011)*

EN ISO 41012:2018, *Facility management - Guidance on strategic sourcing and the development of agreements (ISO 41012:2017)*

EN 13306, *Maintenance - Maintenance terminology*

3 Terms, definitions, and abbreviations

For the purposes of this document, the terms and definitions given in EN ISO 41011 and the following apply.

3.1 Terms, definitions

3.1.1

FM business concept

description of a model like implementation of the support function in an organization using best practice

3.1.2

facility manager

individual responsible for managing demands and/or provision of facility services

[SOURCE: ISO 6707-4:2021, 3.7.12 – Modified: Note 1, 2 and 3 to entry are added]

Note 1 to entry: Depending e.g. on the size, type, complexity or culture of the organization, the role of the facility manager may be defined differently. It could be limited to strategic procurement (managing demands) and/or integration of facility services (managing provision) or could include responsibility for tactical and operational tasks. The role could also be split between the demand and the supply side.

Note 2 to entry: In the FM business concept described in this standard, the facility manager is the head of the FM organization and consequently the single point of contact for the top management on strategic level; in this case, the facility manager leads the FM organization (leadership), conducts strategic projects and tasks (planning), ensures supply (support operation), quality (performance evaluation), and continuous improvement.

Note 3 to entry: The verb managing refers to demands as well as to the provision of facility services.

3.1.3**facility professional**

trained and/or competent person working in a FM-organization

3.1.4**support processes**

workflow of activities not designated as primary activities (non-core activities)

Note 1 to entry: Support processes on which are integrated and delivered by FM are called facility processes.

3.1.5**performance indicator**

parameter, or a value derived from parameters, which provides information about performance

Note 1 to entry: Performance indicators are typically expressed as ratios between variables. These ratios may be commensurate (e.g. %) or non-commensurate (e.g. \$/m³).

[SOURCE: ISO 24523:2017, 3.13 – Modified: Note 2 to entry is omitted.]

3.1.6**key performance indicator****KPI**

measure that provides essential information about the performance

[SOURCE: EN ISO 41011:2018, 3.8.4]

3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

AIM	Asset information modelling
AM	Asset management
BIM	Building information modelling
BIMC	BIM implementation maturity checklist
CAFM	Computer aided FM
CAPEX	Capital expenditure
CEO	Chief executive officer
CDE	Common data environment
COO	Chief operating officer
CFMO	Chief FM officer
CSO	Chief Services Officer
ERP	Enterprise resource planning
ESG	Environment Social Governance
FM	Facility Management
FS	Facility service(s)
GMP	Generic management processes

HR	Human Resources
HSSE	Health, Safety, Security and Environment
ICT	Information and communication technology
KPI	Key Performance Indicator
M&O	Maintenance and operation
OIM	Object information modelling
OPEX	Operational expenditure
PDCA	Plan, Do, Check, Act
PIM	Project information modelling
QM	Quality management
QMS	Quality management system
REM	Real estate management
SLA	Service Level Agreement

4 Organization

4.1 Introduction

The organizations which can utilize this standard are all kinds of business organizations. The commercial sector can encompass a variety of organizations e.g. production companies, trade companies, insurance and bank companies, chemical and medical companies as well as automotive, electronics, computer, software, traffic and sales companies. Core business areas in the public sector can encompass e.g. administration, schooling, education, public safety (police, fire fighting), public transport, military, health care, justice, energy supply, etc.. Non-Governmental Organizations and Non-Property Organizations, include e.g. churches, political parties, trade unions, environmental protection associations, sports clubs, etc. Each one of these organization has specific and characteristic primary processes (core business), performed by business units like senior management, administration, research and development, production, storage, sales, after-sales, logistics, etc.

In order to execute its primary processes every organization needs support processes like human resources, accounting, controlling, customer relation, ICT, and needs space, infrastructure, equipment, and other assets. All primary processes and support processes have in common their need for a functional, motivating and creativity supporting working environment that enables their primary processes and offers the employees a good, comfortable, and safe well-being.

FM is the organizational function that takes responsibility to fulfil these support needs in an optimal way and thus enables the core business to function effectively.

In small organizations like start-ups or small consulting firms the owners and employees often carry out their support processes by themselves, as the complexity of the built environment and of the equipment is not too high.

To summarize: Every organization, be it private, commercial, public or non-profit, needs support in the form of managed services (FM or other support management) in order to function. Every organization is also individual and so is every implementation of the FM function in an organization.

FM as a discipline or profession can also be understood as a range of competences and knowledge delivered in institutions at different levels. To support the development of the discipline or profession, research activities are carried out on a regular basis and key results of the findings published to the market.

4.2 Fundamentals

This Clause describes the relationship between the top management of the organization and the FM organization from the top management's point of view.

FM is not an end in itself, it needs a "raison d'être" or reason to exist. The top management can be most interested in the bottom line and the most effective ways to deliver this. It needs good reasons to accept the need for the supply of support services – specifically in the form of FM - and to accept the resulting costs if it does not see the resulting value. There are three desired main effects or added values on the bottom line of the organization if FM is delivered effectively:

- Higher efficacy of the primary processes due to concentration on primary activities and due to integration, coordination, optimization (intensity of usage) and adaptation to change of enabling support processes;
- Higher productivity of workforce due to a safe and motivating built and work environment;
- Future-able (flexible, adaptable, sustainable) and well utilized assets which have more and longer lasting value;

FM is the enabling partner for all of this.

More detailed reasons for or added values of FM are the following activities and their effects:

- Translation of core business strategy into FM strategy – better strategy implementation;
- Systematic evaluation of needs – provision of required support only reduces costs;
- Potentially all required support managed and integrated by one function – desired functionality, avoids internal conflicts;
- Defined responsibilities and accountability –better management by agreements and targets;
- Provision of professional competences - optimal use of resources and added value;
- Service orientated activity – higher people satisfaction, safety and well-being by a positive and motivating built and work environment;
- Anticipatory behaviour (management vs. administration) – optimal adaptation to changes;
- Proactive communication, customised reporting and consulting - informed decisions;
- Providing KPIs and continuous improvement - effective control.

FM integrates multi management disciplines.

What kind of support does the core business need and what enables the organization best? The task of defining the needs of the organization is where FM starts and is determined. This task is therefore fundamental for a successful relationship between the core business and FM organization. The needs of the organization should be explicitly defined in a statement as the top management has to commit itself to paying for the resulting service provision. There are four main ways for defining and stating these needs:

- 1) The top management performs this task itself (preferable for small organizations);
- 2) The top management seeks external support (e.g. from FM consultants, this creates external dependencies);

- 3) The top management is supported by the internal FM organization (drawing from internal know-how);
- 4) The FM organization is represented in the top management of the organization and responsible for this task (preferred solution in EN ISO 41012 and the FM business concept, representing a mature organization).

The complete outsourcing of this fundamental task is not recommended as this could lead to a lack of competency to control the service provision.

FM is the competency centre for this task. One possible way to perform it is the description of primary processes and derivation and evaluation of need, requirement and demand for space/assets and services (e.g. by assigning usage types or applying service specific criteria). The size of the organization is usually a major driver in this task.

A clear assignment of delegated responsibilities is essential:

- Responsibility means agreeing targets and to deliver the agreed quality;
- Responsibility requires an adequate set of competences and creates outputs and positive effects;
- REM/AM is responsible for asset provision and M&O for usability. FM is taking the overall responsibility resulting in functionality;
- Without this overall responsibility, there will likely be too much (or too little) of everything – external (outsourced) providers can generally not be responsible e.g. for the provision of the right amount of space and consequently the right definition of requirements;
- External providers can be responsible for the provision and the quality of facility services;
- Without this overall responsibility, the FM strategy is not sufficiently linked to the core business strategy.

FM is responsible for the built and work environment and comes up with the right solutions using a management approach (looking ahead) instead of an administrative approach (caring for today)

The delegation of responsibilities is linked to accountability:

- Top management needs to take informed decisions, therefore, the right management system needs to be in place;
- Accountability should generally not be outsourced.

FM is accountable via FM agreement, SLAs, KPIs, and benchmarking

The top managements of the organization and of the FM organization need to communicate with each other in an appropriate form of communication.

Aspects of a two-way communication include:

- Mutual definition of needs and demand
- Jointly setting targets
- Advising and consulting in areas of competency
- Reporting, controlling and improving

— Projecting changes and proposing solutions

4.3 Principles and key messages

- 1) This standard and the presented FM business concept define how to organize, integrate, manage, and administer the support/facility services in an organization based on best practice;
- 2) The FM business concept builds on an organizational business model that differentiates between the head of the organization (executive level or senior management), the core business (primary processes, also applicable for public or non-profit organizations), and the support or facility management. Individual organizations (FM implementations) can be derived from this concept;
- 3) In the FM business concept, there is a demand-supply situation between the demand organization and FM;
- 4) The split between core business (demand) and support function or FM (supply) is organization specific, depends on different criteria (e.g. ownership and use of real estate can influence the individual FM implementation), and needs to be continuously updated;
- 5) The interface between demand side and supply side needs to be agreed, defined, communicated and well understood (FM agreement, service level agreements, roles and competences, processes, etc.);
- 6) There is a contradiction of sorts if all support functions/processes/services report into FM. The FM business concept acknowledges the possibility of independent support units (called other support management) in an organization but recommends a comprehensive inclusion of all support under one umbrella to achieve best results and avoid friction;
- 7) FM is an organizational function and therefore responsible for optimal support provision, its outcome needs to be measurable and FM is accountable for the required functionality and effects;
- 8) Limitation: up to a minimal size and complexity of an organization, facility services can be organized ad hoc without FM.

4.4 Understanding of FM

To understand FM, an understanding of the business process model of Michael Porter, which divides processes within an (demand) organization into primary or core processes (primary activities, core business) and into support processes (support services), is essential. The terms used in this standard are based on this common business process model.

The primary processes are the core processes of an organization. They create the results and contribute directly to the added value of the organization. Furthermore, every organization or business has support processes which interact in many ways with its primary processes. The definition of its core processes and the additional support processes needs to be decided by every organization individually; this distinction has to be continuously updated.

In order to succeed and deliver required results, FM should be in close synchronization with the mission, vision, objectives and domains of the core business. Further, it is the role of FM to provide strategic guidance to the core business, interpreting needs and translating them into explicit service demand and requirements. This requires a carefully defined interface between demand side and supply side and a representation of FM on high level of the organization.

The FM business concept describes a strategic business process model with the specific characteristic that support processes are integrated, optimized and the output delivered in the form of facility services to the organization. This requires specific competences, a holistic approach and distinguishes FM from

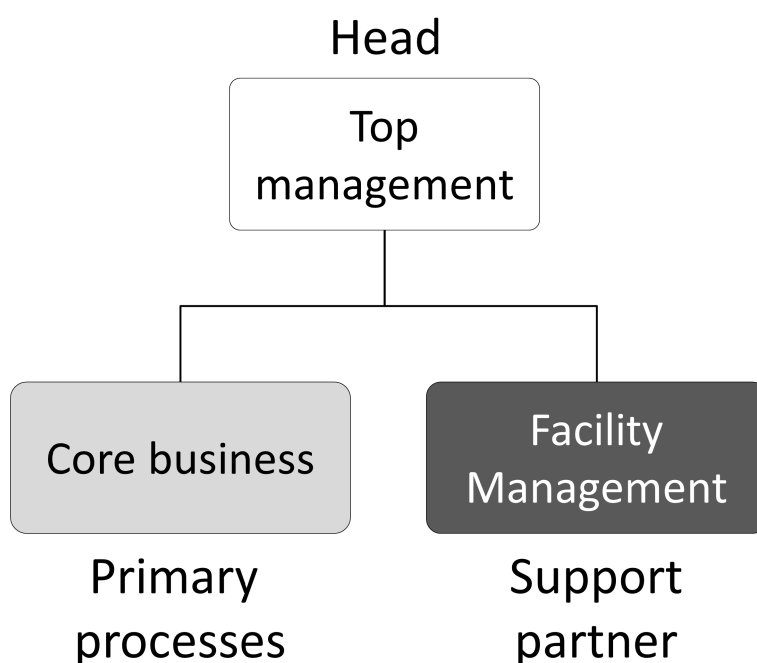
the isolated provision of one or more services. Not all support processes are necessarily part of FM in an organization. Assigning support processes to FM, according to the strategy and needs of the organization, and separating the remaining support processes is an important step in the introduction of FM. However, integration of as many support processes as possible can optimize benefits from FM and reduce potential inefficiencies and frictions.

An example of an often separately managed support process is building construction management. Most organizations do not treat this as a core business process. Additionally, FM considers the entire life cycle of a built asset, from planning and design (representing the investors and/or users), through construction and delivery, to on-going operations and renewal, including the phase after it is determined that the asset is no longer needed for the organization. Therefore, an integration into FM optimises processes and reduces potential conflicts.

Another example is information and communication technology ICT. ICT has a strong support services component (provision and support of workplaces with e.g. PCs, printers, standard software, phones, networks, etc.) but usually also a core business component with e.g. branch specific software. So, there are different implementations justifiable.

4.5 FM integration into the organization

The FM business concept is based on an organizational model with a head unit (top management) and two sub-units, one for the core business (primary activities) and one for FM (support function, support partner, integration of support services), see Figure 2. A more detailed version shows additionally a controlling board, a governing heading unit, staff units (e.g. Finances and HR), optionally other support services units, and further sub-units. The board is typically lead by the president, the heading unit by the CEO (chief executive officer), the core business unit by the COO (chief operating officer) and the FM unit by the CSO or CFMO (chief services/support or FM officer or the facility manager).

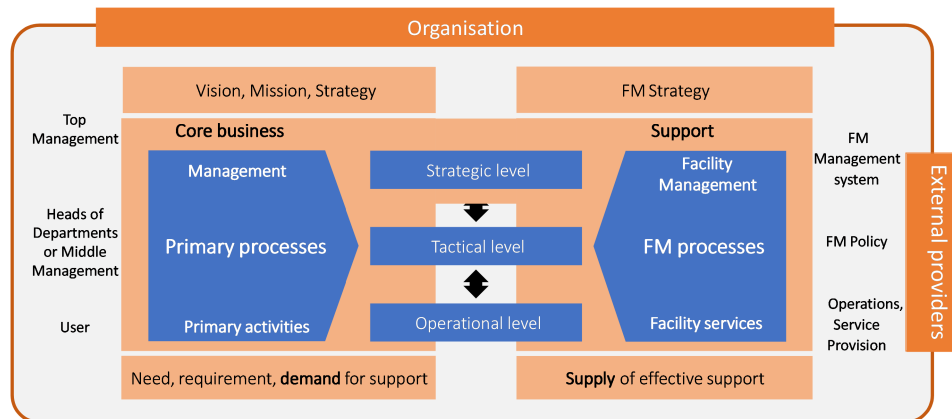


(Annex A provides a more detailed version where individual applications can be derived from; Annex B another graphical representation)

Figure 2 — Basic organizational model for the FM business concept

The FM model, see Figure 3, provides a framework describing how FM supports the primary activities of an organization in an optimal way. It deals with the demand and supply relationship and presents the different levels of possible FM interaction.

It derives and aligns workplace and facility related support processes from and with the organization's mission, values, goals, culture and strategies. This holistic and integrative approach to this management function is the core of FM and the source of its added value.



(Remark: the graphic takes into account the two different definitions of FM organization available in EN ISO 41011 and EN ISO 41012)

Figure 3 — The three levels of interaction between demand and supply

The FM-model is useful e.g. for educational purposes to:

- Highlight the different levels of interaction between demand and FM organization
- Discuss the interaction on strategic level
- Explain the demand supply situation
- Explain in-/outsourcing
- Explain the fundamentals of the FM business concept
- Show the relationship between FM related terminology

The organization is made up of a representative (executive or top management) on strategic level, one or more representatives (head of a unit or department) on tactical level and (end-) users (employees, customers, visitors, students, patients, etc.) on mainly an operational level. It's the responsibility of the representative on strategic level, to procure the required facility services (FM agreement), whereas the representative on tactical level specifies and orders the delivery of these services with Service Level Agreements (SLA) within the conditions of the FM agreement. On an operational level the end users receive these support services where appropriate. Together they form the demand organization. The interface between the demand organization and FM is governed in the FM agreement. It translates the needs of the demand organization into requirements and deliverables called facility services. The facility services provided by the corresponding facility processes are specified in an SLA. The use of well stated SLAs and Key Performance Indicators (KPIs) are essential for measuring performance against targets and goals.

FM aligns with goals and long-term strategies of the whole organization, but it also translates this alignment into day-to-day service for individual people, their well-being, their productivity, and their quality of life. In between, FM supports organizational units, such as business areas, units, sites or departments, in achieving business results. Therefore, the FM organization acts on the main three levels: *strategic*, *tactical*, and *operational*. Remark: smaller organization may not have an explicit tactical level.

Some of the main needs, actions and restrictions of the demand side and answers and effects of FM are given in Table 1.

Table 1 — Main needs, actions and restrictions of the demand side and effects of FM

Top management demand side	FM organization supply side
Defines and states the need for an enabled and effective core business	Provides a safe, effective, and motivating work and built environment
Makes projections, initiates projects, identifies changes	Uses competences to find solutions for adaptations
Sets restrictions and delegates responsibilities	Reports on its accountability and executes continuous improvement,

A description of tasks on the three levels strategic, tactical, and operational is given in Annex B.

4.6 Relation of terms

EN ISO 41011 defines the organizational and process related terms used in FM. Annex C presents a detailed graphical representation of these terms and their relations. Figure 4 presents a simplified version using only the main terms.

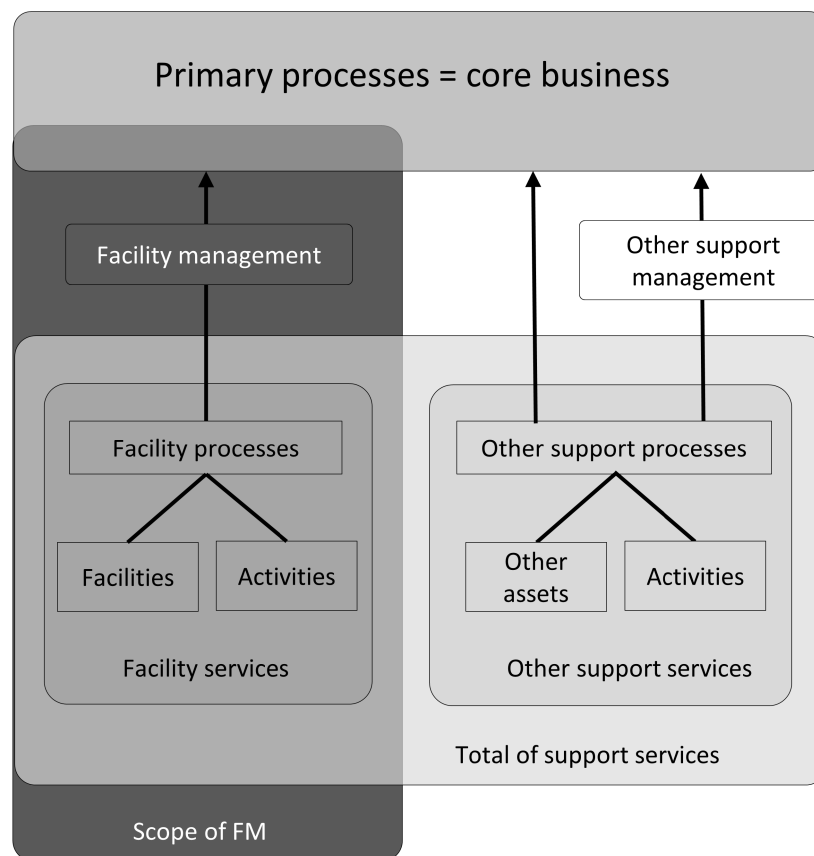


Figure 4 — Scope and relation of main FM terms in the FM business concept

4.7 Scope of FM

4.7.1 General

When defining FM there is always the contradiction if all support functions belong to FM or if FM is restricted to certain areas. Instead of trying to define these areas which would not suit all implementation of FM in practice, the FM business concept acknowledges the possibility of independent support management in an organization but recommends a comprehensive inclusion of all support processes under one umbrella (FM) in order to achieve best results and to avoid interfaces and frictions.

4.7.2 Sustainable management approach of FM

The success of an organization is founded on the supporting processes and the availability of supporting services and assets. Furthermore, the permanent changes caused by internal and external drivers form the management approach of FM which is directly driven by the necessity to come to sustainable solutions within a permanent changing world using dedicated but limited resources. Visual signs of these changes are moves, projects, refurbishments, constructions and transactions. So FM also takes responsibility to find sustainable solutions within these changes, which raises the level of competences involved.

The biggest challenge therefore is to find the balance between sustainable solutions and permanent adaption to ongoing changes in the organizations. Resources, which fit once, will cause problems in the future, if not designed smart. As buildings are often the biggest and most complex assets, their capabilities

to fulfil future needs should be integrated into the design and evaluated properly. Not to build due to proper demand management is the most sustainable form of construction.

4.7.3 Competences

To implement processes, methods and tools, which create the required support, specific competences and functions are needed within a Facility Management system, as described in EN ISO 41001.

As organizations focus on the execution of their success factors, the competences to manage the supporting assets differ and are often underestimated. Many organizations have not reached a level of FM that equals their responsibility for proper management of the supporting resources in comparison to their level of management of the primary processes.

Within the scope of FM, with the right level of competence, with the useful handling of methods, processes, and tools, the organizations get the support they need to create an attractive and motivating environment which leads to competitive valuable products and services and to wellbeing and comfortable atmosphere within the organization.

4.7.4 Resources managed by FM

Facility Management is responsible for or even owns the resources, which are not part of the primary processes or other support processes. These resources may consist of buildings, equipment, energy supply, personnel, and contractors for execution of processes and services and the handling of facts, data and information to come to sustainable solutions and decisions.

4.7.5 Work environment for primary processes

Within the scope of FM is a large variety of utilized space, equipped with assets, supplied with energy and media at the agreed place, to the agreed time, in the agreed quality, to the agreed amount, to the agreed cost. These assets consist of technical equipment, workplace equipment, equipment for external areas, equipment for recreation, for collaboration and many other usages. Therefore, the variety of assets is very large and creates a complexity of its own. The design, the planning of the working environment, the procurement of space, equipment and related assets, the organization of the required services to keep the working environment useful and functional, the evaluation of the efficiency, effectiveness and utilization, the adaptability and flexibility of the space and assets, the adaption to changes and the control as well as the organization of the processes creates a unique responsibility of FM.

4.7.6 Buildings (space)

As most primary processes are carried out all year long, buildings are needed to keep the workforce in the primary processes warm and dry, secure and safe. As a consequence buildings and real estate are within the scope of FM, these are specific and complex assets, but not the only ones. To rent space is an opportunity for the provision of a functional working environment, thus the real estate industry is an optimal partner for the FM units. In this context, it is essential to note that the real estate Industry has its own primary processes and is therefore not a part of FM. However, these real estate organizations have internally the same needs for a proper working environment and thus have their own FM to cover these needs for Facility Services as well as to operate, maintain and adapt their assets.

To operate and maintain buildings and the related real estate, many different trades and range of equipment need to be handled: construction elements like foundations, static walls, roofs, facades including windows, technical equipment like electrical, HVAC, security and safety equipment, automatic doors, elevators, sprinklers, etc. and each have specific requirements in order to operate it in line with the demands of the primary processes. Thus, also a large variety of competences, qualifications and experience needs to be involved.

4.7.7 Specific requirement: compliance to laws and regulations

In order to master the risks which are driven by the construction and operation of buildings, a large variety of laws and regulations have to be fulfilled: fire protection, emergency cases, insurance obligations, safety rules, statutory testing, and many more. There are no alternatives to handle these obligations and if not handled completely, the owner of the building is responsible for all resulting damages and casualties.

4.7.8 Consequences of low level of FM

Top management of organizations, who do not have a developed FM organization might argue, that their primary processes do not need a better support than already exists. This may be justified, when the organization does not require a high amount of space, assets, and services, when the organization doesn't change too much over time, and when the organization has enough resources and financial opportunities to pay for all the unmanaged space, assets, and services. When looking into underdeveloped FM organizations, many unutilized assets can be found in unused space. A large portion of work is required by the employees to manoeuvre equipment to the right place and to adapt the existing working environment to their needs.

In consequence, low level of FM creates efforts and costs which could be avoided, it creates suboptimal working environments and hinders employees to unfold their creativity. A number of resources may not be utilized properly.

4.8 Influence of ownership of real estate and their use in an organization

There are four basic forms of ownership of real estate (RE) and their use in an organization:

- Real estate is owned and used by the organization (owner/user);
- Real estate is owned by the FM unit of the organization (internal rental);
- Real estate is owned by a third party (external rental);
- Real estate is owned as financial investment and rented out (financial investment).

A portfolio can contain a combination of all four forms.

A table showing influence of ownership on FM organization is given in Annex D.

4.9 Maturity of FM implementation in an organization

There are principles upon which build the foundation of FM in an organization. The responsibility for Facility Management has to be concentrated in a single department. In many organizations, the responsibilities are often split e.g. amongst financial, technical, project and HR departments. These integrated structures have to be in place before the FM maturity and processes can be checked. Similarly important is, that the needs, demands and requirements of the primary processes have already been analysed and agreed.

For the strategic level, the following maturity criteria have been developed:

- 1) There is a management system (refer to EN ISO 41001) in place;
- 2) Vision, mission, and strategy (refer to EN ISO 41014) are defined, communicated, and in line with or part of the organization's vision, mission, and strategy;
- 3) The need and demand of the core business are clearly understood and communicated;

- 4) FM has a direct influence on the regular up-date of the need and demand of the core business by exercising its responsibility (e.g. for resource provision and its sustainability);
- 5) The FM unit has a high level representation in the organization in accordance with its importance (e.g. share of total expenses) * and its responsibility (e.g. resource provision);
- 6) The division between core business and support services is clearly defined;
- 7) Most or better all support services are managed and integrated by FM;
- 8) There is an FM agreement (refer to EN ISO 41012) in place;
- 9) Facility processes are clearly defined and implemented;
- 10) There is a quality management system (refer to EN ISO 9000) in place;
- 11) Service levels are clearly defined (SLAs);
- 12) Facility services are hierarchically organized and referenced to the facility services numbering in this standard in order to be able to compare them;
- 13) Financial, operational and asset accounting are coordinated with the facility services provision;
- 14) The organization gives FM the responsibility for and is asking for advice in overarching fields like sustainability;

*)-If FM is part or under other units e.g. HR it may become the first unit where staff is fired/reduced irrespective of the needed service levels.

For a more detailed tactical and operational maturity criteria see Annex G. For a capability maturity model typically described with a five-level evolutionary path refer to EN ISO 41014.

4.10 Restrictions in practice

In its ideal form, the FM business concept integrates and coordinates all support services within an organization. In practice, there are often separately managed support services to be observed (e.g. REM, ICT, etc.). This creates additional interfaces (e.g. in horizontal processes like building construction) which need to be clearly defined and managed. Potential conflicts need to be resolved by the head of the organization as the overarching process owner. The initial goal of FM is that the core business is supported in an optimal way and that it can concentrate on its main tasks which can be undermined.

On the other side, the isolated provision of one, several or even all Facility services falls short of FM and fails to realize its organizational potential and responsibility. Exception: if an organization is small enough for an ad hoc management of the support services.

4.11 Relation to other management functions

What distinguishes FM from other functions like building management, real estate management, asset management, or logistics is its focus on producing outcomes which impact both people and organizational performance. Although FM applies some concepts which sit within those other management functions or disciplines, it does so alongside other concepts drawn from a wide range of management thinking: for example human resources, organizational psychology, interior design, architecture, engineering, supply chain management, financial management and life cycle planning. It is this integration of processes towards achievement of organizational goals with a focus on delivery to people using the built or work environment that makes FM such a coherent and effective function.

5 Need, demand, requirement

5.1 Principles and key messages

FM has to support and enable the core business in an optimal way at the right time, in the right quantity and quality and at the right costs.

The organization's needs and demands in many areas are often unknown or unclear. FM, as a systematic approach, therefore, starts by exploring, analysing, and clarifying the organization's needs, continues by shaping these into defined requirements in the form of specifications, assesses delivery options, acquires and organizes these options, ensures measurement of outcomes, accountability, and continuous improvement which could act as a trigger to start a new cycle of these activities.

This is also known and defined in EN ISO 9000 as the "Plan, Do, Check, Act" (PDCA) controlling cycle, which is a continuous quality improvement model consisting of a logical sequence of four repetitive steps for continual improvement.

- 1) FM should always be in close synchronization with the mission, vision, strategies, objectives and needs of the core business;
- 2) FM in the FM business concept is integrated into the strategic decision making process and, in this function, actively provides strategic consulting and feedback to the core business to convey how FM can contribute to advancing the core business and ensure that core business get the most out of the services;
- 3) FM is interpreting needs of the organization and translating them into explicit service demand and requirements on the three levels strategic, tactical and operational as part of its responsibility;
- 4) Deviations between defined requirements and experienced service delivery are highly likely. These shall be subject to communication, quality assurance and the continuous improvement process as part of FM's accountability.

5.2 Pathway from needs to experiencing delivery

5.2.1 Expectations

Parts of an organization or the whole organization have underlying needs which may be explicit. These may also be unstated or implied from other needs which may also be expressed precisely or in vague terms.

The challenge is to define and to provide services and products that will maximize the congruence and conformity between the needs and expectations of / with services. This will trigger satisfaction and excitement in the organization.

5.2.2 Analyse needs and demand

In general terms, EN ISO 41012 explains how, the top management by itself, possibly with the help of outside consulting, should define this demand. This demand (requirements) consist of the description of the requested facility services and their specifications including performance and quality (see EN ISO 41011:2018). The elaboration of this demand continues through the whole process leading to SLA.

The process ending with the creation of a SLA, the demand is refined by more and more precise elements and through iterative discussions with the top management, departments and end-users as well as the service provider.

5.2.3 Specify requirements

The objective of determining requirements is to obtain the requirements which will be part of the specifications of the facility services incorporated within the SLA. These specifications are presented within EN ISO 41012:2018, including performance and quality aspects. Possible techniques to determine organization's needs are to:

- specify the organization;
- conduct organizational requirement research;
- ask what the management wants and why (meetings, surveys, studies, etc.);
- determine requirements through feedback/complaints;
- deploy quality functions for new products (based on organization's "wish list");
- perform due diligence of the existing services and organization / analysis of present status;
- perform benchmarking including sites visits/comparisons with other organizations (similar or not) together with representatives;
- assume that what you already know is what the organization wants and verify understanding so that an awareness is obtained.

5.2.4 Requirements from primary activity

To elaborate the requirements coming from the organizations primary activity the following steps have to be performed:

- 1) understand the primary activities and get information about the organizations objectives (requirements) of the primary activities themselves.
 - a) top management: communication with management of the organization, get the global organization objectives check corporate guidelines, policies (environmental, ethic, etc.), internal rules;
 - b) departments: communication with management of business units, key user groups (varying according to each organization) in order to obtain their requirements;
 - c) end user: obtain their expectation directly or through representatives (internal and external);
 - d) society: rules and regulations, corporate engagement and strategy;
- 2) identify the objectives of organizations primary activity which may be impacted by FM;
- 3) translate corporate strategic objectives to FM strategies and objectives;
- 4) identify the contribution/impact and added value of the product delivery to primary activities (e.g. efficiency, effectiveness, image, human resource support);
- 5) identify and analyse the potential risks / criticality (in the scope of corporate risk management) of the product delivery to the primary activities in case of non-availability or non-performance of it.

5.2.5 Defined requirement in SL/SLA

- Translate needs into corresponding demand: In an internal process the organization has to define (translate /convert) their demands which should meet the needs at its best. Sometimes there is a gap between the often higher expressed expectations and the “right” demand.
- Translate demand into specific requirements: Since demands do not specify explicitly the requirements for corresponding services they have to be formulated.

Requirements are prerequisites for the specification of the SL either described in a tender offer and/or negotiated in a process with the service provider.

The process above to define requirements can be sub-optimal, due to factors including:

- Only a subset (part) of the needs are formulated explicitly;
- The implicit expectations are often not expressed as part of the definition since the organization is not aware of their existence;
- They are furthermore altered and/of filtered due to constraints within organization like: culture, financial, importance to hierarchies, temporal (time pressure), knowledge, and there like, as well as Insufficient communication;
- Faulty and/or incomplete translation process.

As a consequence therefore the SL description (defined requirement) inherits a non-compliance with the needs and therefore leads to a gap between the expected (often not clearly expressed) requirement and the defined requirement.

5.2.6 Delivery

Due to constraints and deviations of providers performance and eventually different providers interpretation and perception of specified characteristics and related indicators in the service level agreement a deviation may accrue.

5.2.7 Perception

At the time of service delivery the characteristic of the product may be perceived or experienced differently (gap) by the organization then intended and communicated or defined (refer to Clause 5).

All the deviations described above (gaps) may become evident and shall be subject to quality assurance and the continuous improvement process.

Under-fulfilment (low quality) of the requirements may have an impact on the primary activities and consequently end user's satisfaction as well as success of the primary activities.

Over-fulfilment is usually ineffective and implies higher cost for the provider and higher prices, leading to economic disadvantages.

5.3 Example sustainability requirements

5.3.1 General

Sustainability is an increasingly important topic for Facility Management professionals, and is becoming more of a mandatory practice than an optional trend. FM has a big lever in this field.

A new regulation concerning the benchmark methodology in the EU requires the consideration of Environment, Social, Governance (ESG) elements. Being responsible for many infrastructures FM is well

positioned to fulfil these new requirements on behalf of the whole organization as part of its compliance duties.

Some principles about FM and sustainability and specifically of a climate compatible development are:

- The less an organization consumes, the more sustainable the organization acts;
- The better the management of the resources, the more sustainable the organization is;
- FM has to measure and optimize the use of the FM resources (utilization);
- FM has to implement concepts, which ensure, that these resources are available in the agreed condition (quality), to the agreed quantity, in the agreed location, within the agreed time frame, with the agreed cost, and the agreed level of sustainability;
- One important aspect is the evaluation of the resources especially of the built environment to ensure, that not future-proof infrastructure eventually needs to be eliminated early by more flexible and better adaptable buildings, grounds and equipment.

Annex H provides descriptions and criteria for a sustainability rating of an (FM) organization where sustainability requirements can be derived from.

For additional information on sustainability and resilience, see CEN ISO/TR 41019 [13] (under development).

5.3.2 Resilience

Resilience is the ability to anticipate and adapt to, resist or quickly recover from a potentially disruptive event, whether natural or man-made (see ISO 15392 [17]). Basis for resilience of an organization is therefore a good risk management which can show the following criteria on strategic level:

- A risk management strategy has been approved by top management
- A risk control matrix is in place and is regularly updated
- Contingency plans are in place and the required processes and responsibilities defined
- Management and staff are educated and there are regular tests and exercises
- Risk management of the core business and the support processes are aligned; in the FM business concept, risk management is integrated and provided to the organization by FM as a service.

What sustainability concerns, probably the most important aspect today is the adaptation to climate change which represents adjustments in ecological, social or economic systems in response to actual or expected climatic stimuli or their effects or climate change impacts, risks and opportunities, with a subsequent improvement in resilience. Tactical steps for addressing climate change can involve:

- Developing the knowledge base;
- Policy and planning approaches to procurement of resources;
- Policy and planning approaches to changes to designs or approvals;
- The modification, relocation or replacement of existing infrastructure;
- The alteration of operations or maintenance regimes.

5.3.3 Emission reduction goal

Due to the more and more commonly agreed need to reduce greenhouse gas emissions and to become less dependent on non-renewable energies, many organizations have set themselves a respective goal within a certain timeframe as part of their sustainability strategy.

Criteria which would need to be met in order to achieve such a goal are as follows:

- A reduction strategy has been approved by top management
- Emissions are measured and reported in transparent way
- Reliable emission factors are applied
- The scope (direct, indirect, embodied, up-/downstream emissions etc.) is well defined
- A reduction plan with defined measures including costs and benefits exists
- There are sufficient budgets allocated to execute the plan
- The organization is ready to invest in compensation or neutralization projects

6 Roles and management competences

6.1 Principles and key messages

The definition of the role and the function of the so called “facility manager” and the associated facility professionals is more complex than it looks at first sight. CEN ISO/TR 41013 describes factors influencing organizational solutions and consequently influencing the role of the facility manager.

- 1) FM requires different competences on the three levels strategic, tactical and operational in order to perform the roles defined in this standard;
- 2) The roles and type and level of competences depend on e.g. goals, demand, resources, changes, responsibilities and accountability, ownership of assets, size of the organization, etc;
- 3) The facility manager in the FM business concept is the head of the FM unit leading and representing the FM unit. In this function he is part of executive c-suite of the organization (e.g. CFMO or CSO) and responsible for the support resources and accountable for the effects;
- 4) Following this definition, the function of the facility manager should never be outsourced in order to keep this knowledge in-house and because no service provider is prepared to take the responsibility for the support resources;
- 5) The roles and tasks performed by the facility manager depend on various factors, most prominently on the size of the organization. The larger the organization the more roles will be shared with or delegated to other FM professionals;
- 6) In order to be able to lead the FM unit on strategic level, the facility manager foremost requires management competences.

In the FM business concept, roles, competences, processes and the services map are linked together.

6.2 Role model

Roles are not necessarily equal to the organizational hierarchy. A role is fulfilled by one or more persons in an organization and each person can have one or more roles in this organization. This depends for example on the size, the complexity, or the business branch of the organization. Examples: In a small start-up company renting some offices the facility services can be handled by any member of the staff without a distinct FM organization. In a real estate company renting out offices spaces, there is a need for FM for the internal support services integration as well for servicing the basic needs of their buildings while all tenants have their own FM for their needs. In a large industrial production company, each role on each level may need one or more persons to be fulfilled properly.

In the FM business concept FM has total responsibility for its service delivery to the organization or its top management, departments and end-users. It is not divided into separate organizational structures, because a dedicated FM function is needed to align the organization's goals and strategies with the support strategies affecting working and built environment.

The organizational models in Figure 2 and Annex A show some roles on executive level. The role of the Facility manager is more complex as it depends on the individual organizational structure. Therefore, EN ISO 41012 talks about the relationship between the demand organization and the function, department or service provider, delivering the service as a decisive factor. If all services are provided in-house, the Facility manager is the head of the internal FM unit and should be part of the executive management reporting directly to the CEO. On the other extreme, if services are predominately outsourced, the role is split into a sourcing responsibility on executive level in the demand organization and a key contact responsibility on the provider side, both linked by the FM agreement. In between, there are many different solutions imaginable. On tactical level, the prime role is the Facility services manager.

For the FM business concept, the following example organizational hierarchy has been adopted, see Figure 5:

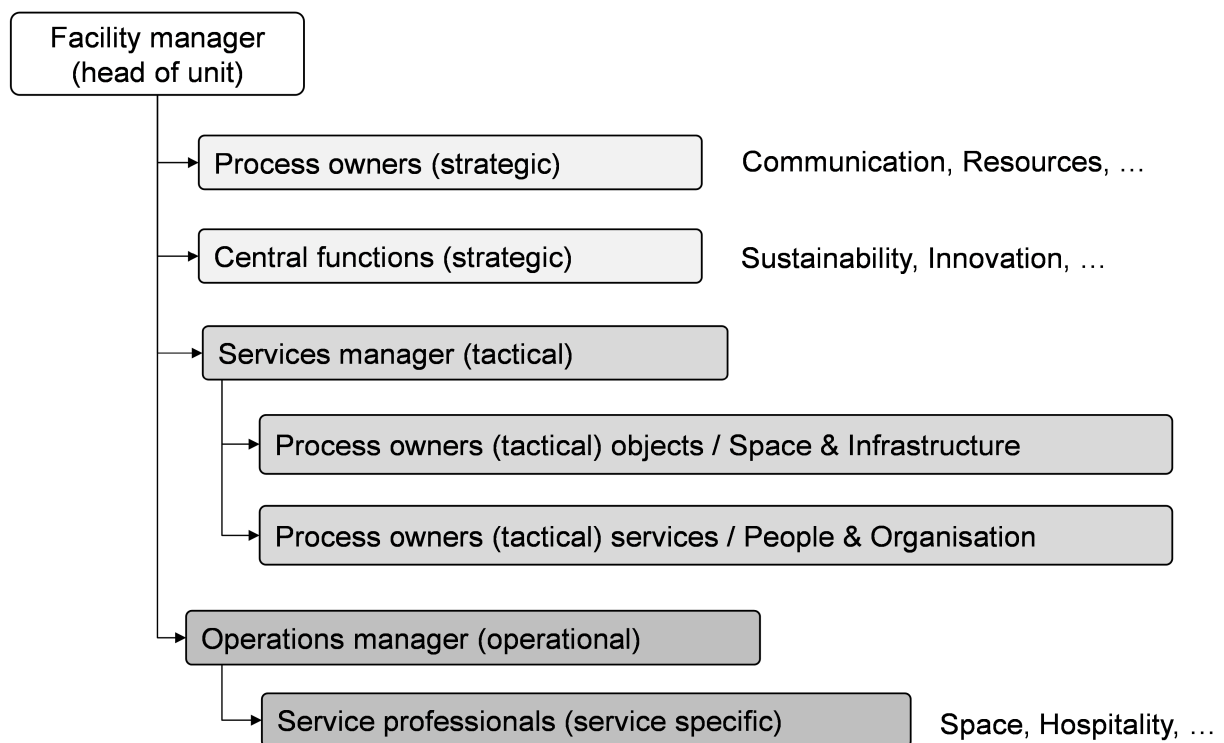


Figure 5— Hierarchical organizational roles in the FM business concept referencing to the facility processes and the services map in this standard

In Annex E, three exemplary hierarchical role models are given where individual role models can be derived from.

- Organizational role model;
- Services provision role model;
- Project role model (e.g. ICT projects or construction projects).

6.3 Competences assignment matrix

Competences can be characterized as follows:

- Professional/technical literacies/competences (knowledge) e.g. professional knowledge;
- Method and cognitive competences (skills) e.g. problem solving and logical thinking skills;
- Social/interpersonal and self-competences (abilities) e.g. self-motivating ability.

There are different structures of competences which are needed for FM. For the FM business concept, a roles and competences assignment matrix has been adopted which refers to the generic management processes, on each level, complemented by the facility services map defined in this standard. A more detailed version is given in Annex F.

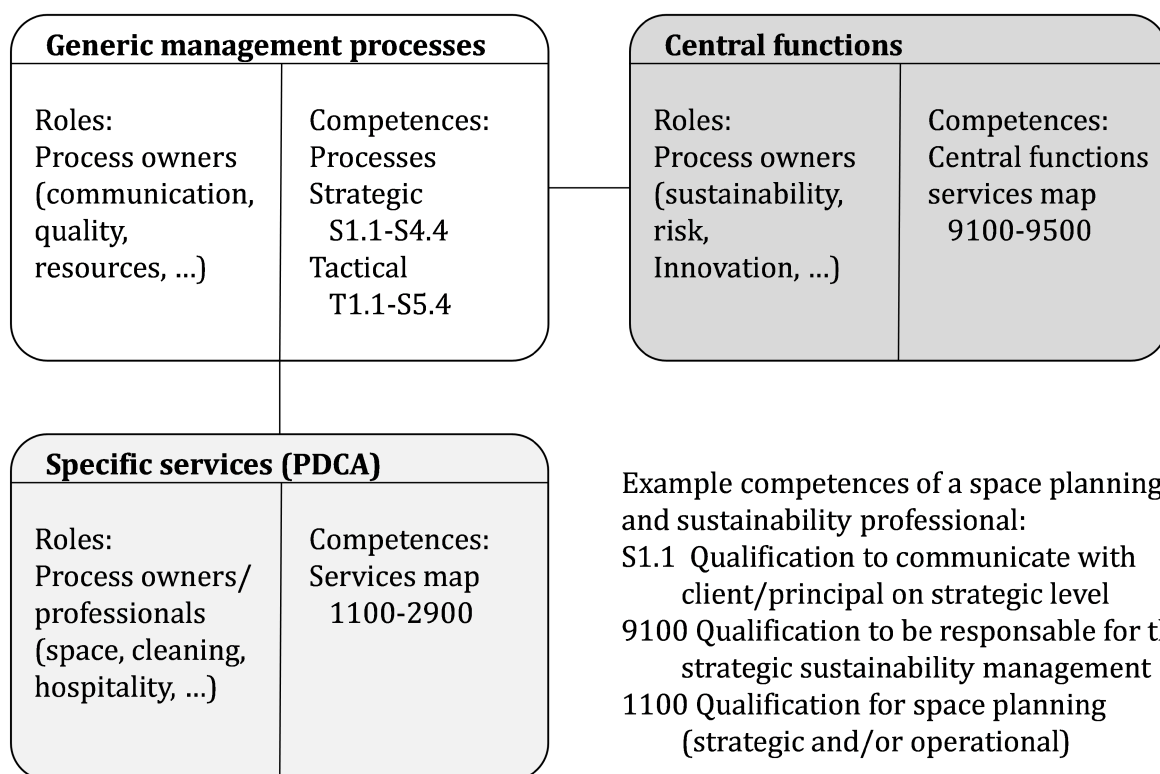


Figure 6 — Schematic of the FM roles and competences assignment matrix

The FM roles and competences assignment matrix, see Figure 6, is centred on the competences needed to execute the generic management processes (process ownership) which are complemented by central function competences and specific services competences.

Using the matrix just like a checklist, the competences to perform the required combination of roles in the individual situation in an organization can be derived from and defined e.g. to write a job specification in order to hire new staff.

6.4 Competences on strategic level

In the FM business concept the following four generic management process chains are employed (refer to Clause 7.3 processes).

- Communication and service orientation: S1.1-1.4
- Quality and risk management: S2.2-2.4
- Leadership: S3.1-3.4
- Resource planning and strategic projects: S4.1-4.4

In Annex E, the required competences relating to these processes are briefly described. Effectively required competences are individual for each organization and therefore need to be defined individually.