



DigComp into Action

GET INSPIRED
MAKE IT HAPPEN

A user guide to the
European Digital
Competence Framework



• SPAIN

IKANOS – NIRE GAITASUN DIGITALAK / MIS COMPETENCIAS DIGITALES

The project has adopted DigComp to map, develop and certify digital competence of the population in general and of specific jobs, including competences related to Industry 4.0

ACKNOWLEDGEMENTS & CONTACTS

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The Basque Country's Government launched the Ikanos project in 2012 to develop digital competence on a large scale within the Basque society, as part of its Agenda Digital de Euskadi 2015 (AD@15). Ikanos was from the very beginning inspired by and designed to implement the DigComp framework, aiming to address the common and specific digital competence needs of citizens, enterprises, civil servants, teachers and other segments of the Basque society.

Over time, Ikanos has focused on different segments and aspects of the Basque information society and economic life, always stimulating the acquisition of digital competence and promoting knowledge and application of the DigComp framework. In the past few years, Ikanos defined and assessed the digital profile of teachers working in public and private educational centres and of students of vocational training. Workshops

were organised to disseminate the role of digital technology in education, in certification, and in the creation also of new digital professional profiles.

The launch of the Ikanos project in 2013 (Digital Agenda 2015) was intended to provide expert support to individuals and organisations to encourage collaboration, explore, share and disseminate digital competencies and how digital competence can be acquired, evaluated and accredited according to the new conceptual framework.

In its initial launching phase, Ikanos has been responsible for accompanying the relevant agents and show how the DigComp European framework extends what was being done in terms of computer skills.

The main milestones have been:

- The application of the DigComp methodology and the



adaptation to the framework of professional qualifications.

- The preparation and start-up of the self-assessment test of digital competence.
- The organisation of thematic meetings with key actors.
- The mapping of experiences related to the evaluation and certification of digital competence.
- The dissemination of the project to national and European agents.

In the second phase, intense dissemination activities were continued, focusing efforts on identifying the significant elements of the improvement of digital skills and accompanying those responsible for digital competitions in Euskadi. After these two phases, an Ikanos model has been defined, featuring an implementation process model containing 5 steps and 7 tool elements

The project in the 2020 horizon evolves towards the integration of digital competence into the formal educational model, training for employment and lifelong learning to expand the employability of citizens. In 2016 Ikanos began developing the digital competence that Industry 4.0 needs by describing some sub-competences of the DigComp framework. In 2017, the activity has focused on the definition of new professional digital competence profiles related to industry 4.0

The DigComp framework has been used to draw digital profiles of both the general population and job requirements. The gap between these two classes of profiles ought to be resolved through education, training and new tools for lifelong learning, such as the Personal Learning Environment.

There are four tools based on DigComp content:




1. Ikanos self-assessment test v.2 (T2), which has been designed to provide a personal digital profile to any user. The test considers eight areas that make up an individual's digital profile.

2. Professional digital competence profiles on Basque industry 4.0 (T3): following the DigComp model, this tool identifies the mix of competences and proficiency that characterise industrial professions such as 3D Designer for additive manufacturing or Maintenance technician for 4.0 industry.

3. Digital competence certification system: BAIT (T4). Ikanos is about to launch the revision of the existing ICT competence certification system of the Basque country. Over the last 10 years, this system issued about 500,000 certificates, following the traditional approach to ICT skills development and certification focused on operational and application-related skills

4. Ikanos orientation guide for intermediaries. The Orientation Guide developed by Ikanos helps e-facilitators from the local KZ-Gunea telecentres network and other intermediaries to compare the Professional Digital Profile for a given occupation with the results from a user's Ikanos self-assessment test, in order to identify the main competence gaps faced by the user and to recommend training opportunities to fill those gaps. Regarding next steps, Ikanos priority is to go further in the promotion of digital profiles in economic activities.

RELATED ITEMS

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USEFUL LINKS

Info of the project in the Basque Government website

WWW.IKANOS.EUS



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IKANOS - SELF ASSESSMENT TEST

Ikanos self-assessment test helps users to define a personal digital profile. The test considers eight areas that make up an individual's digital profile, including DigComp's five competences areas

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Ikanos self-assessment tool v2 has been designed to provide a personal digital profile to any user. The test considers three areas that make up an individual's digital profile:

- The potential to develop digital competence (available ICT equipment, Internet access and how they are used)
- Past ICT training and certification experiences
- Level of digital competence according to the DigComp model's five competences areas: Information, Communication, Digital content creation, Safety and Problem Solving.

The test asks different types of questions (yes/no, single or multiple choice, scoring etc.) for a total of about 32 questions. Going through the whole questionnaire should require 20-25 minutes. The test produces a personalised "Digital profile report" with user's name and date, and gives the overall assessment score (basic, intermediate, advanced); also visualises the results of the three components of the competence development potential, gives the aggregate result for each one of DigComp's 5 areas of competence and shows the results for each one of DigComp's 21 digital competences.

The main features include the following:

- Registration of user with password

- Multi-session: test can be completed in several sessions
- Suitable for Mobile devices
- Send reports by email

The test also includes an annex for the interpretation of results. The user's digital profile is presented based on the organisational structure of the DigComp. The self-assessment tool is depicted in the image above.

RELATED ITEMS



USEFUL LINKS

Access page to the Ikanos test in English (available also in Spanish and Euskara, Basque language)

First version

IKANOS.ENCUESTA.EUSKADI.NET

New version

TINYURL.COM/Y8VJSKDG



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IKANOS - PROFESSIONAL DIGITAL COMPETENCE PROFILES

These competence profiles specify knowledge and skills that a professional must possess to perform tasks requiring ICT use in a range of occupations in different organisations

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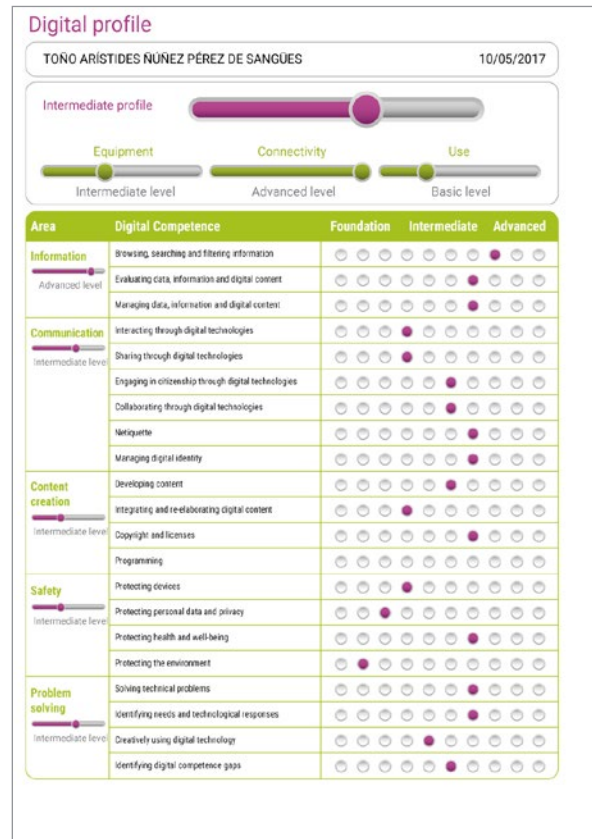
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A “professional competence profile” is the definition of a set of behaviours, skills, and abilities defining job performance in an occupation, which can be used to evaluate the potential of a professional and their suitability to the requirements of an occupation, to detect needs and manage training plans as well as to evaluate performance. The “Ikanos digital profile” spec-

ifies the digital knowledge, skills and attitudes that a professional must possess in order to adequately perform the tasks that require the use of ICT in a range of equivalent occupations in different organisations. The structure of the Ikanos digital profiles establishes three types of competencies:

- **Core digital competences:** ICT skills essential for this occupation
- **Complementary digital competences:** ICT skills needed in the sector
- **Transversal digital skills:** necessary in any work using ICTs

Not all DigComp competencies are necessary in all professional profiles; therefore, some competencies may be excluded. Some profiles consist of several competencies; because the job requires a variety of tasks and skills, while in other profiles the digital competency can be very specific (for a maintenance technician, their core competency will be 5.1 Technical problem solving). For each competence is established the appropriate level of performance and the type of knowledge and skills necessary for the specific digital profile are described.

The descriptions for each competency are specific to each job profile so that the same competency may have different descriptions, as it covers different tasks. When the tasks of a job affect a small area of a DigComp competence, in Ikanos sub-competences are discussed, which is a group of professional tasks / operations depicting specific and detailed aspects of a main competence, and which acquires great relevance for a specific professional field. Sub-competences make it possible to define more precisely the tasks of any occupation. A



digital professional profile based on sub-competencies, is going to be more useful for personnel selection and human resources management. Sub-competences help to maintain the integrity of the DigComp framework and the inter-operability among different competences assessments. In the work carried out so far, “industrial digital sub-competencies” have been identified in the following areas:

- monitoring of technological advances linked to life-long learning and Personal Learning Environments
- information management methodologies such as “Digital 5S”
- 3D design aspects for advanced CNC and Additive Manufacturing
- installation and configuration of industrial networks and electronics linked to machinery
- solving technical problems in the operation of Additive Manufacturing machines

Digital profiles are created by interviewing experts and workers belonging to the identified occupations to establish the digital aspects of their professional tasks as well as the content of their digital competences. The occupations selected in 2017 belong to the Industrial and ICT sectors, strategic in the development of the Basque Country economy: Industry 4.0, Automation, CAD/CAM, Additive manufacturing, etc. The digital professional profiles that have been designed during the year 2017 include:

- Advanced Industry maintenance technician
- 3D designer for additive manufacturing
- Collaborative Robotics technician
- Additive Manufacturing machinery operator

- SME Digital Transformation Manager
- Computer numerical control technician

In the industrial area, the Ikanos model focuses on defining digital competency profiles for positions based on company activity, creating a tool to evaluate the digital competency level of the employees and that makes explicit existing gaps, and generating a tool ensuring consolidation of the digital competency profile.

Some type of dynamic management of digital competences is required, because jobs are changing fast as digital technologies are incorporated. Digital competences required by the occupation can vary in a very short time because engineering departments assign new tasks to jobs, which require new skills. Therefore, a Digital Competence Management Tool is needed that can respond to these requirements made by companies to the Ikanos test:

- Edit questions to suit business processes and operations.
- Create annual and level versions of test.
- Carry out an annual review of profiles.
- Supervisor can assess the competence level of each worker and enters the data on the tool

Usually, companies have their own scales for assessing tasks that affect digital competency levels:

1. Nothing,
2. Only theoretical,
3. Knows how to do it with supervision,
4. Knows how to do it but cannot help,
5. Can teach others.

RELATED ITEMS



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IKANOS - THE NEW DIGITAL COMPETENCE EVALUATION SYSTEM

Ikanos is revising the ICT competence certification system IT Txartela by introducing validation methods and related certification procedures coherent with DigComp

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Ikanos is about to launch the revision of the existing ICT competence certification system in the Basque country. Over the last 10 years, the old system IT Txartela issued about 250,000 certificates (80,000 users 500,000 exams), following the traditional approach to ICT skills development and certification focused on operational and application-related skills. More specifically IT Txartela used to certify knowledge in computer solutions (+ of 50 different certifications): Microsoft and Open Office, Web browsers, operating systems, Internet, email, etc. as well as certifications of the Basque Institute of Public Administration (IVAP).

Ikanos is revising the system to introduce digital competence validation methods (e.g. with the use of simulations) and related certification procedures coherent

with the DigComp model. Citizens will be able to use KZgunea telecentre sites and assistance to undertake the free tests required for the certification. The new system, called BAIT, is aligned with the strategic directives defined in the European Digital Agenda, where key components of the digital competence are identified in terms of knowledge, skills and attitudes (see image).

Timeline for the development of the system:

- New platform development (v1.0) based on DigComp and integration with IT Txartela - 2016
- Content development: more than 700 questions and exercises (knowledge, skills and attitude) - 2016
- Feedback meetings with Basque Country stakeholders: Osakidetza, IVAP, SPRI, KZgunea - 2016



- New platform version (v2.0) - 2017
- Assessment items improvement per competence – 2017
- 8 digital competences aligned with IVAP needs and working hard with Mondragon University – 2017
- digital competences assessment in real environment with public workers – 2018
- digital competences assessment in real environment with public workers - 2018

The development of a model and a platform for evaluation, certification and recognition of digital competence, has been provided with the following characteristics.

Performance-based assessment following DigComp framework structure:

- Evaluation based on the user's performance on a wide variety of digital challenges that have to be solved.
- Assessment is aligned with the competence descriptors of the European digital competence framework DigComp.

Exercises and real situations:

- The evaluation reflects real situations that users will face in a professional context. Real tools (word processor, spreadsheets) have to be used to resolve assessment tasks.

Summative Evaluation and Certification:

- The test is carried out in a limited time, using the KZ-gunea telecenter network and other approved centres associated to the service. Tests are taken under supervision to ensure compliance with regulations.
- As a result, the user obtains digitally signed certifi-

cate that is automatically sent to MetaPosta service.

Evaluation with technological support:

The tests are carried out through a web platform consisting of:

- A web page for users to manage their registration in the tests.
- A web page for tests, where the tests are performed.
- An administration web, to manage the certification platform.

Users automatically receive the results during the test, being able to visualise their progress. Moreover, user history is updated automatically after the test is completed. Users interact with a series of programmes during tests such as office packages, browsers, etc. The test items can be solved without a specific knowledge of a particular tool.

Evaluation Analytics:

- The information gathered from tests is used to improve the system itself.

Adaptive Assessment:

- Test implementation is designed to provide the same precision in the results with a shorter test to avoid boredom / frustration and reducing the time.

IMS GLOBAL Learning Consortium Interoperability standards (Caliper, QTI, etc.):

- All the standards implemented in the platform to standardise the interoperability between the services accessed during the tests.

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