Non-regulated professional activities:

ICT standardisation

UNI

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Gender-neutral document

Introduction

Voluntary technical standardisation today covers almost all sectors, ranging from electro-technics to circular economy standards, from professions to construction standards. Some of these topics are relatively new to the world of standardisation due to market developments and transnational phenomena such as globalisation and digitisation.

The evolution of the surrounding reality, declined in its various forms by standardisation through the Anglo-Saxon-derived concept of the 'state of the art', has led to the introduction of new standardisation *objects* over time, among which the *professions* are rightfully included.

UNI in recent decades has therefore developed an entire strand dedicated to the qualification of professional figures, often in accordance with the mandate of the Legislator ex Law no. 4/2013, through the identification of the requirements of knowledge, skills and levels of autonomy and responsibility inspired by the EU Recommendation (2017/C 189/03), establishing the *European Qualifications Framework*, and linked to the Italian NQF established by decree on 8/1/2018.

In this context, the UNI standards drawn up by technical bodies of the Organisation or Federated Bodies, are to be considered solely *qualifying* and not already *enabling* and are structured according to a predefined meta-model called the APNR1[1] Scheme, agreed upon at the level of the UNI 'Professions' Steering Committee between the macro-stakeholders and the relevant institutions and inspired by the European model, based on an Italian initiative, of the CEN Guide 14:2010. In the field of Information Technology overseen by the Federated Body UNINFO, this model is further hybridised in the light of the specific normative context and the peculiarities of the sector. Specifically, the applicable reference framework is the e-CF, the *European e-Competence Framework*, the latest version of

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1   See definition of *Grundnorm*, M.Cibien e G.Riccio, Series Standardisation & Professions, Art. no. 3 "Il Modello UNI", p. 4.

which corresponds to EN 16234-1:2020[2], a key component of the European Commission's Digital Agenda.

This informative publication aims at highlighting the normative activities[3] designed for ICT practitioners and to signal the existence of extra-normative activities, led by UNINFO, both in terms of mapping and in terms of defining a repository of knowledge and skill requirements stemming from sector standards.

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2   The standard UNI EN 16234-1:2020 *e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all sectors - Part 1: Framework*, in its Annex B clarifies the relationship between the e-CF and other applicable frameworks including the EQF, ESCO, SFIA, Framework P21 and professional profiles ex CWA 16458.

3   UNI EN 16234-1:2020 is then joined by the UNI 11506:2021 *Unregulated professional activities - Professional figures working in the ICT sector - Requirements for assessing the conformity of knowledge, skills, autonomy and responsibilities for ICT professional profiles based on the e-CF model* in conjunction with the UNI 11621 series *Unregulated professional activities - Professional role profiles for ICT*.

APNR and the **ICT sector**

The UNINFO Technical Commission UNI/CT 526 is in charge of developing the technical standardisation relating to professional activities in the ICT sector. By 'professional activities' is meant all activities carried out in a professional manner, by natural persons, regardless of the mode work with which they are provided and how the employment relationship is regulated. The UNI/CT 526 is attended by digital experts representing central and local public administrations, enterprises, professional orders, professional associations from the industrial, craft and trade sectors and freelancers. Their participation is on a voluntary basis.
Standardisation activities are carried out through Working Groups. The Technical Committee can produce national UNI standards, technical reports and technical specifications.

UNI/CT 526 WORKING GROUPS

Working Group 01	IT security professional role profiles
Working Group 02	ICT Web Professional role profile
Working Group 04	Geographic information professional role profiles
Working Group 05	Cataloguing Skills and Knowledge mapped in the e-CF-based standards
Working Group 06	Professional role profiles related to metrics management and of ICT processes and products/services
Working Group 07	Transversal professional role profiles operating in the ICT sector
Working Group 08	Professional role profiles in the AI sector

UNI/CT 526 also acts as '*National Mirror Committee*' of CEN/TC 428 '*ICT Professionalism and Digital Competences*', which deals with the publication and maintenance of the technical standardisation related to the 'e-CF' ecosystem. UNI/CT 526 experts actively participate in the work of CEN/TC 428.

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APNR and the **ICT sector: standards** and **working groups**

UNI/CT 526 work plan includes the following standards:

UNI 11506:2021 *Non-regulated professional activities - Professional figures operating in the ICT sector - Requirements for the conformity assessment of knowledge, skills, autonomy and responsibilities for ICT professional profiles based on the e-CF model.* The standard describes the elements for the conformity assessment of knowledge, skills, autonomy and responsibilities (defined by UNI EN 16234-1 "e-CF") and the ethical and deontological aspects applicable to ICT professional role profiles defined by the UNI 11621 series.

UNI 11621-1:2021 *Non-regulated professional activities - Professional role profiles for ICT - Part 1: Methodology for the construction of professional role profiles for ICT based on the e-CF system.* The standard defines, starting from the first generation profiles, the methodology for the construction of second generation professional role profiles and third generation based on the e-CF system, in order to facilitate and standardise its application in different operational contexts that may differ in technology and application issues.

UNI 11621-2:2021 *Non-regulated professional activities - Professional role profiles for ICT - Part 2: European professional role profiles for the "second generation" ICT.* This part of the standard defines, applying the methodological guidelines of UNI 11621-1, the main professional role profiles for second-generation ICT using what is defined in UNI 11621-1 as the main reference.

UNI 11621-3:2021 *Non-regulated professional activities - Professional role profiles for ICT - Part 3: Professional role profiles related to Web-related professions.* The standard defines third-generation professional role profiles relating to Web-related professions using the principles defined in UNI 11621-1.

UNI 11621-4:2022 *Non-regulated professional activities - Professional role profiles for ICT - Part 4: Professional role profiles relating to information security.* The standard defines third-generation professional role profiles relating to information security using the principles defined in UNI 11621-1.

UNI 11621-5:2022 *Non-regulated professional activities - Professional role profiles for ICT - Part 5: Professional role profiles related to geographic information.* The standard defines third-generation professional role profiles for professionals working in the field of geographic information using the principles specified in UNI 11621-1.

UNI 11621-6:2021 *Non-regulated professional activities - ICT professional role profiles - Part 6: Professional role profiles related to metrics management and ICT measurement.* The standard defines third-generation professional role profiles related to professionals working in the field of measurement of ICT products and services. These professionals set up, govern and feed the enterprise metrics system to support the planning and design figures. These figures use and identify, methods, techniques and standards to take measures, derive indicators and construct benchmarks. They define new measures from standard ones to adapt them to their own context. They analyse measurements to derive useful knowledge for process governance and optimisation. They produce reports to support measurement and decision-making processes for the organisation.

Objectives **cataloguing ICT KS**

The conformity assessment of knowledge and skills, for ICT professional role profiles based on the e-CF model, cannot disregard the cataloguing of these elements.

The e-CF model has been supplemented by the standard UNI EN 17748: 2022 ICT Body of Knowledge (ICT BoK).

The diagram in Figure 1 provides an indication of how the new dimensions of the ICT BoK fit into the scheme of professional role profiles together with the four dimensions established by the e-CF model.

FIGURE 1: EN 16234-1 E-CF MODEL

As can be seen, Dimension 4 of the e-CF only provides examples of knowledge and skills.

Instead, the KS cataloguing process envisages setting specific knowledge and skills, for each professional role profile outline, which has been subject to the definition of an appropriate standard of the UNI 11621 series. Knowledge will be divided on the basis of 'knowledge units' and on the three levels (common knowledge, basic knowledge, specialised knowledge) as defined by UNI EN 17748 (ICT BoK).

To these three levels of knowledge, a fourth level concerning the transversal knowledge shall be added.

The catalogue, in an experimental form, will initially be populated with the knowledge and skills of the UNI 11621-4 standard related to cybersecurity professional role profiles.

If the pilot project yields positive results, as is hoped, the knowledge and skills of the other professional role profile schemes of the UNI 11621 series will be catalogued.

The cataloguing model could also be replicable for other knowledge and skills in other standards that do not fall within the domain of UNI 11621.

The catalogue can then be integrated into a broader information system concerning the role profiles of the professions covered by the UNI standards.

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