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English version

e-Competence Framework for ICT Users - Part 3: Development Guidelines

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties on 2013-05-06, the constitution of which was supported by CEN following the public call for participation made on 2011-10-04.

A list of the individuals and organizations in the ICT field which supported the technical consensus represented by the CEN Workshop Agreement is available to purchasers from the CEN-CENELEC Management Centre. These organizations are as follows:

- (ISC)2
- AICA
- CEPIS
- CIGREF
- DEKRA Akademie
- ECDL Foundation
- EaSA
- EMF eExcellence
- European Software Institute – Center Eastern Europe
- ESI Central Europe
- EuroCIO
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The final review/endorsement round for this CWA was started on 2013-01-23 and was successfully closed on 2013-05-07. The final text of this CWA was submitted to CEN for publication on 2013-08-01.

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Comments or suggestions from the users of the CEN Workshop Agreement are welcome and should be addressed to the CEN-CENELEC Management Centre.

1 Introduction and Overview

1.1 Project Objective and background

The aim of the e-Competence Framework for ICT¹ Users project is to develop and validate a framework shell and populate the framework with an initial five e-Competence Areas with the assistance of project-created framework development guidelines. The following document outlines the development guidelines used to create the framework.

The e-Competence Framework for ICT Users ranges in depth from foundation to advanced levels, and is able to range in breadth from common, generic software domains to specialised technology domains, thus having the potential to provide a complete coverage of ICT user proficiency levels and e-competence areas. For the purpose of this project, five common e-competence areas have been selected for development (See e-Competence Framework for ICT Users).

Up to now, much of the activity around the creation of frameworks relating to ICT has focused on the practitioner (e.g. e-Competence Framework, SFIA, AITTS, CIGREF, EUCIP). This work has been important for the ICT sector, but by necessity has excluded ICT users, who constitute a much larger and more heterogeneous group. Due to the scale and complexity of the group involved, the development of a complete framework, containing all key competences relating to ICT in the workplace or home, is a considerable task.

A previous project – End-User e-Skills Framework Requirements – chose to first assess the current landscape of end user e-skills frameworks in Europe and to gain an understanding on the need for and possible structure and uses of a future end user framework. The results of this project suggests that there would be a high level of support (81 % of survey respondents said it was Extremely Important to Moderately Important to have an end user e-skills framework) for an end user e-skills framework. In addition, a clear picture on how that framework should look, as well as useful tools that could stem from the framework, were identified by that project. The desire for the framework to have a competence focus led to the framework being renamed and subsequent discussions within the CEN ICT Skills Workshop Plenary meetings have led to a proposed name of the “**European e-Competence Framework for ICT Users**”.

1.2 Background and policy

The development of an e-competence framework for ICT users is relevant to EU legislation, policies and actions relating to ICT standardization, as set out in the 2010 - 2013 ICT Standardization Work Programme (Directorate-General Enterprise and Industry), including the following:

- o [European e-Skills Summit Declaration](#): October 2002.
- o **Decision 2318/2003/EC**: Adoption of a multi-annual programme for the effective integration of information and communication technologies (ICT) in education and training systems in Europe (e-Learning Programme).
- o **e-Skills in Europe: Towards 2010 and Beyond**: Synthesis report of the European e-Skills Forum presented at the European e-Skills Conference on 20-21 September 2004 in Thessalonica. [A Declaration](#) was adopted recognising that the way forward is through multi-stakeholder partnerships.
- o Communication of the European Commission of 7 September 2007 on “**e-Skills in the 21st Century: Fostering Competitiveness, Growth and Jobs**” Com 469 final and Competitiveness Council Conclusions of 23 November 2007 on a long-term e-skills strategy.

¹ Information and Communications Technology (ICT)

- o COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS “A Digital Agenda for Europe”

In addition, the proposed project supports European Commission service priorities set out in the 2010 - 2013 ICT Standardization Work Programme (Domain 7): namely, that work should support pan-European skills and competence frameworks and tools and that there should be a focus on developing standards relating to advanced ICT users, and not solely ICT practitioners.

The project, in its efforts to define an e-competence framework for ICT Users, will support the creation of a broad framework that services a variety of groups (see subclause 3.2 Target Groups) through the provision of a common reference system that allows practical solutions to real-world challenges. This is directly related to *Key Action 11* of the Digital Agenda for Europe, namely to “...develop tools to **identify and recognise the competences of ICT practitioners and users**, linked to the European Qualifications Framework and to EUROPASS...”.

In summary, the intention is that the project will support the actions of the European Commission in strengthening the process of convergence of ICT Competence Frameworks within the EU by:

- o Providing a validated structure, content and supporting instructions to facilitate the development of a comprehensive e-competence framework for ICT users to meet the needs of a broad range of stakeholders.
- o Providing recommendations of tool sets that could be developed by third parties to support the framework.
- o Contribute to the development of a cross-sectoral e-competence framework for ICT users that could relate to the European Qualifications Framework (EQF).

1.3 Definition of key terms

Rather than focus our attentions on developing new definitions for various terms to be used in the project, the project team have looked to suitable existing definitions to provide a basis for our work. Definitions for the project have been sourced from the previous End User e-Skills Framework Requirements Project, the European Qualifications Framework and the e-Competence Framework for ICT Professionals as follows².

ICT User

Any individual who uses ICT systems and devices in either a work or personal³ environment. ICT users apply systems as tools in support of their own activities, which is not necessarily ICT. ICT users utilise common, generic or specialised software tools.

ICT User e-Competence

The preceding project (End User e-Skills Framework Requirements) defined an ICT user e-competence as follows, using the e-Skills Forum 2004 definition as a starting point:

The capabilities required for effective application of ICT systems and devices by the individual in either a work or personal⁴ environment. Individuals apply systems as tools in support of their own activities, which is, in most cases, not ICT. ICT user e-competences cover the utilisation of common

² Some definitions have been modified to adjust/remove examples that do not relate to ICT users.

³ Includes social and recreational home usage.

⁴ Includes social and recreational home usage.

generic software tools and the use of specialised tools supporting business functions. ICT user e-competences vary in complexity from introductory up to an advanced usage level⁵.

e-Competence Framework for ICT Users

The preceding project (End User e-Skills Framework Requirements) defined e-Competence framework for ICT users as follows:

An e-competence framework for ICT users is a simplified conceptual structure used to categorise and express ICT user e-competence, to various degrees of granularity, across proficiency level(s)⁶.

Competence

Following a review of the definitions within the e-Competence Framework for ICT Professionals, the EQF and the IPTS study, Mapping Digital Competence: Towards a Conceptual Understanding⁷, the project team adopted the e-Competence Framework for ICT Professionals definition for the term competence:

“demonstrated ability to apply knowledge, skills and attitudes for achieving observable results”.

This definition was deemed to be the most succinct wording for this term and contained all the key elements of competence in one single statement.

The e-Competence Framework for ICT Professionals documentation states that their definition of competence also encompasses social and personal abilities, as e-competences are holistic units expressing complex behaviours; they embed “attitudes” and degrees of individual autonomy; this becomes more evident when e-competences are described according to e-Competence Framework proficiency levels.

The fact that there is a clear statement that the definition encompasses social and personal abilities is particularly useful for an ICT user focused e-competence framework, where many users will apply their competence in these contexts. In addition, the embedded “attitudes” and the notion of levels of autonomy will relate well to the proficiency levels available in the e-competence framework for ICT users.

Attitudes

The term attitude is also given a specific definition in the e-CF. The project team made some adjustments to the examples to enhance relevance for this ICT user focused framework:

““cognitive and relational capacity” (e.g. ..., synthesis capacity, flexibility, pragmatism, initiative, engagement, commitment...). If skills and knowledge are the components [of a competence], attitudes are the glue, which keeps them together.”

The original e-Competence Framework for ICT Professionals definition is below. The project team felt that “analysis capacity” may be more relevant as a skill and that the example of “synthesis capacity” would most likely apply to the advanced level of ICT users, whereas it would be more prevalent across the range at an ICT Professional level. Some additional examples of attitudes (initiative, engagement, commitment) were also inserted to give greater clarity.

““cognitive and relational capacity” (e.g. analysis capacity, synthesis capacity, flexibility, pragmatism...). If skills and knowledge are the components, attitudes are the glue, which keeps them together.”

⁵ Previous project definition - http://ftp.cen.eu/CEN/Sectors/List/ICT/CWAs/CWA_16213_2010.pdf

⁶ Previous project definition

⁷ http://ftp.jrc.es/EURdoc/JRC67075_TN.pdf

The concept of attitude is often overlooked when considering ICT user e-competence. However it is clear that there are various opportunities for attitudes to be embedded in the framework, since it is related to feelings and ways of thinking when dealing with something.

The attitude will be determining the ICT user's behaviour when for example searching the web. The attitude will have an important impact on the final outcome, which can be variable due to the fact that there is plenty of information and data on the web. So, even if the ICT user has the necessary knowledge and the skills to search, find and classify information and data, a positive and fruitful result would also depend on an initial positive mind-set that would include a certain level of self-confidence in reaching the required outcome.

Knowledge

For the term knowledge, the project team have adopted a modified version of the EQF definition:

“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...”

The full EQF definition (see below) was deemed to be too narrow for the potential users of the framework, particularly the phrase “work or study” which would not include social or e-inclusion uses of ICT like access to public services or staying in touch with family. The second sentence “...theoretical and/or factual”; was deemed to be implied in the modified definition.

“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”;

In this instance, the project team chose the EQF definition as it was felt that the e-Competence Framework for ICT Professionals definition was deemed to be suitable for the ICT Professional, but not suitable to be easily applied to the end user. The e-Competence Framework for ICT Professionals definition is below:

Knowledge represents the “set of know-what” (e.g. programming languages, design tools...)

and can be described by operational descriptions.

Skills

For the term skills, the project team adopted a modified version of the EQF definition:

“Skills” means the ability to apply knowledge and use know-how to complete tasks and solve problems. ...skills are described as cognitive (...) or practical (...).

The examples within the definition were removed to simplify the definition. If necessary they could be adjusted to be more relevant to the user group for example:

“...cognitive involves the use of logical, intuitive and creative thinking and practical involves the use of software tools like word processing and presentations.”

The project team also reviewed the e-Competence Framework for ICT Professionals definition of skills, however the wording focused on “managerial” and “technical” tasks, terms that were deemed to be at too high a level for the majority of ICT user e-competences.