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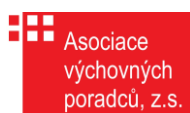
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# European and other classification of occupations, skills and competencies

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**C-Game project, O1-1.6**

**Prague, June 2020**



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## 1 Introduction

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This document is part of the Output\_O1 of the C-Game project which aim is to develop a C-Game: CAREER GUIDANCE GAME IN A CITY FULL OF OCCUPATIONS. C-Game will be a new serious game providing pupils aged 12-14 with a fun tool of career orientation based on the gradual learning on different professions in five language versions (English, Czech, Slovak, Greek, and Bulgarian) and four countries (Czech Republic, Slovakia, Greece, and Bulgaria).

C-Game offers pupils the opportunity to get acquainted in an entertaining way with approximately 600 occupations, which would broaden their overview of the labour market, the necessary skills for the performance of occupations pursued, and stimulate them to thinking about their future careers and the educational path leading to it. C-Game is based on the assumption that getting to know the world of work in school age contributes significantly in shaping children's future career and professional identity, and that the most effective means to do so is a fun game.

C-Game is not designed as a substitute of career guidance, but it helps students in their professional orientation through play, broadening horizons of employment and thus influences their future career decisions.

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## 2 ISCO - International Standard Classification of Occupations (United Nations)

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<https://www.ilo.org/public/english/bureau/stat/isco/>

The International Standard Classification of Occupations (ISCO), prepared by the ILO, is one of the main international occupational classifications. ISCO is a tool for organising jobs according to the tasks and duties undertaken. Its aims are to provide: a basis for international reporting, comparison and exchange of occupation data; a model for the development of occupational classifications; and a system that can be used directly in countries without a national classification. In the most recent edition, jobs are categorised by occupation by the type of work done and ranked on the basis of the skill level and skill specialisation they require.

ISCO recognises 10 major occupational groups: 1 Managers, 2 Professionals, 3 Technicians and Associate Professionals, 4 Clerical Support Workers, 5 Services and Sales Workers, 6 Skilled Agricultural, Forestry and Fishery Workers, 7 Craft and Related Trades Workers, 8 Plant and Machine Operators and Assemblers, 9 Elementary Occupations, and 0 Armed

Forces Occupations. Each of the 10 major groups is further organized into sub-major, minor and unit (not shown) groups. The basic criteria used to define the system are the skill level and specialization required to competently perform the tasks and duties of the occupations.

#### **Positives of usability of information for C-Game development**

Development of C-Game requires to have a database of occupations that is international, fully supported by the international community, accepted standard, can apply to all countries regardless any national classification standards they may have, and available in partner project languages. ISCO meets all these requirements.

#### **Negatives of usability of information for C-Game development**

Main ISCO disadvantage is that it is only an occupational classification – a list of occupations without any of their descriptions. In each country under certain occupation titles can the work contents differ.

#### **General remark on usability for C-Game development**

When developing the C-Game the ISCO will be used as main occupation database.

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### **3 ISCED - International Standard Classification of Education (United Nations)**

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<http://uis.unesco.org/en/topic/international-standard-classification-education-isced>

It is a tool to assemble, compile and report education statistics both within individual countries and internationally. It allows mapping national educational classifications into an internationally comparable system. In ISCED, programmes are categorised by level of education on a hierarchical scale, which ranges from pre-primary education to the doctoral level. The classification scheme relies on both the levels and the fields of education. ISCED (2011) distinguishes nine education levels.

#### **Positives of usability for C-Game development**

ISCED is also internationally recognized and accepted. It includes a complete classification system of education programmes which can apply to all countries as it allows mapping national education classifications into an internationally comparable system.

#### **Negatives of usability for C-Game development**

None.

### **General remark on usability for C-Game development**

If needed ISCED can be used without any limitations.

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## **4 DISCO - European Dictionary of Skills and Competences (European Commission)**

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[http://disco-tools.eu/disco2\\_portal/](http://disco-tools.eu/disco2_portal/)

DISCO is a comprehensive database of skill and competences terms (over 104,000) and sample phrases (over 36,000). In the database, skills and competences are classified, described and translated. Today, 11 languages are supported but the tool is being expanded to cover even more languages. DISCO is compatible with other European tools such as Europass and ESCO.

### **Positives of usability for C-Game development**

DISCO helps to understand and accurately express individual skills and competences in several European languages and can prove a valuable tool for the accurate translation of occupational skills in various languages. It includes an adequate number of terms and its compatibility with other European tools, may be considered an indicator of its credibility.

### **Negatives of usability of information for C-Game development**

Greek and Bulgarian languages are not included at the moment, which means that it cannot be utilized by Bulgaria and Greece for the customization of the game.

### **General remark on usability for C-Game development**

See point above.

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## **5 ESCO - European Skills, Competences, Qualifications and Occupations (European Commission, together with CEDEFOP)**

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<https://ec.europa.eu/esco/portal/skill>

ESCO stands for European Skills, Competences, Qualifications and Occupations. It is a classification developed by European Commission, under the direction of DG Employment, Social Affairs and Inclusion (tasked to manage the continued development and updating of ESCO). The ESCO classification consists of three pillars: skills and competences, qualifications and occupations. As such, it bridges the gap between education/ training and work. Attention is also being paid to the link between them. ESCO further aims to contribute to

labour mobility, online matching and shifting labour outcomes. ESCO's occupation pillar is linked to ISCO.

#### **Positives of usability of information for C-Game development**

It is based on ISCO codes. It is translated into 27 languages (all official EU languages plus Icelandic, Norwegian and Arabic). It provides extensive descriptions of occupations, skills/competencies and qualifications.

#### **Negatives of usability of information for C-Game development**

ESCO manual says *"ESCO currently provides a service API that is a version of the ESCO API accessible through the internet. In the near future, ESCO will provide a downloadable version of the ESCO API, allowing the software to be used locally on a computer."* But if you are not a programmer with installed Linux you will be not able to download the database. Web pages <https://ec.europa.eu/esco/portal/download/e4> offer downloading of several files but the information is in format that is not usable. For the C-Game we wanted to download the database of occupations with their description and did not succeed. Not all information is translated to national languages.

#### **General remark on usability for C-Game development**

If we have access to the database we can use it and it should ease us the preparation of the database of occupations but we were not able to download it and will have to translate more than 600 titles of occupations and their description manually.

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## **6 O\*NET (US Department of Labor)**

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<https://www.onetonline.org/>

The Occupational Information Network (O\*NET) is specific to the US economy, developed under the sponsorship of the US Department of Labor/Employment and Training Administration (USDOL/ETA). O\*NET was introduced as an online version of the Dictionary of Occupational Titles and during years it became one of the most widely used databases for information on workers, occupations, the labour market, and so on by researchers, policy-makers, career centres and other labour market agents. The data are organised as a content model with six domains. One important advantage is that this extensive database is updated very regularly and the database are available free of charge under favourable license conditions. The database includes more than 900 occupations that are equipped with a lot of indicators as well as with the Holland RIASEC codes. There is also a file with O\*Net crosswalk to European ISCO.

### **Positives of usability of information for C-Game development**

It contains a lot of useful information about the world of work and its extensive database is updated regularly. Much of the information that O\*Net is provided could definitely be of value for the content implementation of the C-Game. A great advantage is that the O\*Net Resource Centre offers with a very easy fulfilment of license conditions all data in several Excel files free of charge. The available converter allows us to obtain from O\*Net datasets the necessary information about selected professions and their connection to ISCO.

### **Negatives of usability of information for C-Game development**

Information is related to the US labour system and any information used, should be cross – checked to ensure that it applies to EU countries also. The US occupations in titles as well as in descriptions have to be adjusted to the European labour market by transformation them to ISCO codes and national ISCO occupations' titles.

### **General remark on usability for C-Game development**

We will use the O\*Net database and interconnect acquired information with ISCO.

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## **7 Conclusions and further steps**

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All above mentioned resources have their own value to contribute to the populations' career education. However, they could not all be of equal value as far as their usefulness for C-Game implementation.

International standards have the credibility needed to be used in C-Game but their compatibility with national standards has to be checked. European resources can also have a significant contribution to the game, since they are adapted to EU countries' needs and are compatible with other tools used by EU citizens. From the US resources, O\*NET of the US Department of Labor, seems to be an extensive source of information on occupations and other work related data which could significantly enrich C-Game content.

In conclusion, almost all these resources (except DISCO) can contribute their separate part to the C-Game, making it a complete, effective and reliable career education game for our target group.

### **From the desk research are foreseen following steps:**

- Uploading all available databases from O\*Net Resource Centre and under their licensing conditions
- Automatic translation of O\*Net occupation names into Czech

- Automatic assignment to O\*Net occupation ISCO codes with Occupation classifications crosswalks: ONET SOC to ISCO ([https://ibs.org.pl/app/uploads/2016/04/onetsoc\\_to\\_isco\\_cws\\_ibs\\_en1.pdf](https://ibs.org.pl/app/uploads/2016/04/onetsoc_to_isco_cws_ibs_en1.pdf))
- Manual control of Czech occupation translations and selection of approx. 600 occupations' titles into longlist of occupations that will be base of the C-Game
- Manual completion of ISCO codes
- Manual check of Czech names and their correction according to CZ-ISCO
- Adjustment and adding missing professions
- Request from partners their national versions of ISCO codes.
- Automatic translation of the occupation titles to Slovak, Greek, and Bulgarian languages
- Partners check the occupation titles, if there are all professions that they supposed to be important, and add missing ones
- Preparation of occupation description in EN and their translation to national languages



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## 8 Used sources

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CEDEFOP's Skills Panorama: <https://skillspanorama.cedefop.europa.eu/en>

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InGRID. Supporting expertise in inclusive growth.

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<https://www.bls.gov/soc/>

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## ***European and other classification of occupation, skills and competencies***

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