

English Version

**e-Competence Framework (e-CF) - A common European
Framework for ICT Professionals in all industry sectors -
Part 3: Methodology**

Référentiel des e-Compétences - Référentiel européen
commun pour les professionnels des technologies de
l'information et de la communication dans tous les
secteurs d'activité - Partie 3 : Méthodologie

e-Kompetenz Rahmenwerk (e-CF) - Ein gemeinsamer
europäischer Rahmen für IKT-Fach- und
Führungskräfte in allen Branchen Teil 3: Methodik

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European foreword

This document (CEN/TR 16234-3:2017) has been prepared by Technical Committee CEN/TC 428 “Digital Competences and ICT Professionalism”, the secretariat of which is held by UNI.

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

This document supersedes CWA 16234-3:2014.

This Technical Report is the third part of the EN 16234 series, which is made up of the following three parts and which will replace CWA 16234-1:2014, CWA 16234-2:2014 and CWA 16234-3:2014:

- EN 16234-1, *e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all industry sectors - Part 1: Framework*
- CEN/TR 16234-2, *e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all industry sectors - Part 2: User guide*
- CEN/TR 16234-3, *e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all industry sectors - Part 3: Methodology*

Part 1 is fully standalone, and part 2 and 3 rely on part 1.

A relationship with the European ICT Professional Profiles (CWA 16458:2012, original CWA updated by e-CF 3.0 competences and re-published in 2014) is established. A number of relevant e-Competences and their applying level(s), as defined by this standard, are assigned to each Profile.

CWA 16234:2014-4 composed by 15 case studies illustrating e-CF practical use from multiple sector perspectives remains published and can be downloaded for free from the internet (*Official e-CF website: www.ecompetences.eu*).

Introduction

EN 16234-1 was established as a tool to support mutual understanding and provide transparency of language through the articulation of competences required and deployed by Information and Communication Technology (ICT) professionals.

The Guiding Principles

This standard is an enabler; it is designed to be a tool to empower users, not to restrict them.

This standard provides a structure and content for application by many types of users from organizations in the private and public sector, ICT user or ICT supply companies, educational institutions including higher education and private certification providers, social partners and individuals. In this broad application context, this standard is designed to support common understanding, not to mandate the use of each and every word used within it.

This standard expresses ICT competence using the following definition: 'Competence is a demonstrated ability to apply knowledge, skills and attitudes for achieving observable results'. This is a holistic concept directly related to workplace activities and incorporating complex human behaviours expressed as embedded attitudes. Attitudes are the glue which keep knowledge and skills together. Soft skills are the attitudes' components that can be made explicit, trained and developed.

Competence is a durable concept and although technology, jobs, marketing terminology and promotional concepts within the ICT environment change rapidly, this standard remains durable requiring maintenance approximately every three years to maintain relevance.

A competence can be a component of a job role, but it cannot be used as a substitute for similarly named job titles, for example; the competence, D.7. 'Sales Management' does not represent the complete content of a 'Sales Manager' job role. Competences can be aggregated, as required, to represent the essential content of a job role or profile. On the other hand, one single competence may be assigned to a number of different job profiles.

Competence is not to be confused with process or technology concepts such as, 'Cloud Computing' or 'Big Data'. These descriptions represent evolving technologies and in the context of this standard, they may be integrated as knowledge and skills examples in Dimension 4.

This standard does not attempt to cover every possible competence deployed by an ICT professional nor are the included competences necessarily unique to ICT. This standard articulates competences associated with ICT professional roles including some that may be found in other professions but are very important in an ICT context; examples include, C.4. 'Problem Management' or E.3. 'Risk Management'. However, to maintain an ICT focus, this standard avoids generic competences such as 'Communications' or 'General Management' although very applicable these transversal competences are comprehensively articulated in other structures. Selecting competences for inclusion within this standard is therefore, not a scientific choice, but a pragmatic process engaging a broad cross-section of stakeholders who prioritize competence inclusion based upon industry knowledge and experience.

This standard is structured from four dimensions. e-Competences in Dimension 1 and 2 are presented from the organizational perspective as opposed to from an individual's perspective. Dimension 3 which defines e-Competence levels related to the European Qualifications Framework (EQF), is a bridge between organizational and individual competences. Dimension 4 provides samples of knowledge and skills to the e-Competences in Dimension 2, they are not intended to be exhaustive but for inspiration and orientation only.

This standard has a sector specific relationship to the EQF; competence levels within this standard provide a consistent and rational relationship to levels defined within the EQF. The relativity between EQF learning levels and the e-competence **proficiency** levels of this standard has been systematically developed to enable consistent interpretation of the EQF in the ICT workplace environment.

Continuity of this standard is imperative; following maintenance updates it is essential that users are provided with a simple upgrade path. Users of this standard invest considerable time and resources to align processes or procedures with it. Organizations deploying these downstream activities are reliant upon this standard and need to be confident of the continued sustainability of their processes. Updates of this standard should recognize this requirement and provide for continuity enabling use of the existing version of this standard until it is convenient to upgrade to the latest version.

This standard is neutral; it does not follow the specific interests of a few major influencers, it is developed and maintained through an EU-wide balanced multi-stakeholder agreement process, under the umbrella of the European Committee for Standardization. This standard is a key component of the European Commission's Digital Agenda; it is designed for use by any organization and individual engaged in ICT Human Resources planning and competence development.

1 Scope

This Technical Report describes the methodology grounding for the development of the e-Competence Framework published as EN 16234-1. It supports methodological understanding of the e-CF by all parties interested; and it seeks to particularly satisfy the needs of stakeholders from competence frameworks construction and research environment.

2 Normative reference

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

EN 16234-1, *e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all industry sectors - Part 1: Framework*

3 Terms and definitions, symbols and abbreviated terms

For the purposes of this document, the terms and definitions, symbols and abbreviated terms given in EN 16234-1 apply.

e-CF: refer to e-Competence Framework defined by EN 16234-1.

4 General principles – executive overview

The aim of this Technical Report is to describe the methodology underpinning the development of EN 16234-1, European e-Competence Framework (e-CF). The e-CF expert team and European ICT stakeholders used this methodology, combined with their experience and industry knowledge, to inform decisions and choices.

The objective of EN 16234-1 is to provide a common, shared, European tool to support organizations and training institutions in recruitment, assessment, competence needs analysis, learning programmes and career path design and development. It also aims to support policy makers to define policies related to e-Skills development in education and in the workplace. As European stakeholders are the target audience for EN 16234-1, the active involvement of multiple experts and stakeholders from this community provided an essential ingredient in making the e-CF, now published as EN 16234-1, fit for purpose.

At the e-CF development project outset, four basic aspects of the forthcoming framework were considered. The e-CF expert group, together with the European stakeholders, made clear decisions on:

- a) overall framework structure in four dimensions;
- b) competence, knowledge, skill and attitude definitions;
- c) ICT business processes;
- d) the possible relationship between the e-CF and the European Qualifications Framework (EQF), in particular between e-CF and EQF levels.

The decisions taken were as follows:

- **e-CF structure in four dimensions.** To determine the structure of the European e-Competence Framework, the experts analysed and evaluated other existing frameworks, and finally agreed on a four dimensional approach. This structure is based on competence areas (dimension 1) and competences (dimension 2), rather than job roles. Competence-based approaches are more flexible and facilitate local customization. Dimension 3 assigns levels from 1 to 5 to each competence as