

EQF CODE

**Guidelines for the development of
trainings in eContent
Development professions**

<http://www.ubique.org/eqfcode>

Guidelines for the development of trainings in eContent Development professions



Education and Culture DG



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1. Introduction

This training guide is based on the results of extensive research conducted in the framework of the Leonardo project EQF Code. The project was motivated by the growing skills shortage in the Multimedia sector in several European countries, which especially affects the field of e-content development. This skills shortage could be overcome by employing practitioners from other European member states. However, this is hampered by the lack of transparency and comparability of qualifications for these professions at European level, due to the great diversity of vocational training systems across Europe.

Hence one of the main objectives of the EQF Code initiative was to bring more transparency and comparability into e-content development qualifications at European level. In order to achieve this goal, the consortium had to work with the IT-specific e-competence framework and the European Qualification Framework (cf. Chapter 2).

As one of the major results of the EQF Code project, this training guide is intended to offer guidance for European training institutions and all people involved in drafting curricula concerning which knowledge, skills and competences are actually needed in order to excel in these jobs not only at national, but at European level. It is based on field research on the currently existing qualifications in the area of e-content development and on a final comparison of these qualifications against the actual job market needs in seven European countries (cf. Chapter 3).

In order to obtain representative guidelines, we collaborated closely with training institutions as well as policy makers and experts in the field of e-content development in order to come up with a sensible consensus on the training needs in this field at European level. As a result, the present document describes European-valid knowledge, skills and competence requirements for five content development professions, namely Web content developer, Web Content Manager, 3D/ 2D Animator, Webmaster and Web Designer.

Furthermore, definitions for learning objectives and content as a base for defining and formulating work process oriented learning units. (cf. Chapter 4).

2. How to Use this document

The purpose of this document is to facilitate training institutions or HR development professionals to evaluate the currently existing curricula and training offers for the five aforementioned professions: Web content developer, Web Content Manager, 3D/ 2D Animator, Webmaster and Web Designer against the provided suggestions so that existing training offers can be further developed and improved. Moreover, this document can be used as a support tool for trainers and training institutions in order to design a new, European oriented training for the five content development professions stated above.

For professionals in the field of training and HR development, the present guidelines might appear quite unusual, as they reflect trainings from an output-oriented perspective, rather than from the so far more common input-oriented perspective. Thus, the document does not prescribe learning contents that should be implemented in specific training modules. In fact, the suggested learning units describe the learning outcomes and thus, the training objectives that should be achieved in specific fields of activity of the respective profession. This means that an ideal training for these professions should systematically foster the development of the described knowledge, skills and competences. Moreover, it should include methods and procedures for assessing and validating the learning outcomes achieved by the learner, so that training in the various content development professions can lead to a recognised qualification of European relevance.

3. e-CF, EQF and ECVET

All European countries have different education and training systems in the IT-sector. According to the freedom of movement within the European Union (EU), comparability and transparency of qualifications are of highest importance. The e-Competence Framework and the European Qualification Framework were developed by working groups of the European Commission respectively the CEN-ISSS working group in order to achieve better comparability and transparency of qualifications at EU level. Improved transparency and comparability of qualifications should lead to a better recognition of full or partial qualifications acquired in other member states. This process shall be facilitated by ECVET, the European credit transfer system for vocational education and training.

The training guidelines of this manual refer to both frameworks; e-CF and EQF. Furthermore, they give suggestions on how ECVET credit points could be attributed to the overall respectively partial qualifications.

3.1 The European e-Competence Framework (e-CF)¹

The e-CF is a reference framework for European Information and Communication Technology (ICT) competences/ professions. It has been developed by a large number of European ICT and human resource (HR) experts in the context of the CEN / ISSS Workshop on ICT Skills. It addresses ICT user and supply companies, ICT practitioners, managers and HR departments, the public sector and educational and social partners across Europe.

The European e-Competence Framework focuses on competences needed

- to develop, operate and manage ICT projects and processes
- to exploit and use ICT
- to make decisions, develop strategies, and
- to foresee new scenarios.

The e-CF should support all nations regardless of the situation in the different countries. Nations without an existing ICT competence model should be able to implement such a system and nations with an existing model are supported in the common European translation.

The e-CF is made of four dimensions. These dimensions reflect different levels of business and HR planning requirements in addition to job/work proficiency guidelines.

Dimension 1 consists of 5 e-Competence areas derived from the ICT business processes. These areas reflect its main sub-processes, from a very general perspective. PLAN – BUILD – RUN – ENABLE – MANAGE

1 Source: User guidelines for the application of the European e-Competence Framework; www.ecompetences.eu

Dimension 2 shows a set of reference e-Competences for each area, with a generic description for each competence. These 32 competences provide the European generic reference definitions of the framework.

Dimension 3 reflects the proficiency levels of each e-Competence and provides European reference level specifications on e-Competence levels e-1 to e-5.

Dimension 4 contains knowledge and skills that are related to the e-Competences and indicated as optional framework components for inspiration. In case of the five European specialist profiles of this manual Dimension 4 contains only the CompTrain competences.

For further information please refer to www.ecompetences.eu.

3.2 The European Qualifications Framework (EQF)²

The EQF is a reference framework to which national qualification frameworks and qualifications can be linked. It acts as a translation device to make the different qualifications more readable and understandable across Europe. At least until 2012 all countries should have linked their individual qualification certificates to the appropriate EQF-level.

The two principal aims of EQF are:

- to promote citizens' mobility between countries and
- to facilitate their lifelong learning.

The EQF has got eight reference levels that range from basic qualifications (Level 1: e.g. school leaving certificates) to advanced qualifications (Level 8: e.g. Doctorates). In view of lifelong learning it covers all levels of qualifications acquired in general, vocational and academic education and training.

As it is easier to compare learning outcomes than inputs (e.g. length of study) the eight levels are described in terms of learning outcomes. A learning outcome is defined as a statement of what a learner knows, understands and is able to do on completion of a learning process. Learning outcomes are divided in knowledge, skills and competences.

3.3 The relationship between the e-Competence levels and the EQF levels³

The e-Competence Framework (e-CF) aligns to the European Qualifications Framework (EQF) categories for reference purposes. The level descriptors differ between the EQF and e-CF because the e-CF addresses the industry and uses descriptions for ICT professional competences as needed at the workplace, i.e.

2 Source: The European Qualifications Framework for Lifelong Learning (EQF); <http://ec.europa.eu/education>

3 Source: User guidelines for the application of the European e-Competence Framework; www.ecompetences.eu

a workplace competence perspective. The EQF, on the other hand, reflects a qualifications perspective.

However, there is a common approach how to link both frameworks: As the industry-addressed e-CF consists of only 5 levels whereas qualifications-based EQF consists of 8 levels, the levels have been linked as follows by an expert working group:

e-Competence Level	EQF Level*
5	8
4	7
3	6
2	4 and 5
1	3

* EQF level 1 and 2 are not relevant in this context.

3.4 How to Apply ECVET to Content Development professions

The ECVET recommendations lately approved by the European Parliament are intended to foster transnational mobility as part of initial or continuing vocational training at European level by facilitating the recognition of learning outcomes achieved in other European countries. The large diversity of vocational educational systems in Europe e.g. on-the-job vs. off-the-job training, formal vs. informal qualifications and different durations of vocational trainings have rendered the recognition of qualifications achieved in other member states difficult.

The now suggested approach by ECVET, however, does not request harmonisation of qualifications or VET systems. Instead it rather emphasises on learning outcomes independent from the training form or system in which these learning outcomes have been achieved. It is the output which is considered important and which will be assessed and furnished with ECVET credit points that will be recognised in the country of destination. In order to give orientation of the total amount of ECVET credit points that can be attributed to a qualification, the ECVET recommendations suggest that one year of full time vocational training should be equivalent to 60 ECVET points.

The application of the ECVET recommendations to already officially established, regulated and well-described qualifications should be relatively easy to achieve. However, with content development professions the case is different. The problem with qualifications in the field of content development is that these qualifications are still „young“ qualifications that have been evolving with the internet and continuously developing further on. Therefore, training for content development professions is mostly not standardised or non-formal. Furthermore, the duration and the training

contents of these vocational trainings already differ within one European country, not to mention between different European countries.

The training recommendations that will be given in chapter 4 of this document and the consolidated specialist profiles on which they are based are a first attempt to describe core competences and key learning outcomes in these jobs which are valid throughout Europe. However, as they are strictly output-oriented, they only give suggestions for learning outcomes to be achieved, but do not recommend any ideal duration, form, method or content for the vocational training. Thus, an attribution of absolute ECVET credit points to qualifications in the content development sector not possible for the time being.

However, preparatory work for applying the ECVET principles to these qualification profiles has been carried out by developing an approach of weighting all learning units of a qualification with respect to the overall qualification. Furthermore, a calculation method is proposed that supports the quantification of accomplished learning outcomes in ECVET points:

The approach is based on the assumption that a full qualification in the field of content development, which encompasses all learning outcomes as stated in these guidelines is equal to 100%. On this basis every learning unit of the qualification has been weighted with respect to the respective overall qualification (e.g. learning unit 1: 12%, learning unit 2: 5% etc). In the following the possible conversion into ECVET points will be demonstrated in a concrete use case:

Example: In Germany the overall qualification for a Web Designer takes 1 year and in Hungary 1 ½ years. This means in Germany the overall qualification for a Web Designer is equal to 60 ECVET credit points, whereas in Hungary it is equivalent to 90 ECVET credit points. If for instance the learning unit „Design and Development“ is weighted 15% of the overall qualification, in Germany you would need 9 ECVET credit points for having this learning unit fully accomplished (calculation formula = 15% of 60 ECVET points). In case a German Web Designer spends 2 months of his training Hungary with the learning unit „Design and Development“ these two months working experience in this field would be equal to 10 ECVET credit points in Hungary (calculation formula = 2months/ 18 months * 90 ECVET points).

This means for the German Web Designer that he could achieve 10 ECVET credit points in the learning unit „Design and Development“ during his stay in Hungary. As he needs only 9 ECVET points in Germany to have the unit fully accomplished, he doesn't have to redo the learning unit in Germany again.

In the training recommendations given in chapter 4, the relative weight of each learning unit in relation to the overall qualification was added under the heading of every learning unit, in order to lay the groundstone for the future implementation of ECVET in the vocational education and training systems for content development professions.

4. Market needs

Today, the lack of harmonised descriptions of jobs and in consequence, qualification descriptions and thus, clear definitions of skills and competences needed, reduce the market chances of both professionals to find an adequate job as well as companies to find adequate staff.

Therefore these training- guidelines try to focus on a matching of the actual market needs and existing training offers.

The ongoing survey of the International Observatory for Multimedia Jobs www.multimedia-observatory.org provides an informative basis of required skills and competences according to market needs in European multimedia jobs.

This Europe-wide survey, established in the frame of „Comp Train“, a project co-funded by the Leonardo da Vinci Programme in 2005, facilitated an analysis of the market needs through questionnaires aimed at companies (SMEs), training institutions, and professionals in the multimedia sector.

The feedback of about 500 SME ´s in the multimedia sector in the last 24 months has been taken into account to build up market-orientated European specialist profiles.

5. Recommendations for training modules

In extensive field research during the European-funded Leonardo da Vinci Project "EQF Code" in 2008-2010 in the participating European countries of Austria, France, Germany, Hungary, Slovenia, Spain, and Switzerland, 5 professions were identified as "core" professions in the field of e-content development which are prevalent in all participating countries: Web Content Manager, Web content developer, Web Designer, 2D/3D Animator and Webmaster. Based on this research European Specialist Profiles (EUSP) were created, which are generic profiles that represent the consensus of qualifications in the 5 studied professions at European level. The profiles represent the core knowledge, skills and competences that should be trained and are needed in all countries involved in the project.⁴

In the course of researching the aforementioned professions we shared the following understanding of these professions: The Web Content Manager manages the relationship between the broader business perspective and the rest of the web development team, collects the client requirements and forwards them to the more narrowly focused professionals in his team who will actually plan, prepare -then operate- a website. Webpages are planned and produced as a co-operative venture between Web Designers (focusing on page layout), Web Content / Multimedia Developers (responsible for aggregating uploading and continuously refreshing the textual and multimedia content of the website), potentially involving a Digital animator/2D-3D specialist whenever needed. The seamless operation and administration of the website on a day to day basis (including server administration, security and backup measures as well as necessary upgrades) is carried out by the Webmaster.

However, it must be emphasised that in SMEs, some of these professional functions may be united in one job description. Often, a Web Designer, once s/he has done his layout, becomes a web content developer and a webmaster. The Web Content Manager function is often assumed by senior management (CEO or marketing manager). Thus, a certain flexibility in the training curricula will be necessary to accommodate the needs of SMEs that are not in the position to employ narrowly specialised personnel for every single function.

This chapter on the training recommendations is structured the following way: For each qualification, a general description of the role and tasks in the respective profession is provided. It is followed by a list of learning outcomes, i.e. knowledge, skills and competences, an eContent Development professional in his specific professional field should have. According to the work processes in which Content Development professionals are usually involved, suggestions are given for learning units through which this knowledge, skills and competences could be developed. In general, the work processes PLAN, BUILD and RUN are core areas of eContent Development professionals whilst ENABLE and MANAGE are cross-cutting issues referred and related to the former. PLAN and ENABLE represent strategic areas, within companies that conceive, decide, design and set up products, services, actions and policies. BUILD and RUN on the other hand provide operative subprocesses

4 The European specialist profiles can be downloaded on the project's website <http://www.ubique.org/eqfcode>.

where companies act and do things. Finally, MANAGE represents companies' daily business administration and improvement.

In order to facilitate a future recognition of the acquired learning outcomes in the different European qualifications systems, all learning units have been weighted according to their relative importance in relation to the overall qualification. All learning

In the final chapter of each training profile, suggestions are given for classifying and attributing the respective qualification to the e-CF and EQF.

5.1 Web Designer

5.1.1 Job description

A web designer is the creator of the website from an overall design point of view. A core responsibility of the designer's job is to present information in a way that is both accessible and memorable. The web designer therefore needs mostly graphic design and creative competences. This does not include heavy programming and software development tasks (e.g. coding the various elements of a Content Management System (CMS) - the backbone of most state-of-the art websites) which are usually handled by a web programmer (a function that was not analysed specifically as it is very close to software programmer). In many cases, the web designer can be given the responsibility to manage the website and may act as webmaster (especially in SMEs).

5.1.2 Competences

A web-designer should be trained according to the work processes in which s/he is involved in his job. In the following the competence areas/ learning outcomes/ contents are described that should be trained for every single work phase.

1. PLAN

Weighting of the activity (in reference to ECVET): 13%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for the successful handling of multimedia-software, applications, hardware
- Has programming skills for the (further) development of multimedia-applications, software, websites etc.
- Prepares content modules
- Knows how to optimize a site according to the requirements of search engines
- Writes requirements specifications, technical specifications and reports (clear, precise and detailed)

Management knowledge, skills and competences

- Is familiar with the technical trends / general business culture of the branch/ industry
- Knows the basic of law in the field of activity (contract law, intellectual property rights)
- Conducts feasibility studies (technical specifications)
- Has knowledge of usability research
- Analyses the relevance of choices
- Develops/finds solutions and validates their relevance and their consequences

Personal and social knowledge, skills and competences

- Has creativity and imagination

- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is committed to corporate strategy, culture and objectives

b. Learning units (What are the suggested training fields/ learning fields?)

A.1. IS and Business Strategy Alignment (1%)

The Web Designer is aware of long term business requirements and is able to make input to the upper management on the development of the Information System model. S/he is able to report incoherencies in the implementation of strategic ICT policy of the enterprise to the upper management.

A.4. Specification Creation (2,5%)

In analysing and defining the current and target status of a content module, the Web Designer acts systematically in estimating cost effectiveness and design decision templates. S/he maintains a project diary and exploits specialist knowledge in the specification development to create and maintain standard and complex documents of the project or content module (such as structure plans, timescales, milestone descriptions).

A.5. Systems Architecture (2%)

The Web Designer contributes to a formal approach to implement ICT technology in line with business requirements. S/he therefore identifies the components required, hardware, software and technology platforms that need to be integrated to meet current and future needs of the product. S/he has a large understanding of ICT technology to be deployed in multiple IT projects and ensures that all technical aspects take account of interoperability, scalability and usability.

A.6. Application Design (6%)

During the planning and specification process of the content module, the Web Designer organises the overall planning of the design of the module or application in accordance with ICT policy and user or customer needs. S/he estimates costs of development, installation and maintenance and selects technical options for building the application. S/he validates the models with representative users.

A.7. Technology Watching (1.5%)

The Web Designer is aware of technology improvements in his field of competence and is able to integrate them into specification of the application or content module. S/he therefore contributes added value by making steps towards improvements in efficiency, productivity quality or competitiveness of the developed content module or application.

2. BUILD

Weighting of the activity (in reference to ECVET): 57%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for successful handling of multimedia-software, applications, hardware, etc.

- Handles picture and graphics management software
- Has programming skills for the (further) development of multimedia-applications, software, websites etc.
- Handles design methods in content development
- Creates graphic documents, layouts and web design
- Develops and manages databases
- Knows how to optimize a site according to the requirements of search engines
- Knows how to integrate various components of an application / website
- Maintains / updates an application, a site, a software, a computer, a network...
- Tests / validates an application, a software and submits reports
- Documents a text, an application, the functions of a software, a website
- Knows how to make use of search engines on the internet

Management knowledge, skills and competences

- Understands theoretical background and development of media
- Has good knowledge of the principles of marketing / online marketing
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the native language
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the foreign language

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is aware of the importance of details and precision

b. Learning units (What are the suggested training fields/ learning fields?)

B.1. Design and Development (38%)

The Web Designer acts systematically and creatively to develop, design, engineer and integrate software modules and different components into a larger product. S/he always considers the required specifications. S/he tests singular units and the whole system to ensure that all functional and performance criteria are met.

B.2. Systems Integration (7%)

The Web Designer identifies systematically the compatibility of different software and hardware specifications and installs them into an existing or proposed system. To ensure integrity and interoperability s/he complies with established processes and procedures and considers the specification, capacity and compatibility of existing and new modules. S/he documents the successful integration and all activities during the installation and records deviations and remedial activities.

B.3. Testing (4%)

S/he has specialist knowledge to organise complex testing programmes for IT systems or customer usability requirements. These tests ensure that all internal, external, national and international standards are met and that the performance of the new or revised components or systems conforms to the expectation. By documenting and reporting the tests and results s/he provides an important input to all involved persons like designers, users or maintainers and to evidence certification requirements.

B.4. Solution Deployment (7%)

S/he is involved in the solution construction and the communication with the client. His field of activity includes the configuration (i.e. installation, upgrade, decommission) of hardware, software and the network to ensure the interoperability of system components. S/he follows predefined general standards of practice. S/he builds or deconstructs system elements in a complex environment. S/he identifies non-performing components and establishes root cause of failure within the overall solution. The user gets a fully operational solution from him. S/he completes the documentation by recording all relevant information including equipment addresses, configuration and performance data. S/he supports his less experienced colleagues and gives advice on aligning work processes and procedures with software upgrades. But if required s/he also engages specialist resources (e.g. third party network providers).

B.5. Technical Publications Development (1%)

S/he takes input from technical authors to organise the production of different documents according to the requirement of the project or application. S/he prepares the presentation by selecting the appropriate style and media and by describing the different function and features. The Web Designer is also responsible for the document-management system and the update and validation of the existing documentation.

3. RUN

Weighting of the activity (in reference to ECVET): 18%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has programming skills for the (further) development of multimedia-applications, software, websites, etc.
- Maintains / updates an application, a site, a software, a computer, a network...

Management knowledge, skills and competences

- Knows the communication rules on the Internet in the native language
- Knows the communication rules on the Internet in a foreign language

Personal and social knowledge, skills and competences

- Is able to analyse and solve problems
- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is aware of the importance of details and precision (accurateness)

b. Learning units (What are the suggested training fields/ learning fields?)

C.1. User support (5.5%)

After interpreting user problems by applying different questioning techniques s/he issues the relevant information to the user. S/he creates a solution database to resolve incidents faster. S/he ensures that agreed service levels are met, that the support is available within user business hours and that the service and system

performance is improved continually. S/he works together with senior operatives to solve complex and unresolved incidents. S/he is also responsible for the budget management

C.2. Change support (2.5%)

S/he implements and provides guidance for the evolution of an IT solution. S/he controls and schedules all modifications of software or hardware to prevent an unpredictable outcome because of multiple upgrades. S/he maintains coherence to the service level agreement by responding systematically to day-by-day operational needs, reacting to them and by avoiding service disruptions.

C.3. Service Delivery (3.5%)

The Web Designer acts systematically to analyse performance data and communicates these findings to his senior colleagues. S/he handles monitoring and management tools such as Scripts and Procedures. S/he updates the operational document library and logs all operational events. S/he ensures a stable and secure application and ICT infrastructure by escalating potential service level failures and recommending actions for service improvement.

C.4. Problem Management (6.5%)

S/he has specialist knowledge and understands the IT infrastructure and problem management process. S/he is able to identify failures and the root cause of incidents within the Information System rapidly, to resolve (i.e. repair, replace or reconfigure) them with minimum outage and to prevent a recurrence of them by documenting these problems for future analysis.

4. ENABLE

Weighting of the activity (in reference to ECVET): 2%

a. Learning outcomes (What is the required output of the training?)

Personal and social knowledge, skills and competences

- Is customer-orientated and able to imagine the user perspective and to adapt decisions

b. Learning units (What are the suggested training fields/ learning fields?)

D.5. Sales Proposal Development (2%)

The Web Designer organises the collaboration between the relevant internal departments (e.g. technical, sales and legal) to meet customer solution requirements. That means that s/he is responsible for the organisations capacity to deliver and the development of technical proposals. S/he tries to find an 'off the shelf' solution for different customer requirements.

5. MANAGE

Weighting of the activity (in reference to ECVET): 10%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Manages a data-processing network (safety, right of access, daily maintenance)

Management knowledge, skills and competences

- Is familiar with the technical trends / business culture of the branch /industry
- Has presentation and moderation skills
- Schedules working processes and prioritizes tasks (time management)
- Develops and applies a user behaviour evaluation system
- Analyzes the relevance of choices (critical self-reflection)
- Develops / finds solutions and validates their relevance and their consequences

Personal and social knowledge, skills and competences

- Is able to work in a team
- Is committed to corporate strategy, culture and objectives
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns

b. Learning units (What are the suggested training fields/ learning fields?)

E.2. Project and Portfolio Management (2%)

He understands and applies the principle of project management. That means that s/he defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. s/he is able to apply methodologies, tools and processes. s/he is able to meet identified business needs by implementing new, internal or external defined processes. S/he makes choices, gives instructions and bears responsibility for a team (i.e. relationship within the team, team objectives). Sometimes s/he takes the overall responsibility for an ICT project (i.e. outcomes, finance, resource management, time management). S/he also creates and maintains documents to facilitate the monitoring of project progress.

E.3. Risk Management (1%)

He implements the risk management considering information systems and the application of the enterprise defined risk management policy and procedure. S/he understands and applies the principles of risk management (i.e. assesses risk, documents potential risk and containment plans) and is able to investigate ICT solutions to mitigate identified risks.

E.4. Relationship Management (6%)

He is responsible for a positive business relationship between the client and the internal or external provider deploying and complying with organisational processes. S/he maintains a regular communication with them and s/he is familiar with their environment. S/he ensures that all the needs, concerns and also complaints of the client, partner and supplier are understood and addressed in accordance with

organisational policy. S/he accounts for his own and others actions in managing a limited client base.

E.8. Information Security Management (1%)

He is responsible for the information security policy. That includes its implementation and the analysis and management of security risks with respect to the enterprise data and information. His field of activity also contains the review of security incidents and the formulation of recommendations for the continuous security enhancement. The Web Designer scans the environment to identify and define vulnerabilities and threats. Non-compliances are recorded and escalated.

5.1.3 e-CF and EQF Levels

The web-designer will complete most of these learning units with the e-CF Level 2. According to the table in Chapter 2 the dominating e-CF Level 2 results in the EQF Levels 4 and 5.

5.2 Web Content / Multimedia Developer

5.2.1 Job description

The web content/multimedia developer researches options, decides on the optimal choice and formulates them for visualization on a web page or other digital medium. In doing so, s/he determines the specifications and directs other team members (particularly the web designer), giving them technical and design constraints to be respected. Additionally, the web content/multimedia developer aggregates (collects and/or produces), uploads and continuously refreshes the textual and multimedia content of the website/medium. Content may consist of text, graphics, pictures, audiovisual files etc.

5.2.2 Competences

A web content developer should be trained according to the work processes in which he is involved in his job. In the following the competence areas/ learning outcomes/ contents are described that should be trained for every single work phase.

1. PLAN

Weighting of the activity (in reference to ECVET): 16,5%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for the successful handling of multimedia-software, applications, hardware, etc.
- Has programming skills for the (further) development of multimedia-applications, software, websites, etc.
- Prepares content modules
- Applies content standards
- Knows how to optimize a site according to the requirements of search engines
- Is aware of inclusive design methodologies (elderly, handicapped, etc.)

Management knowledge, skills and competences

- Knows the basics of law in the field of activity (contract law, intellectual property rights...)
- Is familiar with the technical trends / business culture of the branch /industry
- Conducts feasibility studies (technical)
- Has knowledge of usability research
- Analyses the relevance of choices
- Writes requirements specifications, technical specifications and reports (clear, precise and detailed)
- Develops / finds solutions and validates their relevance and their consequences

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is committed to corporate strategy, culture and objectives
- Is customer-orientated and able to imagine the user perspective and to adapt decisions

b. Learning units (What are the suggested training fields/ learning fields?)

A.1. IS and Business Strategy Alignment (1%)

The Web Content / Multimedia Developer is aware of long term business requirements and is able to implement requirements regarding the Information System model as communicated by the upper management. S/he is able to report incoherencies in the implementation of strategic ICT policy of the enterprise to the upper management.

A.4. Specification Creation (4.5%)

In analysing and defining the current and target status of a content module, the Web Content / Multimedia Developer acts systematically in estimating cost effectiveness and design decision templates. S/he maintains a project diary and exploits specialist knowledge in the specification development to create and maintain standard and complex documents of the project or content module (such as structure plans, timescales, milestone descriptions).

A.5. Systems Architecture (2,5%)

The Web Content / Multimedia Developer contributes to a formal approach to implement ICT technology in line with business requirements. S/he therefore identifies the components required, hardware, software and technology platforms that need to be integrated to meet current and future needs of the product. S/he has a large understanding of ICT technology to be deployed in multiple IT projects and ensures that all technical aspects take account of interoperability, scalability and usability.

A.6. Application Design (6,5%)

During the planning and specification process of the content module, the Web Content / Multimedia Developer organises the overall planning of the design of the module or application in accordance with ICT policy and user or customer needs. S/he estimates costs of development, installation and maintenance and selects technical options for building the application. S/he validates the models with representative users.

A.7. Technology Watching (2%)

The Web Content / Multimedia Developer is aware of technology improvements in his field of competence and is able to integrate them into specification of the application or content module. S/he therefore contributes added value by making steps towards improvements in efficiency, productivity quality or competitiveness of the developed content module or application.

2. BUILD

Weighting of the activity (in reference to ECVET): 63%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for successful handling of multimedia-software, applications, hardware, etc.
- Handles pictures and graphic managing software
- Has programming skills for the (further) development of multimedia-applications, software, websites etc.
- Handles design methods in content development
- Develops and manages databases
- Applies content standards
- Documents a text, an application, the functions of a software, a website
- Creates 2D and/or 3D animations
- Creates graphic documents, layouts and web design
- Knows how to optimize a site according to the requirements of search engines
- Tests / validates an application, a software and submits reports
- Maintains / updates an application, a site, a software, a computer, a network...

Management knowledge, skills and competences

- Understands theoretical background and development of media
- Analyses different sources of information
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the native language
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the foreign language

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is aware of the importance of details and precision (accurateness)
- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns
- Is able to work in a team
- Imparts / explains technical knowledge to others, has a sense of teaching

b. Learning units (What is the suggested input from the training?)

B.1. Design and Development (48.5%)

The Web Content / Multimedia Developer acts systematically and creatively to develop, design, engineer and integrate software modules and different components into a larger product. S/he always considers the required specifications. S/he tests singular units and the whole system to ensure that all functional and performance criteria are met.

B.2. Systems Integration (3.5%)

The Web Content / Multimedia Developer identifies systematically the compatibility of different software and hardware specifications and installs them into an existing or proposed system. To ensure integrity and interoperability s/he complies with established processes and procedures and considers the specification, capacity and compatibility of existing and new modules. S/he documents the successful integration and all activities during the installation and records deviations and remedial activities.

B.3. Testing (3%)

He is able to organise testing programmes for IT systems or customer usability requirements. These tests ensure that all internal, external, national and international standards are met and that the performance of the new or revised components or systems conforms to the expectation. By documenting and reporting the tests and results s/he provides an important input to evidence certification requirements.

B.4. Solution Deployment (6%)

He is involved in the solution construction and the communication with the client. His field of activity includes the configuration (i.e. installation, upgrade, decommission) of hardware, software and the network to ensure the interoperability of system components. S/he follows predefined general standards of practice. S/he builds or deconstructs system elements in a complex environment. S/he identifies non performing components and establishes root cause of failure within the overall solution. The user gets a fully operational solution from him. S/he completes the documentation by recording all relevant information including equipment addresses, configuration and performance data. S/he supports his less experienced colleagues but if required s/he also engages specialist resources (e.g. third party network providers).

B.5. Technical Publications Development (2%)

He takes input from technical authors to organise the production of different documents according to the requirement of the project or application. S/he prepares the presentation by selecting the appropriate style and media and by describing the different function and features. The Web Content / Multimedia Developer is also responsible for the document-management system and the update and validation of the existing documentation.

3. RUN

Weighting of the activity (in reference to ECVET): 12,5%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Maintains / updates an application, a site, a software, a computer...

Management knowledge, skills and competences

- Knows the communication rules on the Internet in the native language

Personal and social knowledge, skills and competences

- Is aware of the importance of details and precision
- Is customer-orientated and able to imagine the user perspective and to adapt decisions

- Is able to analyse and solve problems

b. Learning units (What are the suggested training fields/ learning fields?)

C.1. User support (6%)

After interpreting user problems by applying different questioning techniques he issues the relevant information to the user. He creates a solution database to resolve incidents faster. S/he ensures that the service and system performance is optimised. S/he works together with senior operatives to solve complex and unresolved incidents.

C.2. Change support (0.5%)

He implements and provides guidance for the evolution of an IT solution. S/he controls and schedules all modifications of software or hardware to prevent an unpredictable outcome because of multiple upgrades. S/he maintains coherence to the service level agreement by responding systematically to day by day operational needs, reacting to them and by avoiding service disruptions.

C.3. Service Delivery (2%)

The Web Content / Multimedia Developer acts systematically to analyse performance data and communicates these findings to his senior colleagues. S/he handles monitoring and management tools such as Scripts and Procedures. S/he updates the operational document library and logs all operational events. S/he ensures a stable and secure application and ICT infrastructure by escalating potential service level failures and recommending actions for service improvement.

C.4. Problem Management (4.0%)

He has specialist knowledge and understands the IT infrastructure and problem management process. S/he is able to identify failures and the root cause of incidents within the Information System rapidly, to resolve (i.e. repair, replace or reconfigure) them with minimum outage and to prevent a recurrence of them by documenting these problems for future analysis.

5. MANAGE

Weighting of the activity (in reference to ECVET): 8%

a. Learning outcomes (What is the required output of the training?)

Management knowledge, skills and competences

- Is familiar with the general business culture of the branch /industry
- Has presentation and moderation skills
- Conducts feasibility studies
- Analyzes the relevance of choices (critical self-reflection)
- Schedules working processes and prioritizes tasks (independently) (time management)
- Develops / finds solutions and validates their relevance and their consequences

Personal and social knowledge, skills and competences

- Is able to work in a team
- Commits to corporate strategy, culture and objectives
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns

b. Learning units (What are the suggested training fields/ learning fields?)

E.2. Project and Portfolio Management (2%)

S/he understands and applies the principle of project management. That means that s/he defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. S/he is able to apply methodologies, tools and processes. S/he is able to meet identified business needs by implementing new, internal or external defined processes. S/he makes choices, gives instructions and bears responsibility for a team (i.e. relationship within the team, team objectives). Sometimes s/he takes the overall responsibility for an ICT project (i.e. outcomes, finance, resource management, time management). S/he also creates and maintains documents to facilitate the monitoring of project progress.

E.3. Risk Management (1%)

S/he implements the risk management considering information systems and the application of the enterprise defined risk management policy and procedure. S/he understands and applies the principles of risk management (i.e. assesses risk, documents potential risk and containment plans) and is able to investigate ICT solutions to mitigate identified risks.

E.4. Relationship Management (5%)

S/he is responsible for a positive business relationship between the client and the internal or external provider deploying and complying with organisational processes. S/he maintains a regular communication with them and s/he is familiar with their environment. S/he ensures that all the needs, concerns and also complaints of the client, partner and supplier are understood and addressed in accordance with organisational policy. S/he accounts for his own and others actions in managing a limited client base.

5.2.3 e-CF and EQF Levels

The Web Content / Multimedia Developer will complete most of these learning units with the e-CF Level 2. According to the table in Chapter 2 the dominating e-CF Level 2 results in the EQF Levels 4 and 5.

5.3 Digital Animator – 2D/3D Specialist

5.3.1 Job description

A digital animator/2D-3D specialist is the creator of moving pictures in a digital environment, using 2D or 3D techniques. This is often also referred to as computer animation, computer-generated imagery (CGI), virtual animation etc. It has been agreed to call this function "digital animator" to underline its media-neutral approach.

5.3.2 Competences

A Digital Animator – 2D/3D Specialist should be trained according to the work processes in whichs/he is involved in his job. In the following the competence areas/ learning outcomes/ contents are described that should be trained for every single work phase.

1. PLAN

Weighting of the activity (in reference to ECVET): 11%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for the successful handling of multimedia-software, applications, hardware
- Applies content standards

Management knowledge, skills and competences

- Is familiar with the technical trends / general business culture of the branch/ industry
- Knows the basic of law in the field of activity (contract law, intellectual property rights)
- Conducts feasibility studies (technical)
- Has knowledge of usability research
- Analyses the relevance of choices
- Writes requirements specifications, technical specifications and reports (clear, precise and detailed)
- Develops/finds solutions and validates their relevance and their consequences

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is customer-orientated and able to imagine the user perspective and to adapt decisions

b. Learning units (What are the suggested training fields/ learning fields?)

A.4. Specification Creation (4%)

In analysing and defining the current and target status of a content module, the digital animator/2D-3D specialist estimates cost effectiveness and design decision

templates.S/he maintains a project diary and exploits specialist knowledge in the specification development to create and maintain standard and complex documents of the project or content module (such as structure plans, timescales, milestone descriptions).

A.5. Systems Architecture (0.5%)

The digital animator/2D-3D specialist contributes to a formal approach to implement ICT technology in line with business requirements.S/he therefore identifies the components required, hardware, software and technology platforms that need to be integrated to meet current and future needs of the product.S/he is able to define ICT technology and specification to be deployed in multiple IT projects.S/he ensures that all technical aspects take account of interoperability, scalability and usability.

A.6. Application Design (4.5%)

During the planning and specification process of the content module, the digital animator/2D-3D specialist organises the overall planning of the design of the module or application in accordance with ICT policy and user or customer needs.S/he estimates costs of development, installation and maintenance and selects technical options for building the application.S/he validates the models with representative users.S/he ensures that the application is correctly integrated within a complex environment.

A.7. Technology Watching (2%)

The digital animator/2D-3D specialist is aware of technology improvements in his field of competence and is able to integrate them into specification of the application or content module.S/he therefore contributes added value by making steps towards improvements in efficiency, productivity quality or competitiveness of the developed content module or application.

2. BUILD

Weighting of the activity (in reference to ECVET): 73%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for successful handling of multimedia-software, applications, hardware, etc.
- Handles picture and graphics management software
- Has programming skills for the (further) development of multimedia-applications, software, websites etc.
- Handles design methods in content development
- Uses and applies visual, drawing, sculpting abilities
- Creates graphic documents, layouts and web design
- Applies content standards
- Creates 2D and/or 3D animations
- Maintains / updates an application, a site, a software, a computer, a network...
- Tests / validates an application, a software and submits reports
- Documents a text, an application, the functions of a software, a website

Management knowledge, skills and competences

- Understands theoretical background and development of media
- Processes and understands interactive virtual environments
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the native language
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the foreign language

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is aware of the importance of details and precision
- Is able to work in a team
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns
- Is customer-orientated and able to imagine the user perspective and to adapt decisions

b. Learning units (What are the suggested training fields/ learning fields?)

B.1. Design and Development (59%)

The digital animator/2D-3D specialist acts systematically and creatively to develop, design, engineer and integrate software modules and different components into a larger product. S/he always considers the required specifications. S/he tests singular units and the whole system to ensure that all functional and performance criteria are met.

B.2. Systems Integration (6%)

The digital animator/2D-3D specialist installs the hardware and software into an existing or proposed system. To ensure interoperability and integrity of the overall system functionality and reliability s/he complies with established processes and procedures. S/he considers the specification, capacity and compatibility of existing and new modules.

B.3. Testing (3%)

S/he has specialist knowledge to organise complex testing programmes for IT systems or customer usability requirements. These tests ensure that all internal, external, national and international standards are met and that the performance of the new or revised components or systems conforms to the expectation. By documenting and reporting the tests and results s/he provides an important input to all involved persons like designers, users or maintainers and to evidence certification requirements.

B.4. Solution Deployment (3%)

S/he is involved in the solution construction and the communication with the client. His field of activity includes the configuration (i.e. installation, upgrade, decommission) of hardware, software and the network to ensure the interoperability of system components. S/he follows predefined general standards of practice. S/he builds or deconstructs system elements in a complex environment. S/he identifies non performing components and establishes root cause of failure within the overall solution. The user gets a fully operational solution from him. S/he completes the documentation by recording all relevant information including equipment addresses,

configuration and performance data.S/he supports his less experienced colleagues and gives advice on aligning work processes and procedures with software upgrades. But if requireds/he also engages specialist resources (e.g. third party network providers).

B.5. Technical Publications Development (2%)

S/he takes input from technical authors to organise the production of different documents according to the requirement of the project or application.S/he prepares the presentation by selecting the appropriate style and media and by describing the different function and features. The digital animator/2D-3D specialist is also responsible for the document-management system and the update and validation of the existing documentation.

3. RUN

Weighting of the activity (in reference to ECVET): 8%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Maintains / updates an application, a site, a software, a computer, a network...

Management knowledge, skills and competences

- Schedules working processes and prioritizes tasks (independently) (time management)
- Develops / finds solutions and validates their relevance and their consequences

Personal and social knowledge, skills and competences

- Is able to analyse and solve problems

b. Learning units (What are the suggested training fields/ learning fields?)

C.2. Change support (1%)

S/he implements and provides guidance for the evolution of an IT solution.S/he controls and schedules all modifications of software or hardware to prevent an unpredictable outcome because of multiple upgrades.S/he maintains coherence to the service level agreement by responding systematically to day by day operational needs, reacting to them and by avoiding service disruptions.

C.3. Service Delivery (2%)

The digital animator/2D-3D specialist acts systematically to analyse performance data and communicates these findings to his senior colleagues.S/he handles monitoring and management tools such as Scripts and Procedures.S/he updates the operational document library and logs all operational events.S/he ensures a stable and secure application and ICT infrastructure by escalating potential service level failures and recommending actions for service improvement.

C.4. Problem Management (5%)

S/he has specialist knowledge and understands the IT infrastructure and problem management process. S/he is able to identify failures and the root cause of incidents within the Information System rapidly, to resolve (i.e. repair, replace or reconfigure) them with minimum outage and to prevent a recurrence of them by documenting these problems for future analysis.

4. MANAGE

Weighting of the activity (in reference to ECVET): 8%

a. Learning outcomes (What is the required output of the training?)

Management knowledge, skills and competences

- Has presentation and moderation skills
- Schedules working processes and prioritizes tasks (time management)
- Conducts feasibility studies
- Analyzes the relevance of choices (critical self-reflection)
- Develops / finds solutions and validates their relevance and their consequences

Personal and social knowledge, skills and competences

- Is able to work in a team
- Is committed to corporate strategy, culture and objectives
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns

b. Learning units (What are the suggested training fields/ learning fields?)

E.2. Project and Portfolio Management (3%)

S/he understands and applies the principle of project management. That means that s/he defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. S/he is able to apply methodologies, tools and processes. S/he is able to meet identified business needs by implementing new, internal or external defined processes. S/he makes choices, gives instructions and bears responsibility for a team (i.e. relationship within the team, team objectives). Sometimes s/he takes the overall responsibility for an ICT project (i.e. outcomes, finance, resource management, time management). S/he also creates and maintains documents to facilitate the monitoring of project progress.

E.3. Risk Management (1%)

S/he implements the risk management considering information systems and the application of the enterprise defined risk management policy and procedure. S/he understands and applies the principles of risk management (i.e. assesses risk, documents potential risk and containment plans) and is able to investigate ICT solutions to mitigate identified risks.

E.4. Relationship Management (4%)

S/he is responsible for a positive business relationship between the client and the internal or external provider deploying and complying with organisational processes. S/he maintains a regular communication with them and s/he is familiar with their environment. S/he ensures that all the needs, concerns and also complaints of the client, partner and supplier are understood and addressed in accordance with organisational policy. S/he accounts for his own and others actions in managing a limited client base.

5.3.3 e-CF and EQF Levels

The digital animator/2D-3D specialist will complete most of these learning units with the e-CF Level 3. According to the table in Chapter 2 the dominating e-CF Level 3 results in the EQF Level 6.

5.4 Webmaster

5.4.1 Job description

Webmaster is the most common and most ancient job in the internet world. Master of the Website, the webmaster is etymologically in charge of most of the tasks concerning the website: defining the objective, specifications, technical approach, technical implementation, content development, defining and producing the information, analysing and promoting the audience. In small SMEs (which represent the majority of the market), the webmaster is often the only web-related collaborator. In larger companies, the webmaster can be part of a team gathering other technical and content specialist functions (such as Web Designer, 2D-3D specialist, web developer).S/he is also the interface between the public and the company and the contact point with the company, answering questions from the public or transferring them to the relevant department of the company.

5.4.2 Competences

A webmaster should be trained according to the work processes in whichs/he is involved in his job. In the following the competence areas/ learning outcomes/ contents are described that should be trained for every single work phase.

1. PLAN

Weighting of the activity (in reference to ECVET): 22%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for the successful handling of multimedia-software, applications, hardware
- Has programming skills for the (further) development of multimedia-applications, software, websites etc.
- Knows how to optimize a site according to the requirements of search engines
- Prepares content modules

Management knowledge, skills and competences

- Is familiar with the technical trends / general business culture of the branch/ industry
- Conducts feasibility studies (technical, finance) (NOTE: in the absence of a Web Content Manager)
- Has knowledge of usability research
- Analyses the relevance of choices
- Schedules working processes and prioritizes tasks independently (time management)
- Develops/finds solutions and validates their relevance and their consequences
- Writes requirements specifications, technical specifications and reports (clear, precise and detailed)

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is committed to corporate strategy, culture and objectives

b. Learning units (What are the suggested training fields/ learning fields?)

A.1. IS and Business Strategy Alignment (1%)

The webmaster is aware of long term business requirements and is able to implement requirements regarding the Information System model as communicated by the upper management. S/he is able to report incoherencies in the implementation of strategic ICT policy of the enterprise to the upper management.

A.3. Business Plan Development (1.5%)

The webmaster is responsible for the design and structure of a business or product plan (i.e. return on investment propositions, cost benefit analysis, marketing and sales strategy, SWOT analysis, etc.). S/he is able to analyse the market environment. S/he ensures the strategic application of technology for business benefit by developing enterprise-wide information architectures and processes. S/he communicates and sells this business plan to relevant stakeholders and addresses political, financial and organisational interests.

A.4. Specification Creation (4.5%)

In analysing and defining the current and target status of a content module, the webmaster acts systematically in estimating cost effectiveness and design decision templates. S/he maintains a project diary and exploits specialist knowledge in the specification development to create and maintain standard and complex documents of the project or content module (such as structure plans, timescales, milestone descriptions).

A.5. Systems Architecture (3.5%)

The webmaster contributes to a formal approach to implement ICT technology in line with business requirements. S/he therefore identifies the components required, hardware, software and technology platforms that need to be integrated to meet current and future needs of the product. S/he is able to define ICT technology and specification to be deployed in multiple IT projects. S/he ensures that all technical aspects take account of interoperability, scalability and usability.

A.6. Application Design (9.5%)

During the planning and specification process of the content module, the webmaster organises the overall planning of the design of the module or application in accordance with ICT policy and user or customer needs. S/he estimates costs of development, installation and maintenance and selects technical options for building the application. S/he validates the models with representative users. S/he ensures that the application is correctly integrated within a complex environment.

A.7. Technology Watching (2%)

The webmaster is aware of technology improvements in his field of competence and is able to integrate them into specification of the application or content module. S/he therefore contributes added value by making steps towards improvements in

efficiency, productivity quality or competitiveness of the developed content module or application. S/he is able to identify the articulations between emerging technologies and business requirements in accordance with long term strategy.

2. BUILD

Weighting of the activity (in reference to ECVET): 27%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for successful handling of multimedia-software, applications, hardware, etc.
- Handles picture and graphics management software
- Has programming skills for the (further) development of multimedia-applications, software, websites etc.
- Prepares content modules
- Manages the data-processing station
- Manages a data-processing network (safety, right of access, daily maintenance)
- Creates graphic documents, layouts and web design
- Develops and manages databases
- Knows how to optimize a site according to the requirements of search engines
- Knows how to integrate various components of an application / website
- Maintains / updates an application, a site, a software, a computer, a network...
- Tests / validates an application, a software and submits reports
- Documents a website
- Knows how to make use of search engines on the internet

Management knowledge, skills and competences

- Has presentation and moderation skills
- Handles standards and other international usances
- Knows to seek and classify information on the internet and elsewhere
- Communicates with customers or within the company
- Communicates in English or other foreign languages
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the native language
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the foreign language

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is able to work in a team
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns
- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is aware of the importance of details and precision (accurateness)
- Imparts / explains technical knowledge to others, has a sense of teaching

b. Learning units (What are the suggested training fields/ learning fields?)

B.1. Design and Development (20.%)

The webmaster acts systematically and creatively to develop, design, engineer and integrate software modules and different components into a larger product.S/he always considers the required specifications.S/he tests singular units and the whole system to ensure that all functional and performance criteria are met.S/he develops standard procedures and architectures to handle complexity.

B.2. Systems Integration (2.5%)

The webmaster installs the hardware and software into an existing or proposed system. To ensure interoperability and integrity of the overall system functionality and reliabilitys/he complies with established processes and procedures.S/he considers the specification, capacity and compatibility of existing and new modules.

B.3. Testing (1%)

S/he has specialist knowledge to organise complex testing programmes for IT systems or customer usability requirements. These tests ensure that all internal, external, national and international standards are met and that the performance of the new or revised components or systems conforms to the expectation. By documenting and reporting the tests and results/he provides an important input to all involved persons like designers, users or maintainers and to evidence certification requirements.

B.4. Solution Deployment (3%)

S/he is involved in the solution construction and the communication with the client. His field of activity includes the configuration (i.e. installation, upgrade, decommission) of hardware, software and the network to ensure the interoperability of system components.S/he follows predefined general standards of practice.S/he builds or deconstructs system elements in a complex environment.S/he identifies non performing components and establishes root cause of failure within the overall solution. The user gets a fully operational solution from him.S/he completes the documentation by recording all relevant information including equipment addresses, configuration and performance data.S/he supports his less experienced colleagues and gives advice on aligning work processes and procedures with software upgrades. But if requireds/he also engages specialist resources (e.g. third party network providers).

B.5. Technical Publications Development (0.5%)

S/he takes input from technical authors to organise the production of different documents according to the requirement of the project or application.S/he prepares the presentation by selecting the appropriate style and media and by describing the different function and features. The webmaster is also responsible for the document-management system and the update and validation of the existing documentation.

3. RUN

Weighting of the activity (in reference to ECVET): 22%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Manages the data-processing station
- Maintains / updates an application, a site, a software, a computer, a network...

Management knowledge, skills and competences

- Understands the corporate culture, the constraints of other departments
- Knows the communication rules on the Internet in the native language
- Knows the communication rules on the Internet in a foreign language
- Develops / finds solutions and validates their relevance and their consequences

Personal and social knowledge, skills and competences

- Is able to analyse and solve problems
- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is aware of the importance of details and precision (accurateness)

b. Learning units (What are the suggested training fields/ learning fields?)

C.1. User support (10,5%)

After interpreting user problems by applying different questioning techniques/he issues the relevant information to the user.S/he creates a solution database to resolve incidents faster.S/he ensures that agreed service levels are met, that the support is available within user business hours and that the service and system performance is improved continually.S/he works together with senior operatives to solve complex and unresolved incidents.S/he is also responsible for the budget management

C.2. Change support (3,5%)

S/he implements and provides guidance for the evolution of an IT solution.S/he controls and schedules all modifications of software or hardware to prevent an unpredictable outcome because of multiple upgrades.S/he controls the application of functional updates, software or hardware additions and maintenance activities to ensure the integrity of the system.

C.3. Service Delivery (5%)

The webmaster acts systematically to analyse performance data and communicates these findings to his senior colleagues.S/he handles monitoring and management tools such as Scripts and Procedures.S/he updates the operational document library and logs all operational events.S/he ensures a stable and secure application and ICT infrastructure by escalating potential service level failures and recommending actions for service improvement.

C.4. Problem Management (3%)

S/he has specialist knowledge and understands the IT infrastructure and problem management process. S/he is able to identify failures and the root cause of incidents within the Information System rapidly, to resolve (i.e. repair, replace or reconfigure) them with minimum outage and to prevent a recurrence of them by documenting these problems for future analysis.

4. ENABLE

Weighting of the activity (in reference to ECVET): 8%

a. Learning outcomes (What is the required output of the training?)

Management knowledge, skills and competences

- Knows the basics of law in the field of activity (contract law, intellectual property rights...)
- Develops and applies quality assurance strategy, rules and methods
- Develops and applies information security strategy, rules and methods
- Measures and characterizes audience and draws appropriate conclusions
- Negotiates, manages, directs, controls subcontractors

b. Learning units (What are the suggested training fields/ learning fields?)

D.1. Information Security Strategy Development (2%)

S/he is responsible for the Information Security Management. That means that s/he ensures safety and security of information by defining a formal organisational strategy scope and culture. S/he uses defined standards and best practices to create objectives for information integrity, availability and data privacy.

D.2. ICT Quality Strategy Development (1%)

S/he is responsible for the ICT quality management system. S/he identifies critical processes that influence the service delivery and product performance. S/he satisfies customer expectations and improves business performance by defining, improving and refining the strategy. S/he formulates objectives for service management and product and process quality. The webmaster leverages and authorises the application of external standards and best practices.

D.4. Purchasing (2%)

S/he ensures a consistent procurement procedure that adds business value to the organisation. That means that s/he is responsible for specification requirements, supplier identification, proposal analysis, contract negotiation, supplier selection and contract placement. S/he evaluates the performance, cost, timeliness and quality of different suppliers, products and services and then s/he selects the best.

D.5. Sales Proposal Development (1%)

The webmaster is responsible for the organisations capacity to deliver and the development of technical proposals to meet customer solution requirements. S/he integrates these solutions in a complex technical environment and ensures feasibility and technical validity.

D.8. Contract Management (2%)

The performance of the complete supply chain and the regular communication with the supplier are his fields of responsibility. S/he provides and negotiates a contract in accordance with organisational processes and ensures the adherence to it (e.g. quality standards, time of delivery). S/he also maintains budget integrity and checks that the supplier complies with legal and health and safety standards.

5. MANAGE

Weighting of the activity (in reference to ECVET): 21%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Manages data-processing network (website) with regard to safety, right of access (daily maintenance)

Management knowledge, skills and competences

- Is familiar with the technical trends / business culture of the branch / industry
- Understands the corporate culture, the constraints of other departments
- Has presentation and moderation skills
- Manages, negotiates, directs, controls a team
- Schedules working processes and prioritizes tasks (time management)
- Conducts feasibility studies
- Analyzes the relevance of choices (critical self-reflection)
- Measures and characterizes audience and draws conclusions
- Evaluates and manages project
- Develops / finds solutions and validates their relevance and their consequences
- Develops and applies a user behaviour evaluation system
- Develops and applies quality assurance strategy, rules and methods
- Develops and applies (information) security strategy, rules and methods

Personal and social knowledge, skills and competences

- Is able to work in a team
- Is committed to corporate strategy, culture and objectives
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns

b. Learning units (What are the suggested training fields/ learning fields?)

E.1. Forecast Development (1%)

S/he uses market inputs (e.g. market needs, acceptance of products/services) and assesses the organisations production and selling capabilities to make short-term forecasts. S/he applies relevant metrics to support different departments (e.g. production, marketing, sales and distribution) in the decision-making process.

E.2. Project and Portfolio Management (6%)

S/he understands and applies the principle of project management. That means that s/he defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. S/he is able to apply methodologies, tools and

processes.S/he is able to meet identified business needs by implementing new, internal or external defined processes.S/he makes choices, gives instructions and bears responsibility for a team (i.e. relationship within the team, team objectives). Sometimess/he takes the overall responsibility for an ICT project (i.e. outcomes, finance, resource management, time management).S/he also creates and maintains documents to facilitate the monitoring of project progress.

E.3. Risk Management (2.5%)

S/he implements the risk management considering information systems and the application of the enterprise defined risk management policy and procedure.S/he understands and applies the principles of risk management (i.e. assesses risk, documents potential risk and containment plans) and is able to investigate ICT solutions to mitigate identified risks.S/he evaluates, manages and ensures the validation of exceptions and audits ICT processes and environment.

E.4. Relationship Management (6%)

S/he is responsible for a positive business relationship between the client and the internal or external provider deploying and complying with organisational processes.S/he maintains a regular communication with them ands/he is familiar with their environment.S/he ensures that all the needs, concerns and also complaints of the client, partner and supplier are understood and addressed in accordance with organisational policy.S/he accounts for his own and others actions in managing a limited client base.

E.5. Process improvement (2%)

The webmaster researches and benchmarks existing ICT processes and solutions in order to define possible innovations.S/he evaluates, designs and implements process or technology changes systematically for measurable business benefit.S/he measures the effectiveness of existing ICT processes and makes reasoned recommendations.

E.6. ICT Quality Management (1%)

S/he is responsible for the implementation and assurance of the ICT quality policy and the continuous quality improvement.S/he plans and defines indicators to manage the quality with respect to ICT strategy and to review the performance.S/he evaluates these indicators to propose remedial action.

E.7. Business Change Management (0.5%)

S/he assesses the implication of new IT solutions.S/he identifies methods and standards that can be deployed to meet defined change requirements. Structural and cultural issues are taken into account.S/he quantifies the business benefits and maintains business and process continuity throughout change and monitoring the impact for example.

E.8. Information Security Management (2%)

S/he is responsible for the information security policy. That includes its implementation and the analysis and management of security risks with respect to the enterprise data and information. His field of activity also contains the review of security incidents and the formulation of recommendations for the continuous security enhancement.S/he investigates and instigates remedial measures to address any security breaches.

5.4.3 e-CF and EQF Levels

The webmaster will complete most of these learning units with the e-CF Level 3. According to the table in Chapter 2 the dominating e-CF Level 3 results in the EQF Level 6.

5.5 Web Content Manager

5.5.1 Job description

The web content manager takes care of the business perspectives of web development which consists in planning, defining, organising, structuring and controlling the web content, in accordance with the general strategy of the organisation. This covers the management of content, advertising, marketing and order fulfilment for the website as well as its adaptation (if needed) to cultural approaches for any country targeted by the organisation. Furthermore, the web content manager collects client requirements and distributes this knowledge to a team of professionals who will actually plan, develop and operate the website. The web content manager is often part of (or has direct access to) the upper management layers of the company. In some large companies, the web content manager manages the entire web team in line with the strategic and communication objectives and orientations of the website as the expression and the image of the company.

5.5.2 Competences

A Web Content Manager should be trained according to the work processes in which/ he is involved in his job. In the following the competence areas/ learning outcomes/ contents are described that should be trained for every single work phase.

1. PLAN

Weighting of the activity (in reference to ECVET): 34%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has user skills for the successful handling of multimedia-software, applications, hardware
- Applies content standards
- Knows how to optimize a site according to the requirements of search engines
- Is aware of inclusive design methodologies (elderly, handicapped)

Management knowledge, skills and competences

- Is familiar with the technical trends / general business culture of the branch/ industry
- Knows the basic of law in the field of activity (contract law, intellectual property rights)
- Conducts feasibility studies (technical specifications)
- Has knowledge of usability research
- Foresees the (further) development of multimedia-applications, software, websites etc.
- Plans budget
- Negotiates with, manages, directs, controls subcontractors
- Analyses the relevance of choices
- Handles standards and other international usances

- Schedules working processes and prioritizes tasks independently (time management)
- Develops/finds solutions and validates their relevance and their consequences
- Writes requirements specifications, technical specifications and reports (clear, precise and detailed)

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is committed to corporate strategy, culture and objectives

b. Learning units (What are the suggested training fields/ learning fields?)

A.1. IS and Business Strategy Alignment (2%)

The Web Content Manager is aware of long term business requirements and is able to implement requirements regarding the Information System model as communicated by the upper management.S/he acts as an important interface between the top management and the team.S/he is able to develop and implement strategic and innovative long term business solutions.

A.2. Service level management (4%)

S/he negotiates final service level agreements (SLA) and contracts for services offered.S/he considers the needs and capacity of customers and business.S/he adapts the enterprise strategy to the SLA in order to achieve forecasted results.

A.3. Business Plan Development (3%)

The Web Content Manager is responsible for the design and structure of a business or product plan (i.e. return on investment propositions, cost benefit analysis, marketing and sales strategy, SWOT analysis, etc.).S/he ensures the strategic application of technology for business benefit by developing enterprise-wide information architectures and processes.S/he communicates and sells this business plan to relevant stakeholders and addresses political, financial and organisational interests.S/he is responsible for the creation of an information systems strategy.

A.4. Specification Creation (8%)

In analysing and defining the current and target status of a content module, the Web Content Manager estimates cost effectiveness and design decision templates.S/he is responsible for a complete project or product specifications (i.e. maintaining project diary and developing structure plans, timescales and milestone descriptions).

A.5. Systems Architecture (3%)

The Web Content Manager contributes to a formal approach to implement ICT technology in line with business requirements.S/he therefore identifies the components required, hardware, software and technology platforms that need to be integrated to meet current and future needs of the product.S/he ensures that all technical aspects take account of interoperability, scalability and usability.S/he defines the strategy to implement ICT technology according to business need.

A.6. Application Design (12%)

During the planning and specification process of the content module, the Web Content Manager organises the design of an application in accordance with ICT policy and user or customer needs. S/he estimates costs of development, installation and maintenance and selects technical options for building the application. S/he integrates an application within a complex environment considering a large user perspective. S/he validates the models with representative users.

A.7. Technology Watching (2%)

The Web Content Manager contributes added value by making steps towards improvements in efficiency, productivity quality or competitiveness of the developed content module or application. S/he is able to envision and articulate the solutions of the future because of his knowledge of new and emerging technologies. S/he gives advice to the leadership teams concerning the business and technology.

2. BUILD

Weighting of the activity (in reference to ECVET): 21%

a. Learning outcomes (What is the required output of the training?)

Technical knowledge, skills and competences

- Has programming skills for the (further) development of multimedia-applications, software, websites etc.
- Develops and manages databases
- Knows how to optimize a site according to the requirements of search engines

Management knowledge, skills and competences

- Has presentation and moderation skills
- Knows to seek and classify information on the internet and elsewhere
- Foresees the (further) development of multimedia applications, software, websites etc.
- Communicates with customers or within the company
- Communicates in English or other foreign languages
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the native language
- Drafts texts, clearly & concisely, with due regard for orthography & grammar in the foreign language

Personal and social knowledge, skills and competences

- Has creativity and imagination
- Is able to work in a team
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns
- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is aware of the importance of details and precision (accurateness) (1%)
- Imparts / explains technical knowledge to others, has a sense of teaching

b. Learning units (What are the suggested training fields/ learning fields?)

B.1. Design and Development (16%)

S/he designs and engineers software modules and different components. S/he always considers the required specifications. S/he tests singular units and the whole system to ensure that all functional and performance criteria are met. S/he develops standard procedures and architectures to handle complexity.

B.2. Systems Integration (0.5%)

The Web Content Manager installs the hardware and software into an existing or proposed system. S/he creates an integration process and establishes internal standards. To ensure interoperability and integrity of the overall system functionality and reliability, s/he complies with established processes and procedures. S/he considers the specification, capacity and compatibility of existing and new modules.

B.3. Testing (1.5%)

S/he has specialist knowledge to organise complex test procedures for IT systems or customer usability requirements. These tests ensure that all internal, external, national and international standards are met and that the performance of the new or revised components or systems conforms to the expectation. By documenting and reporting the tests and results, s/he provides an important input to all involved persons like designers, users or maintainers and to evidence certification requirements.

B.4. Solution Deployment (2.5%)

S/he is involved in the solution construction and the communication with the client. His field of activity includes the configuration (i.e. installation, upgrade, decommission) of hardware, software and the network to ensure the interoperability of system components. S/he follows predefined general standards of practice. The user gets a fully operational solution from him. S/he completes the documentation by recording all relevant information including equipment addresses, configuration and performance data. S/he gives advice on aligning work processes and procedures with software upgrades. But if required, s/he also engages specialist resources (e.g. third party network providers).

B.5. Technical Publications Development (0.5%)

S/he produces different documents according to the requirement of the project or application. S/he prepares the presentation by selecting the appropriate style and media and by describing the different function and features. The Web Content Manager is also responsible for the document-management system and the update and validation of the existing documentation.

3. RUN

Weighting of the activity (in reference to ECVET): 7%

a. Learning outcomes (What is the required output of the training?)

Management knowledge, skills and competences

- Understands the corporate culture, the constraints of other departments
- Knows the communication rules on the Internet in the native language
- Knows the communication rules on the Internet in a foreign language

Personal and social knowledge, skills and competences

- Is able to analyse and solve problems
- Is customer-orientated and able to imagine the user perspective and to adapt decisions
- Is aware of the importance of details and precision (accurateness)
- Imparts / explains technical knowledge to others, has a sense of teaching

b. Learning units (What are the suggested training fields/ learning fields?)

C.1. User support (4%)

After interpreting user problems/s/he issues the relevant information to the user.S/he creates a solution database to resolve incidents faster.S/he ensures that agreed service levels are met, that the support is available within user business hours and that the service and system performance is improved continually.S/he is also responsible for the budget management

C.2. Change support (1%)

S/he implements and provides guidance for the evolution of an IT solution.S/he controls and schedules all modifications of software or hardware to prevent an unpredictable outcome because of multiple upgrades.S/he controls the application of functional updates, software or hardware additions and maintenance activities to ensure the integrity of the system.

C.3. Service Delivery (1.5%)

The Web Content Manager acts systematically to analyse performance data and communicates these findings to his senior colleagues.S/he handles monitoring and management tools such as Scripts and Procedures.S/he updates the operational document library and logs all operational events.S/he ensures a stable and secure application and ICT infrastructure by escalating potential service level failures and recommending actions for service improvement.

C.4. Problem Management (0.5%)

S/he is able to identify failures and the root cause of incidents within the Information System rapidly, to resolve them and to prevent a recurrence of them by documenting these problems for future analysis.S/he meets emergency incidents by allocating well trained human resources, tools and diagnostic equipment.S/he constructs escalation processes to ensure that appropriate resources can be applied to each incident.

4. ENABLE

Weighting of the activity (in reference to ECVET): 9%

a. Learning outcomes (What is the required output of the training?)

Management knowledge, skills and competences

- Has presentation and moderation skills
- Knows the basics of law in the field of activity (contract law, intellectual property rights...)
- Develops and applies quality assurance strategy, rules and methods
- Measures and characterizes audience and draws appropriate conclusions

- Negotiates, manages, directs, controls subcontractors

Personal and social knowledge, skills and competences

- Imparts / explains technical knowledge to others, has a sense of teaching
- Is committed to corporate strategy, culture and objectives
- Is able to work in a team

b. Learning units (What are the suggested training fields/ learning fields?)

D.2. ICT Quality Strategy Development (1%)

S/he is responsible for the ICT quality management system. S/he identifies critical processes that influence the service delivery and product performance. S/he satisfies customer expectations and improves business performance by defining, improving and refining the strategy. S/he formulates objectives for service management and product and process quality. The Web Content Manager leverages and authorises the application of external standards and best practices.

D.3. Education and Training Provision (4%)

The Web Content Manager is responsible for the ICT training policy. That includes the definition, the implementation, the organisation, the structuring and scheduling of different training programmes and its evaluation. After the implementations/he aspires to improvement and adaptation. S/he always considers training needs and organisation requirements.

D.4. Purchasing (1%)

S/he is responsible for the application of the organisations procurement policies and the process enhancement. S/he ensures a consistent procurement procedure that adds business value to the organisation. That means that s/he is responsible for specification requirements, supplier identification, proposal analysis, contract negotiation, supplier selection and contract placement.

D.5. Sales Proposal Development (1%)

The Web Content Manager is responsible for the organisations capacity to deliver and the development of technical proposals to meet customer solution requirements ideally. S/he acts as a "consultative seller" by interpreting and influencing customer needs and the reference business contexts.

D.8. Contract Management (2%)

The regular communication with the supplier and the compliance of the supplier contract are his fields of responsibility. S/he provides and negotiates a contract in accordance with organisational processes and ensures the adherence to it (e.g. quality standards, time of delivery). S/he also maintains budget integrity and checks that the supplier complies with legal and health and safety standards.

5. MANAGE

Weighting of the activity (in reference to ECVET): 29%

a. Learning outcomes (What is the required output of the training?)

Management knowledge, skills and competences

- Is familiar with the general technical trends / business culture of the branch / industry
- Understands the corporate culture, the constraints of other departments
- Has presentation and moderation skills
- Communicates with customers and within the company
- Communicates in English and other foreign languages
- Plans budget
- Schedules working processes and prioritizes tasks (time management)
- Manages, directs, controls a team
- Conducts feasibility studies (technical, financial)
- Foresees the (further) development of multimedia applications, software, websites etc.
- Manages and evaluates projects
- Analyzes the relevance of choices (critical self-reflection)
- Measures and characterizes audience and draws conclusions
- Develops / finds solutions and validates their relevance and their consequences
- Develops and applies quality assurance strategy, rules and methods

Personal and social knowledge, skills and competences

- Is able to work in a team
- Is committed to corporate strategy, culture and objectives
- Is sensitive and tactful in interpersonal interactions and in cross-cultural concerns
- Is able to analyse and solve problems

b. Learning units (What are the suggested training fields/ learning fields?)

E.1. Forecast Development (2%)

S/he interprets market needs and the acceptance of products/services. S/he applies relevant metrics to support different departments (e.g. production, marketing, sales and distribution) in the decision-making process. S/he understands the global marketplace to identify and evaluate relevant inputs from the business, political and social context.

E.2. Project and Portfolio Management (10%)

S/he has knowledge of project management. That means that s/he is able to define activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. S/he is able to meet identified business needs by implementing new, internal or external defined processes. Sometimes s/he takes the overall responsibility for an ICT project (i.e. outcomes, finance, resource management, time management). S/he also creates and maintains documents to facilitate the monitoring of project progress.

E.3. Risk Management (4,5%)

S/he implements the risk management considering information systems, all the possible constraints (including technical, economic and political issues) and the application of the enterprise defined risk management policy and procedure.S/he assesses risk and documents potential risk and containment plans.

E.4. Relationship Management (8.%)

S/he is responsible for a positive business relationship between the client and the internal or external provider deploying and complying with organisational processes.S/he maintains a regular communication with them ands/he is familiar with their environment.S/he ensures that all the needs, concerns and also complaints of the client, partner and supplier are understood and addressed in accordance with organisational policy.S/he authorises the investment in new and existing relationships.

E.5. Process improvement (1.5%)

The Web Content Manager researches and benchmarks ICT processes.S/he evaluates, designs and implements process or technology changes systematically for measurable business benefit.S/he measures the effectiveness of existing ICT processes.S/he implements innovations and improvements to enhance competitiveness and efficiency.S/he persuades the senior management of potential changes.

E.6. ICT Quality Management (2%)

S/he is responsible for the implementation and assurance of the ICT quality policy and the continuous quality improvement.S/he plans and defines indicators to manage the quality with respect to ICT strategy and to review the performance.S/he provides leadership for quality policy implementation and for setting and exceeding quality standards.

E.7. Business Change Management (1%)

S/he assesses the implication of new IT solutions.S/he identifies methods and standards that can be deployed to meet defined change requirements. Structural and cultural issues are taken into account.S/he quantifies the business benefits and maintains business and process continuity throughout change and monitoring the impact for example.

5.5.3 e-CF and EQF Levels

The Web Content Manager will complete most of these learning units with the e-CF Level 2. According to the table in Chapter 2 the dominating e-CF Level 2 results in the EQF Level 4 and 5.

6. GLOSSARY

The use of the following terms in this document is based on the following definitions:

'Qualification' means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards;

'Sector' means a grouping of professional activities on the basis of their main economic function, product, service or technology;

'Learning outcomes' means statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence;

'Knowledge' means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual;

'Skills' means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments);

'Competence' means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development.

'Job profile' means the employer definition of a given job, describing that by required qualification, tasks, skills and competences.

'e-Content development' is the process of researching, writing, gathering, organizing, structuring and editing information for e-publication. Such content may consist of prose, graphics, pictures, recordings, movies or other media assets that could be distributed through e-media.

'Learning contents' are subjects taught in the context of a training. In contrast to learning outcomes, which represent the output of certain training, the learning contents represent the input of certain training.

'Learning unit' is a meaningful bundle of learning outcomes, e.g. the qualification project manager, includes the learning units planning, budgeting, team-building, management, controlling etc. which consist of a set of learning outcomes.

'ECVET' (European Credit system for Vocational Education and Training) is a system for the accumulation and transfer of credit points in vocational education and training, enabling the documentation and certification of learning success gained in the course of vocational education and training across "system borders".

*Source (apart from job profile, ECVET, e-content development, learning contents and learning units): Recommendation Of The European Parliament And Of The Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2008/C 111/01) ANNEX I – Definitions

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