ILNAS

Institut luxembourgeois de la normalisation de l'accréditation, de la sécurité et qualité des produits et services

ILNAS-EN 16234-1:2019

e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 1: Framework

e-Kompetenz-Rahmen (e-CF) - Ein gemeinsamer europäischer Rahmen für IKT-Fach- und Führungskräfte in allen Branchen - Teil 1: Rahmenwerk

Référentiels de e-Compétences - Référentiel européen commun pour les professionnels des technologies de l'information et de la communication

12/2019

National Foreword

This European Standard EN 16234-1:2019 was adopted as Luxembourgish Standard ILNAS-EN 16234-1:2019.

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- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

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EUROPEAN STANDARD

NORME EUROPÉENNE

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English Version

e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 1: Framework

Référentiels de e-Compétences - Référentiel européen commun pour les professionnels des technologies de l'information et de la communication dans tous les secteurs - Partie 1 : Référentiel

e-Kompetenz-Rahmen (e-CF) - Ein gemeinsamer europäischer Rahmen für IKT-Fach- und Führungskräfte in allen Branchen - Teil 1: Rahmenwerk

This European Standard was approved by CEN on 23 October 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 16234-1:2019) has been prepared by the Technical Committee CEN/TC 428 "ICT professionalism and digital competences", the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2020, and conflicting national standards shall be withdrawn at the latest by June 2020.

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 EN 16234-1:2016.

In comparison with the previous edition, the following technical modifications have been made:

— Review of terms and definitions

— Review of all existing competences in the light of latest business and technology trends

— Adding three new competences in the light of latest business and technology trends (A.10 User Experience, C.5 Systems Management, D.7 Data Science and Analytics)

— Merging three previously co-existing competences to one (D.5. Sales Development)

— Elaboration of a new e-Competences descriptions complementary transversal concept (aspects of cross-cutting relevance to any successful ICT professional competence performance in context)

— Adding in Annex B,

  — a report relating and/ or positioning this standard against other relevant structures and concepts in a similar field (EQF, ESCO, DigComp).

  — In addition P21 is referenced as one example for making behavioural skills explicit.

  — A report establishes relationships of this standard with SFIA.

  — A new relationship with the European ICT Professional Profiles (CWA 16458-1:2018) is provided: the competence content of each Professional Profile, including level assignment, has been aligned with this standard.

  — Relationships with relevant ISO standards have been systematically checked with regard to mutual consistency in structure, terminology and/or content.

This standard for ICT professional competence outlines the minimum requirements of competence (i.e. a threshold) in the workplace: it includes typical knowledge and skills examples that are not standardised but provided to support orientation and understanding. When applying the standard, this approach has to be recognised to clearly distinguish between which elements are mandatory and which are merely examples (represented by, shall versus should/may/can, etc.).

This European standard consists of three parts:

— Part 1: is the Framework of the e-CF published as an European Norm (EN).

— Part 2: is the User Guide published as a CEN Technical Report (TR).

— Part 3: is the Methodology published as a CEN Technical Report (TR).

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

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

Introduction

This standard 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.

To support users and guide developers of applications to this standard, the following narrative provides an overview of the underpinning philosophy and principles adopted during the standard's construction and maintenance. This is also intended to provide guidance for successive updates to the standard.

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 holistic concept directly relates to workplace activities and incorporates complex human attitudes and resultant behaviours. Behaviour and attitude are important influences that facilitate successful knowledge and skills application. Within each competence, embedded attitudes are reflected in behaviour and enable the successful integration of knowledge and skills.

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, E.2. 'Project and Portfolio Management' does not represent the complete content of a 'Project Managers' 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 generic competences are comprehensively articulated in other structures. Selecting competences for inclusion within this standard is therefore a pragmatic rather than an exhaustive process. The selection was based on engagement with a broad cross-section of stakeholders who prioritize competence inclusion based upon industry knowledge and experience.

This standard is structured across four dimensions. e-Competences in Dimensions 1 and 2 are presented from the organizational perspective as opposed to an individual's perspective. Dimension 3 defines e-Competence levels and relates to the European Qualifications Framework (EQF), it is a bridge between organizational and individual competences. Dimension 4 provides examples 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 latest version of the standard incorporates a new element, transversal aspects; it recognises the relevance of a number of cross-cutting aspects that are important and provide additional generic ICT related descriptors for successful application of e-CF competences in a workplace context. Examples of transversal aspects identified for context-specific and flexible application within this standard are Accessibility, Ethics and Security.

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 work proficiency levels of this standard has been systematically developed to enable consistent interpretation of the EQF in the ICT workplace environment. It should be noted that an exact equivalency is not possible due to the different purposes and contexts of EQF and e-CF but relevant relationship information is provided.

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 need to recognize this requirement and provide for continuity, enabling use of the existing version of the 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 Digital Agenda for ICT Professionalism; it is designed for use by any organisation or individual engaged in ICT Human Resource planning and competence development.

1 Scope

This document provides a reference of 41 competences as required and applied at the Information and Communication Technology (ICT) professional work environment, using a common language for competences, skills and proficiency levels that can be understood across Europe.

This document was created for application by:

— ICT service, user and supply companies,

— ICT professionals, managers and human resource (HR) departments,

— vocational education institutions and training bodies including higher education,

— social partners (trade unions and employer associations), professional associations, accreditation, validation and assessment bodies,

— market analysts and policy makers,

and other organizations and stakeholders in public and private sectors.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
Information and Communication Technology
ICT
<technical> digital computers and internet (communication) systems, including software, hardware and networks

3.2
Information and Communication Technology
ICT
<economic and political> cross sector of enterprises, including manufacturers, product suppliers or service providers relating to the ICT field

3.3
ICT professional
person having the competence to plan, build, run, enable and/or manage Information and Communication Technology and having a professional ICT qualification and/or ICT occupational experience; they include both employees of ICT companies and ICT employees of organisations in all other sectors; they are in the scope of this standard