

## B-Solutions

# “Roadmap and Factsheet for the Recognition of Qualifications for Highly Demanded Professions”

### Step 1: Selecting Professions



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### Step 1: Selecting Professions

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## 1. Introduction

The B-solutions project “Roadmap and Factsheet for the recognition of qualifications for highly demanded professions” is aimed at creating two practical documents for first line supporters and citizens. The roadmap provides information on the recognition process going beyond that information that is readily available online or via first line support services. The factsheet further supports citizens by raising their awareness on essential aspects of the recognition process.

The topic of the recognition of qualifications is characterised by a number of complexities. First of all, we may distinguish different types of recognition. Recognition for the purpose of accessing a profession is referred to as “professional recognition”,<sup>1</sup> which is again subdivided into two categories of professional recognition. The terms *de jure* and *de facto* professional recognition are used to describe the two subtypes of professional recognition. Despite being legal terms, they amount to a difference between regulated and unregulated professions.<sup>2</sup> Although both types of professions face challenges with regard to their mobility, the challenges they face are different in nature. Professionals exercising non-regulated professions face the difficulty that the host country is unfamiliar with their foreign qualification.<sup>3</sup> For this category of professions, recognition depends on the approval of the future employer. The difficulties professionals in non-regulated professions face are mostly related to the fact that employers lack knowledge of what the education and training for a certain non-regulated profession consists of in another country.<sup>4</sup>

On the other hand, the mobility of professionals exercising regulated professions is heavily dependent on the approval (i.e. recognition) of a competent authority in a host country. In the EU, Directive 2005/36/EC as amended by Directive 2013/55/EU, also known as the Professional Qualifications Directive (PQD), is the most important legal instrument applicable to those individuals seeking to work in regulated professions across borders.<sup>5</sup> According to that directive, regulated professions are those for which qualification requirements are laid down in legal, regulatory or administrative provisions.<sup>6</sup> Qualifications, in turn, are defined as diplomas, certificates, attestations of competence, and work experience.<sup>7</sup>

The present study focuses on regulated professions (i.e. *de jure* professional recognition). Although the PQD provides for automatic recognition for some professions (mainly in medicine, industry,

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<sup>1</sup> Another type of recognition is academic recognition which is related to the situation where a person goes to another Member State to follow education and training. This type of recognition will not be considered further in this study.

<sup>2</sup> L. Kortese, H. Schneider & A. Hoogenboom, Bijlagen: Toelichtingsnota “Verwezenlijking van een grondbeginsel: De wederzijdse erkenning van beroepskwalificaties”, ITEM Maastricht 2018, p. 1.

<sup>3</sup> Communication from the Commission on recognition of qualifications for academic and professional purposes, COM(94) 596 final, p. 5.

<sup>4</sup> L. Teerling, Erkenning en acceptatie van diploma's in het beroepsonderwijs: Een speurtocht naar bestaande en vermeende problemen in de Nederlands-Duitse grensregio, EUREGIO Gronau 2018, p. 81.

<sup>5</sup> Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications, [2005] OJ L 255/22 as amended by Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013 amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System ('the IMI Regulation'), [2013] OJ L 354/132. The consolidated version of the Professional Qualifications Directive may be consulted via the following link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02005L0036-20160524>.

<sup>6</sup> Article 3(1)(a) Professional Qualifications Directive.

<sup>7</sup> Article 3(1)(b) Professional Qualifications Directive.

commerce and crafts), the majority of professionals exercising regulated professions obtain recognition under the directive's General System. That System leaves ample discretion to Member State competent authorities to evaluate professional qualifications in regard to content.

When it comes to regulated professions whose recognition takes place under the PQD's General System,<sup>8</sup> individuals may be faced with complex procedures set to determine whether they are able to obtain recognition and may finally get to work in another country. In this context, recognition procedures for regulated professions are often accused of being intransparent, time-consuming and sometimes even discouraging of mobility. Well-running recognition procedures are important to facilitate cross-border employment. In case recognition procedures are flawed, they may be detrimental to mobility by resulting in the loss of a job opportunity or a decision to abandon cross-border work. Not only does this harm cross-border employment and mobility, it also hampers optimal resource allocation and the realisation of EU free movement rights.

The objective of this B-solutions project is to enhance the transparency of recognition procedures for regulated professions by means of the development of roadmaps and factsheets. However, enhancing the transparency of recognition procedures is a challenging feat. The topic is paired with vast amounts of fragmentation. First of all, Member States are allowed to determine whether they want to regulate a profession and how to do so.<sup>9</sup> Often the decision to regulate a profession is connected to the protection of consumers, in particular in relation to information asymmetries existing between the professional and the service recipient. If a profession is then regulated, Member States must designate a competent authority tasked with taking recognition decisions of the qualifications held by foreign nationals.<sup>10</sup> Whereas some countries have centrally organised authorities, others do not. This study concerns the Dutch border region, thereby comprising the territories of the Netherlands, Belgium, North Rhine-Westphalia and Lower Saxony. Whereas the Netherlands has centrally organised competent authorities, Belgium and Germany do not.

The high level of fragmentation of legislation and actors involved in the recognition of qualifications calls for a selection of professions to be made after which roadmaps and factsheets may be developed. In this study, the focus is placed on highly demanded regulated professions identified from existing activities on cross-border employment. In this publication, we first explore different initiatives establishing rankings of highly demanded professions as established by national and regional employment services. Next, we will compose a list of highly demanded regulated professions from which an ultimate selection will be made for which roadmaps and factsheets are to be developed in the second phase of this project.

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<sup>8</sup> The Professional Qualifications Directive also includes two systems for automatic recognition. This type of recognition is mainly available for professions in the health care sector as well as for professionals exercising professions in crafts, commerce and industry. These professionals may gain automatic recognition on the basis of minimum training conditions (i.e. harmonized education and training) or professional experience. As recognition for these professionals is automatic due to agreements made at the European level in the Professional Qualifications Directive, these professions are not considered in this study. Instead, the present research focuses on General System professions, meaning professions for which qualifications are evaluated in terms of content during the recognition process.

<sup>9</sup> Case 222/86 *Heylens*, EU:C:1987:442, para. 10; Case C-340/89 *Vlassopoulou* EU:C:1991:193, para. 9.

<sup>10</sup> Article 3(1)(d) Professional Qualifications Directive.

## 2. Defining Highly Demanded Professions & Exploring National Rankings

The first step in the process of developing roadmaps and factsheets for highly demanded regulated professions relates to the selection of those professions. In order to assemble a list, it is important to pay attention to what is actually understood by the term “highly demanded profession”. As of yet, statistical data on the labour market and the professions that are in high demand is mostly restricted to the national or regional level and is compiled by employment services central to a certain Member State or region. In this study, we will explore the existing lists of highly demanded professions as established by the employment services in the Dutch border region, comprising the area of the Netherlands with Belgium, North Rhine-Westphalia and Lower Saxony.

In the Netherlands, the Employee Insurance Agency (*Uitvoeringsinstituut Werknemersverzekeringen – UWV*) creates overviews of professions that are in high demand. The UWV distinguishes between *krapteberoepen* (shortage professions) and *overstapberoepen* (transfer professions). Whereas shortage professions are those for which the labour market is tight and where there are many vacancies in relation to the number of registered jobseekers, transfer professions are logical occupations certain professionals may transition into which provide better job opportunities than the previous occupation.<sup>11</sup> Despite the differences between these categories of professions, both are considered as *kansrijke beroepen* or *kansberoepen* (promising professions), indicating that both categories of professions are considered to provide good opportunities for work. The latest publication by the UWV on promising professions dates from Fall 2018.<sup>12</sup> It is important to indicate which professions are promising in order to be able to inform jobseekers and unemployed persons about professions offering good employment opportunities. In order to establish a selection of professions UWV analyses data on vacancies, the number of registered jobseekers and the number of persons who find a job after a period of unemployment.<sup>13</sup>

In Belgium, the employment services are not organized centrally. Instead, they are organized per Community meaning attention should be paid to initiatives by the *Vlaamse Dienst voor Arbeidsbemiddeling en Beroepsopleiding – VDAB* (Flemish Community), *le Forem* (French Community), and the *Arbeitsamt der Deutschsprachigen Gemeinschaft Belgiens* (German-speaking Community). The lists of professions compiled by these organisations may be consulted in the Annex.

Starting with the VDAB, the organization publishes yearly overviews of so-called *knelpuntberoepen* (shortage professions) for the Flemish Community. Shortage professions are those for which employers experience difficulties to find suitable candidates.<sup>14</sup> There are three possible causes of shortages: quantitative, qualitative, and specific labour market circumstances.<sup>15</sup> The compilation of the list takes place after a statistical analysis of vacancies reported to the VDAB combined with qualitative information from industry associations and VDAB experts.<sup>16</sup> VDAB employs statistical

<sup>11</sup> Werk.nl, ‘Begrippenlijst’, [https://www.werk.nl/werk\\_nl/arbeidsmarktinformatie/begrippenlijst#paragraaf8\\_K](https://www.werk.nl/werk_nl/arbeidsmarktinformatie/begrippenlijst#paragraaf8_K).

<sup>12</sup> UWV, ‘Kansberoepen – Update najaar 2018’, <https://www.werk.nl/xpsimage/wdo218695>.

<sup>13</sup> Werk.nl, ‘Kansberoepen: voldoende tot goede kansen op werk’, [https://www.werk.nl/werk\\_nl/arbeidsmarktinformatie/sector-beroep/kansrijke-beroepen/kansberoepen](https://www.werk.nl/werk_nl/arbeidsmarktinformatie/sector-beroep/kansrijke-beroepen/kansberoepen).

<sup>14</sup> VDAB, ‘Knelpuntberoepenlijst’, <https://www.vdab.be/trends/vacatureanalyse.shtml>.

<sup>15</sup> VDAB, ‘Knelpuntberoepen in Vlaanderen 2018’, [https://www.vdab.be/sites/web/files/doc/trends/Knelpuntberoepen\\_2018.pdf](https://www.vdab.be/sites/web/files/doc/trends/Knelpuntberoepen_2018.pdf).

<sup>16</sup> Ibid.

indicators such as the minimum number of jobs and the fulfillment rate to identify those professions that are experiencing the most pressing shortages.

In the French Community, Forem is responsible for keeping track of highly demanded professions. The *fonctions critiques et en pénurie* are those occupations for which enterprises are experiencing difficulties in recruiting staff.<sup>17</sup> Forem distinguishes those professions which are critical (*critique*) from those which are scarce (*en pénurie*). Whereas critical professions are those for which the causes of shortages are qualitative (e.g. candidates do not have the required experience or qualifications), scarce professions are those for which the shortage of workers has quantitative causes (i.e. there are too little registered job seekers at Forem to satisfy the employment opportunities known to Forem).<sup>18</sup> As is the case for the VDAB, the list is compiled after statistical analysis and expert consultation. In particular, Forem calculates a satisfaction rate for employment opportunities on the basis of information that companies communicate as to whether or not the recruitment for which they relied on the services of Forem was successful.<sup>19</sup> Forem categorizes professions as critical if the satisfaction rate for certain positions within a profession is below the average of all professions *and* the time to fill a vacancy is greater than the average of all professions.<sup>20</sup> From those professions which are critical, Forem identifies those which are scarce by calculating "*l'indice de tension*" (tension index).

The *Arbeitsamt der Deutschsprachigen Gemeinschaft* also composes its own list of *Mangelberufe* (shortage professions).<sup>21</sup> In order to determine which professions in the German-speaking Community experience particular shortages, the *Arbeitsamt* employs its own method which consists of relating the number of jobseekers to the number of job vacancies.<sup>22</sup> In particular, a profession is considered a shortage profession when there were at least 5 job offers in the German-speaking Community for which the vacancy rate was below the average of all vacancies in the previous year. Additionally, the *Arbeitsamt* examines whether the time to fill a vacancy was above average. Apart from these aspects, the *Arbeitsamt* also examines how many jobseekers were registered in a certain occupational group (i.e. the number of potential applicants per vacancy) and consults with job mediators and other labour market experts.

In Germany, the *Bundesagentur für Arbeit* publishes regular analyses of shortages of skilled labour. In its *Fachkräfteengpassanalyse*, the *Bundesagentur* assesses the skilled labour situation in Germany on the basis of statistical data such as the number of reported vacancies and registered unemployed persons.<sup>23</sup> That publication focuses on the presence of a *Fachkräftemangel* (skills shortage). In particular, such a shortage exists when there are not enough qualified workers for the available

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<sup>17</sup> Le Forem, 'Fonctions critiques et métiers en pénurie', <https://www.leforem.be/former/horizonemploi/metier/index-demande.html>.

<sup>18</sup> C. Dalla Valle et al., *Métiers en tension de recrutement en Wallonie – Liste des métiers/fonctions critiques et en pénurie (Hors métiers de l'enseignement)*: Liste 2018, Le Forem 2018, p. 3.

<sup>19</sup> Ibid.

<sup>20</sup> Ibid.

<sup>21</sup> Arbeitsamt der Deutschsprachigen Gemeinschaft Belgiens, 'Liste der Mangelberufe in der Deutschsprachigen Gemeinschaft – Gültig für 2018-2019', [http://www.adg.be/PortalData/46/Resources/dokumente/artikel-dokumente/Mangelberufe\\_fuer\\_2018-2019.pdf](http://www.adg.be/PortalData/46/Resources/dokumente/artikel-dokumente/Mangelberufe_fuer_2018-2019.pdf).

<sup>22</sup> Arbeitsamt der Deutschsprachigen Gemeinschaft Belgiens, 'Mangelberufe', [http://www.adg.be/desktopdefault.aspx/tabcid-5401/9347\\_read-50919/](http://www.adg.be/desktopdefault.aspx/tabcid-5401/9347_read-50919/).

<sup>23</sup> Bundesagentur für Arbeit, *Fachkräfteengpassanalyse*, Juni 2018, p. 5; Bundesagentur für Arbeit, 'Statistik', <https://statistik.arbeitsagentur.de/>.

vacancies.<sup>24</sup> The analysis made by the *Bundesagentur* consists of three steps.<sup>25</sup> In the first step, the *Bundesagentur* makes an initial selection of professions after assessing the vacancy periods of registered jobs, the number of jobs registered at the *Bundesagentur*, number of unemployed persons, and the profession-specific unemployment rate. Professions are only included in the first selection if there are at least 60 available positions in one year. Furthermore, professions are included if the vacancy time is over 30% higher than average, there are less than 200 unemployed persons for every 100 vacancies for *Fachkräfte* (skilled workers) and *Spezialisten* (specialists),<sup>26</sup> and the occupation-specific unemployment rate does not exceed 3%. The second step concerns the validation of the professions identified in the first round by using additional expertise to evaluate additional statistical data and further information. In the final round, the *Bundesagentur* conducts an analysis focused on the German *Bundesländer* seeking to verify that the federal level professions are also needed at the level of the *Bundesländer* and to see whether additional professions may be identified.

As the preceding paragraphs have shown, the national or regional employment services maintain different definitions for professions that are in high demand and have different ways of establishing their rankings. Despite the existing differences, we may perceive a similarity, namely that the professions in high demand are those for which there are currently shortages of (skilled) employees on the labour market.

In this study, we will use the term “highly demanded professions” to describe those professions in which opportunities lie for citizens. We therefore approach the labour market from the perspective of the individual looking to take up a profession providing him or her with ample employment opportunities. This perspective is most similar to that maintained by the UWV in its list of *kansberoepen* (promising professions). Conversely, those professions where opportunities lie for individuals are also those professions for which labour market shortages exist. Therefore, the definition of a highly demanded profession maintained in this study is in keeping with national labour market initiatives mapping professions which are experiencing shortages of potential employees. In the following sections, we will explore the rankings of such professions in the Netherlands, Belgium, and Germany (in particular North Rhine-Westphalia and Lower Saxony) and create a single list of highly demanded and regulated professions for the aforementioned border region.

### 3. Compiling the B-Solutions List of Highly Demanded Professions

The previous Section has shown that there are different employment services using different methods to compile overviews of highly demanded professions. In this Section, we attempt to combine the national initiatives to come to a single list of highly demanded professions for the Dutch border area comprising the Netherlands, Belgium, North Rhine-Westphalia and Lower Saxony. In order to come to this consolidated list, we apply a number of steps.

First of all, the national and regional initiatives establishing highly demanded professions contain both regulated and unregulated professions. In this study, we focus on regulated professions on which the

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<sup>24</sup> Ibid.

<sup>25</sup> Ibid., p. 27-28.

<sup>26</sup> For *Experten* the *Bundesagentur* maintains a criterion of less than 400 unemployed for every 100 vacancies.

General System of the Professional Qualifications Directive applies. The first step in compiling the list for this study was to filter out the regulated professions to which the General System applies.

Furthermore, national or regional initiatives included in this study establish which professions are highly demanded for the entire territory to which they pertain. Where possible, we tried to ensure the relevance of a certain profession for the area along the Dutch border. Where there is a possibility to focus on highly demanded professions within a specific region, the exact region of focus is indicated for the labour market initiative at hand.

The next step in establishing our list of regulated professions relates to the selection of General System professions that are regulated in all Member States taken up in this study. In order to verify which are the corresponding professions among the Member States taken up in this study we use the jobseeker wizard in the European Commission's Regulated Professions Database.<sup>27</sup>

Finally, an ultimate selection is made. For considerations related to feasibility, this project focuses on an ultimate selection of three highly demanded regulated professions. Ideally, the ultimate selection of three highly demanded regulated professions features three professions from the three sectors in which most highly demanded professions today are located, namely the healthcare, social and technical sectors. In order to identify this ultimate selection, we look at additional labour market initiatives.

### **3.1 Creating National/Regional Shortlists**

#### **3.1.1 The Netherlands**

Starting with the Netherlands and the overview compiled by UWV (taken up in Annex A), we may identify the following shortlist of General System regulated professions in the Netherlands:

- *Kraanmachinist (mobiele kraan, torenkraan)*
- *Deskundig asbestverwijderaar/sloper*
- *Scheepswerktuigkundige*
- *APK-keurmeester*
- *Verzorgende IG*
- *Nurse practitioner/verpleegkundig specialist*
- *Medisch specialist:*
  - *Spoedeisende hulp (seh)*
  - *Arts voor verstandelijk gehandicapten*
  - *Jeugdgezondheidszorg*
  - *Verslavingsarts*
- *Gz-psycholoog, klinisch psycholoog*
- *Optometrist*
- *Logopedist*
- *Ergotherapeut*

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<sup>27</sup> European Commission, 'Regulated Professions Database – Jobseeker Wizard', <http://ec.europa.eu/growth/tools-databases/regprof/index.cfm?action=homepage>.

- *Fysiotherapeut*
- *Apothekersassistent*
- *Mondhygiënist*
- *Radiodiagnostisch laborant*
- *AA-accountant*
- *Registeraccountant*
- *Kandidaat notaris*
- *Advocaat*
- *Medewerker kinderopvang*
- *Leerkracht basisonderwijs*
- *Leerkracht (voortgezet) speciaal onderwijs*
- *Docent:*
  - *Nederlands, Engels, Frans Duits*
  - *Klassieke talen*
  - *Exacte vakken*
  - *Economie*
  - *Techniek/ICT*
- *Brandwacht/medewerker brandweer/brandweerman*

It is important to note that this list provides an overview for the whole of the Netherlands and that differences may occur among regions.<sup>28</sup> The UWV makes regional data available.<sup>29</sup> In order to ensure that the final list of professions is relevant for this study, the abovementioned professions were compared to the highly demanded professions in the Dutch Provinces at the borders with Belgium and Germany for which the UWV's tension indicator indicates that the labour market is tight or very tight.<sup>30</sup> Following this exercise, it may be perceived that the professions of *verzorgende IG* (second level nurse), *AA-accountant* (auditor/accountant), *register-accountant* (accountant/tax advisor), *artsen* (doctors), *laboranten* (lab technicians) and *docenten* (secondary school teachers) are particularly relevant in the Dutch Provinces bordering Belgium and Germany.

### *3.1.2 Belgium*

In Belgium, the employment services are organized at the level of the Communities. Section 2 has shown that each of the employment services (VDAB, Forem and the Arbeitsamt DG) maintain their own lists of highly demanded professions. These initiatives will be considered below.

When focusing on the Flemish Community and the list of the VDAB (to be consulted in Annex B.1), the following shortlist of General System regulated professions may be identified:

- *Boekhouder (gespecialiseerd)*
- *Landmeter*
- *Bewakingsagent (in case he/she is head of a security firm)*

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<sup>28</sup> UWV, 'Kansberoepen – Update najaar 2018', <https://www.werk.nl/xpsimage/wdo218695>.

<sup>29</sup> Via <https://www arbeidsmarktcijfers nl/Default.aspx>.

<sup>30</sup> Groningen, Drenthe, Regio Zwolle, Twente, Stedendriehoek en Noordwest Veluwe, FoodValley, Midden-Gelderland, Rijk van Nijmegen, Achterhoek, Rivierenland, Zeeland, West-Brabant, Noordoost-Brabant, Zuidoost Brabant, Helmond-De Peel, Noord-Limburg, Midden-Limburg, Zuid-Limburg.

- *Arts:*
  - *Spoed*
  - *Endocrinologie*
- *Kinésithérapeut*
- *Zorgkundige*
- *Leerkracht secundair onderwijs:*
  - *Technische vakken*
  - *Wiskunde*
  - *Frans*
- *Rijnstructeur*

The VDAB list of highly demanded professions is explained in a report.<sup>31</sup> That report also indicates the number of vacancies VDAB received per Province in the Flemish Community. Four out of five of the Community's Provinces border on the Netherlands (West-Vlaanderen, Oost-Vlaanderen, Antwerpen, Limburg). When looking at the professions for the aforementioned regions, it may be seen that *boekhouders* (accountants), *kinesitherapeuten* (physiotherapist), *zorgkundigen* (nurse assistant) and *leerkrachten* (secondary school teachers) are needed in all four Provinces bordering the Netherlands. On the other hand, the professions of *landmeter* (surveyor), *arts* (doctor), *gespecialiseerd verpleegkundige* (specialized nurse), *dentaltechnicus* (dental technician) and *rijinstructeur* (driving instructor) are only relevant to some of those regions. Furthermore, the professions of *bewakingsagent* (security guard) has a high number of vacancies in Vlaams-Brabant (not bordering the Netherlands) and a low number of vacancies in the other four Provinces. The VDAB report furthermore shows that the abovementioned professions differ in size, meaning more vacancies were registered for some of the professions than for others. In this context, the professions with over a 1000 registered vacancies are accountants, security guards, nurse assistants and secondary school teachers. The last category of professionals has the most vacancies by far (8.959). By contrast, the professions having less vacancies (under 200) are surveyors, doctors, specialized nurses, opticians, dental technicians, and driving instructors. Physiotherapists are located between the two categories with 789 vacancies.

Moving on to the French Community, the shortlist based on the list of highly demanded professions by Forem (full list in Annex B.2) is as follows:

- *Comptable*
- *Infirmier-ière en soins spécialisés*

As far as a regional demarcation is concerned, there is only one Province in the French Community that borders on the Netherlands, namely the Province of Liège. Statistics from Forem show that most opportunities for work as *comptable* (accountant/tax advisor) lie in that Province (33% of employment opportunities in 2017).<sup>32</sup> The percentage of employment opportunities for *infirmiers-ières en soins*

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<sup>31</sup> VDAB, Studie – Knelpuntberoepen in Vlaanderen 2018,  
[https://www.vdab.be/sites/web/files/doc/trends/studie\\_knelpuntberoopen.pdf](https://www.vdab.be/sites/web/files/doc/trends/studie_knelpuntberoopen.pdf).

<sup>32</sup> Forem, ‘Métiers et professions – technicien/technicienne des services comptables (12142) – Analyse’,  
<https://www.leforem.be/Horizonemploi/rome/12142.html>.

*spécialisés* (specialised nurses) is a lot lower in the Province of Liège with only 9% of employment opportunities for specialised nurses in 2017.<sup>33</sup>

Finally, the German-speaking Community also maintains its own list of *Mangelberufe* from which the following General System professions could be identified:

- *Pflegehelfer*
- *Lehrer für Oberstufe Sekundarschule (AESS)*
- *Lehrer für Unterstufe Sekundarschule (AESI)*
- *Primarschullehrer*
- *Buchhalter*

No further region specific regulated professions may be identified for the German-speaking Community.

### 3.1.3 Germany

The *Bundesagentur für Arbeit* establishes an overview of highly demanded professions for the whole of Germany. When focusing on the professions to which the General System of the PQD applies, the list (included in Annex C) is as follows:

- *Ingenieur/in*
  - *Fahrzeugbau*
  - *Fahrzeug*
  - *Fahrzeugtechnik*
  - *Schienenfahrzeugtechnik*
  - *Kraftfahrzeug*
  - *CAD/CAM*
  - *CAE*
  - *Konstruktion*
- *Podologe/Podologin*
- *Gesundheits- und kinderkrankenpfleger/in*
- *Kinderkrankenschwester/-pfleger*
- *Dialysefachkraft*
- *Fachkrankenschwester/-pfleger*
  - *Endoskopie*
  - *Intensivpflege/Anästhesie*
  - *klinische Geriatrie*
  - *Nephrologie*
  - *Onkologie*
  - *Operationsdienst*
  - *Palliativ- und Hospizpflege*
  - *Psychiatrie*
  - *Rehabilitation/Langzeitpflege*
- *Pflegefachkraft*
  - *Onkologie*
  - *Palliativpflege*

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<sup>33</sup> Forem, ‘Métiers et professions – Infirmier/infirmière de service spécialisé (24122) – Analyse’, <https://www.leforem.be/Horizonemploi/rome/24122.html>.

- Rehabilitation
- *Arzt/in*
  - *Not*
  - *Prüf*
  - *Stations*
- *Sportmediziner/in*
- *Physiologe/Physiologin*
- *Umweltsmediziner/in*
- *Physiotherapeut/in*
- *Sportphysiotherapeut/in*
- *Logopäde/Logopädin*
- *Altenpflegeassistent/in*
- *Altenpfleger/in*
- *Fachaltenpfleger/in:*
  - *Klinische Geriatrie/Rehabilitation*
  - *Onkologie*
  - *Palliativ- und Hospizpflege*
  - *Psychiatrie*
  - *Schmerztherapie/Onkologie/Palliativmedizin*
- *Augenoptikmeister/in*
- *Hörgeräteakustikmeister/in*
- *Orthopädietechnikermeister/in*
- *Zahntechnikermeister/in*

Apart from establishing an overview of highly demanded professions for the whole of Germany, the *Bundesagentur* also indicates which professions are particularly demanded in the *Bundesländer*. Although no additional highly demanded professions were reported for North Rhine-Westphalia, some were reported for Lower Saxony.<sup>34</sup> In particular, professions in *Elektrotechnik* (electrical engineering), *Bodenverlegung* (floor laying), and *IT-Systemanalyse, Anwenderungsberatung und IT-Vertrieb* (IT system analysis, user consultation and IT sales) are professions that are in extra high demand in Lower Saxony. However, as none of these professions are regulated, they will not be considered further.

### **3.2 The B-solutions shortlist**

In order to create the shortlist of professions for this B-solutions initiative a number of steps were undertaken. First of all, the professions were cross-referenced by using the jobseeker wizard on the European Commission's Regulated Professions Database.<sup>35</sup> Professions that were only mentioned on one national or regional list were removed from the selection. Professions that were mentioned on the lists of two or more territories were taken up in the final shortlist. Finally, the profession of specialised nurse was taken up although the profession is only regulated in Belgium and Germany because it is also a highly demanded profession in the Netherlands (despite being an unregulated profession there).

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<sup>34</sup> Bundesagentur für Arbeit, Fachkräfteengpassanalyse, Juni 2018, p. 23-24.

<sup>35</sup> European Commission, 'Regulated Professions Database – Jobseeker Wizard', <http://ec.europa.eu/growth/tools-databases/regprof/index.cfm?action=homepage>.

Netherlands-Belgium	Netherlands-Germany	Netherlands-Belgium-Germany	Belgium-Germany (unregulated in the Netherlands)
<u>Second level nurse</u> <ul style="list-style-type: none"> <li>– NL: Verzorgende IG</li> <li>– BE: Zorgkundige/Aide-soignant/Pflegehelfer</li> </ul> <u>Accountant</u> <ul style="list-style-type: none"> <li>– NL: Registeraccountant</li> <li>– BE: Boekhouder/Comptable/Buchhalter</li> </ul> <u>Secondary school teacher</u> <ul style="list-style-type: none"> <li>– NL: Leraar</li> <li>– BE: Leraar/Professeur de l'enseignement secondaire/Lehrer</li> </ul> <u>Primary school teacher</u> <ul style="list-style-type: none"> <li>– NL: Leerkracht basisonderwijs</li> <li>– BE: Basisonderwijs leraar/Instituteur primaire/Primarschullehrer</li> </ul>	<u>Speech and language therapist</u> <ul style="list-style-type: none"> <li>– NL: Logopedist</li> <li>– DE: Logopäde/Logopädin</li> </ul>	<u>Doctor – emergency care</u> <ul style="list-style-type: none"> <li>– NL: Arts spoedeisende hulp (SEH)</li> <li>– BE: Spoedarts</li> <li>– DE: Notarzt</li> </ul> <u>Physiotherapist</u> <ul style="list-style-type: none"> <li>– NL: Fysiotherapeut</li> <li>– BE: Kinésithérapeut/Kinésithérapeute/Physiotherapeut</li> <li>– DE: Physiotherapeut/in</li> </ul>	<u>Specialised nurse</u> <ul style="list-style-type: none"> <li>– BE: Gespecialiseerd verpleegkundige/Infirmière en soins spécialisés</li> <li>– DE: Fachkenschwester/Pfleger</li> <li>– NL: Gespecialiseerde verpleegkundige</li> </ul>

For considerations related to feasibility, it was proposed that the project would focus on an ultimate selection of three highly demanded regulated professions. In the proposal for the Roadmap & factsheet project, the suggestion was made to focus on the three sectors in which most highly demanded professions today are located, namely the healthcare, social and technical sectors. As the analysis in this document shows, there is only a limited amount of highly demanded professions to which the General System applies. In particular, there are very few highly demanded General System regulated professions in the technical sector. Most of these professions are eligible for automatic recognition on the basis of professional experience and therefore lie beyond the scope of this study. The national and regional lists as well as the shortlist above show that the healthcare sector is in high demand. As far as the social sector is concerned, there were no matching professions to be found for the Netherlands, Belgium, North Rhine-Westphalia and Lower Saxony. An unexpected highly demanded profession is that of accountant, which is in high demand in the Netherlands and all three Belgian Communities.

In order to come to this selection it was suggested that the shortlist be compared to additional existing labour market initiatives. Examples of such existing initiatives were the Benelux expert group on the transferability of qualifications which has a list of highly demanded professions, the Interreg project Euregio Xperience which focuses on stimulating young individuals to explore the cross-border labour market between the Netherlands and Germany,<sup>36</sup> and the Euregio barometer which indicates where opportunities lie for cross-border work.<sup>37</sup> However, an issue arises in relation to these initiatives. The shortlist of General System regulated professions mostly contains professions related to a higher education qualifications. The aforementioned initiatives focus on professions for which a VET-level qualification is necessary. Accordingly, the only profession that matches the aforementioned initiatives as well as the shortlist above is that of second level nurse.

Following the abovementioned selection of labour market initiatives it is clear that the profession of second level nurse is of particular importance and should thus be included in the present study. When it comes to the second and third professions to be included the professions of secondary school teacher and physiotherapist are suggested. This especially considering the fact that they are two of the most mobile professions in the EU according to the European Commission's regulated professions database.<sup>38</sup> Furthermore, maintaining the profession of secondary school teacher guarantees some differentiation as to sectors. This means that the ultimate selection of professions for which roadmaps and factsheets are to be developed in the context of this B-solutions is as follows:

- Second level nurses
  - NL: Verzorgende IG
  - BE: Zorgkundige/Aide-soignant/Pflegehelfer
  - DE: Kranken-pflegerhelfer/in

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<sup>36</sup> Euregio Rhine-Meuse-North, 'Euregio Xperience', <http://euregio-rmn.de/projecten/euregio-xperience-2/>.

<sup>37</sup> Ler(n)ende Euregio, Arbeidsmarktbarometer Euregio Rijn-Waal, <http://www.euregiobarometer.com/nl/>.

<sup>38</sup> European Commission, 'Ranking for establishment', [http://ec.europa.eu/growth/tools-databases/regprof/index.cfm?action=stat\\_ranking&b\\_services=false](http://ec.europa.eu/growth/tools-databases/regprof/index.cfm?action=stat_ranking&b_services=false).

- Physiotherapists
  - NL: Fysiotherapeut
  - BE: Kinesitherapeute/Kinésthérapeute/Physiothérapeute
  - DE: Physiotherapeut
- Secondary school teachers
  - NL: leraar voortgezet onderwijs
  - BE: leraar secundair onderwijs/Lehrer Sekundarschule/Professeur de l'enseignement secondaire
  - DE: Lehrer

In the second phase of the B-solutions project, roadmaps and factsheets will be developed for the three abovementioned professions. Furthermore, the recognition procedures for each of these professions will be assessed for *all* the territories included in the study (i.e. Netherlands, Belgium, North Rhine-Westphalia and Lower Saxony).

## Annex A – List of Highly Demanded Professions UWV

The list below is originates from the UWV's publication *Kansberoepen – Update najaar 2018*.<sup>39</sup> The professions marked in grey are those which are regulated and to which the General System applies. Most of the other professions are non-regulated apart from a few professions which qualify for automatic recognition. Some of the professions may be featured in different categories.

### **Construction & woodworking**

*Opperman/hulparbeider grond-, weg en waterbouw (gww)*

*Straatmaker/rioleringsmedewerker/vakman grond- weg- en waterbouw (gww)*

*Grond- en kabelwerker gas, water, elektra, datacommunicatie*

*Monteur bronbemalingsinstallatie*

*Medewerker civiele techniek*

*Opzichter weg- en waterbouw*

*(Hoofd)uitvoerder grond-, weg- en waterbouw (gww)*

*Tekenaar/werkvoorbereider/calculator grond-, weg- en waterbouw (gww)*

*Adviseur/ontwerper-constructeur civiele techniek*

*Projectleider grond-, weg- en waterbouw (gww)*

*Landmeter*

*Ict'er geo-informatiesystemen*

*Geodeet/ hydrograaf*

*Planoloog/ verkeers- en stedenbouwkundige*

*Beleidsadviseur milieу, planologie, ruimtelijke ordening, volkshuisvesting*

*Heier*

*Grondverzetmachinist (dragline, (bull)dozer, shovel/wiellaadschop, hydraulische graafmachine)*

*Kraanmachinist (mobiele kraan, torenkraan)*

*Opperman/hulparbeider bouw*

*Steigerbouwer*

*Metselaar, voeger, cellenbetonblokkenbouwer (gasbetonblokken, gipsblokken, giboblokken)*

*Natuursteenbewerker*

*Stukadoor, tegelzetter*

*Betonboorder, betonreparateur*

*Betonstaalverwerker*

*Dekvloerenlegger*

*Isoleerde bouw*

*Betontimmerman, bouwtimmerman*

*Houtskeletbouwer*

*Monteur ramen, deuren, kozijnen*

*Rolluik- en zonweringinstallateur*

*Dakdekker (bituum, pannen, riet)*

*(Onderhouds)schilder / behanger*

*Glaszetter*

*Parketvloerenlegger*

*Woningstoffeerder*

<sup>39</sup> UWV, 'Kansberoepen – Update najaar 2018', <https://www.werk.nl/xpsimage/wdo218695>.

*Meubelstoffeerd*

*Machinaal houtbewerker/CNC bediener houtbewerkingsmachines*

*Assemblage/montagemedewerker hout*

*Werkplaatsstimmerman*

*Voorman timmerfabriek*

*Interieurbouwer*

*Meubelmaker (machinaal, ambachtelijk)*

*Standbouwer*

*Wand- en plafondmonteur, keukenmonteur*

*Werkvoorbereider interieurbouwbedrijf*

***Deskundig asbestverwijderaar/sloper***

*(Hoofd)uitvoerder bouw en installatie*

*Werkvoorbereider-calculator bouw en installatie*

*Tekenaar-constructeur bouwkunde, BIM-modelleur*

*Bouwkundig architect/ontwerper*

*Bouwkundig projectleider/projectontwikkelaar*

*Bouwkundig adviseur (algemeen, akoestiek, asbestsanering, brandveiligheid/inbraakpreventie,*

*Energieprestatie/EPA)*

*Bouwkundig inspecteur*

*Kopersbegeleider bouw*

*Technisch vastgoedbeheerder*

### **Electrotechnics**

*Kabellasser / monteur datacommunicatie*

*Klantmonteur ICT / telecom*

*(Hoofd)monteur elektriciteitsnetten*

*Elektricien / monteur elektrische installaties (huisaansluitingen)*

*Monteur beveiligingsinstallaties*

*Scheepselektricien / scheepselektrontmonteur*

*Monteur seinwezen, railinfrastructuur*

*Medewerker technische dienst (mechanisch/elektrotechnisch)*

*Hoofd technische dienst*

*Monteur elektromotoren*

*Monteur witgoedapparaten*

*Elektronica monteur (industriële en consumentenelektronica)*

*(Hoofd)monteur elektrotechniek industrie*

*Meet- en regeltechnicus / monteur meet- en regeltechniek*

*Projectleider/ontwerper industriële automatisering / PLC-programmeur*

*Embedded software engineer*

*Tekenaar-werkvoorbereider elektrotechniek*

*Ontwerper elektrotechnische installaties / elektronica*

*Projectleider elektrotechniek*

*Inspecteur elektrische installaties*

*Organisatieadviseur (technisch)*

## **Installation**

*Installatiemonteur gas, water, sanitair, verwarming/ allround loodgieter  
Onderhoudsmonteur/loodgieter gas, water, sanitair, (centrale) verwarming  
(Hoofd)monteur verwarming utiliteitsbouw of woningbouw  
Pijpfitter industriële montage / flensmonteur  
Monteur koelelementmontage, luchtbehandeling  
Monteur/inbedrijfsteller fabrieksinstallaties  
(Hoofd)uitvoerder bouw en installatie  
Werkvoorbereider-calculator bouw en installatie  
Tekenaar-werkvoorbereider installatietechniek  
Projectleider, ontwerper-constructeur installatietechniek  
Inspecteur elektrische installaties*

## **Metal, Metalelectrics, machinery, manufacturing industry**

*Medewerker metaalgieterij (afwerker, metaalgieter)  
Plaatwerker/ CNC-metaalbuiger, - snijder  
Isoleerde industrie/isolatieplaatwerker  
Containermonteur  
Soldeerder, lasser niveau 1 & 2 (foto, elektrode, TIG, MIG / MAG)  
Gespecialiseerd lasser niveau 3 & 4 (TIG, MIG/MAG, elektrode)  
Lasrobotbeheerder  
Machinebankwerker  
Machinaal verspaner (draaien, frezen, slijpen) - niet CNC  
CNC-machinebediener (excl programmeren)  
CNC-programmeur  
CNC-verspaner inclusief programmeren (draaien, frezen, slijpen) Gereedschapmaker / fijninstrumentmaker  
Verfpuiter, constructieschilder  
Autospuiter  
Monteur landbouwmachines  
Monteur grondverzet- en wegenbouwmachines  
Monteur kranen en funderingsmachines (ook on- en offshore)  
Monteur heftrucks  
Carrosseriebouwer  
Scheepsbouwer (metaal)  
**Scheepswerktuigkundige**  
Monteur vliegtuigonderhoud  
Productiemedewerker  
Assemblagemedewerker/-technicus voertuigen, elektronica, metaal/elektro, kunststof/rubber  
Voorman montage/assemblage metaalproducten  
Monteur/reparateur ramen, deuren, kozijnen, trappen (metaal, kunststof)  
Constructiesamenbouwer/-steller  
(Voorman) constructiebankwerker  
Monteur automaten  
Monteur/inbedrijfssteller fabrieksinstallaties  
(Onderhouds)monteur machines/installaties, liften*

*Medewerker technische dienst (mechanisch/elektrotechnisch)*  
*Hoofd technische dienst*  
*Validatie engineer/maintenance engineer*  
*Werkvoorbereider/calculator werktuigbouw, elektrotechniek*  
*Tekenaar-constructeur werktuigbouw, machines/gereedschappen, scheepsbouw*  
*Ontwerper-constructeur werktuigbouw, machines/gereedschappen*  
*Projectleider werktuigbouw*  
*Industrieel ontwerper (technisch)*  
*Manager afdeling research / R&D*  
*Organisatieadviseur (technisch)*  
*Bedrijfsleider metaalbewerkingsbedrijf / constructiebedrijf*  
*Technisch-commercieel personeel (inkopers/verkopers/accountmanagers technische producten)*

### **Process technology and industry**

*Mechanisch operator procesindustrie, voedingsmiddelenindustrie*  
*Operator A (proces)industrie*  
*Operator B procesindustrie, voedingsmiddelenindustrie*  
*Operator C procesindustrie, voedingsmiddelenindustrie*  
*Calculator procesindustrie (technisch)*  
*Procestechnoloog, productontwikkelaar procesindustrie, voedingsmiddelenindustrie*  
*Productieleider/manager procesindustrie, voedingsmiddelenindustrie*  
*Kwaliteitscontroleur procesindustrie (hbo)*  
*Medewerker technische dienst (mechanisch/elektrotechnisch)*  
*Hoofd technische dienst*  
*Validatie engineer / maintenance engineer*  
*Organisatieadviseur (technisch)*

### **Automotive and vehicle technology**

*Banden- en uitlaatspecialist*  
*Autoruitschademonteur*  
*Autoschadehersteller*  
*Autospuiters*  
*(Bedrijfs)autotechnicus (fossiele brandstof en elektrisch aangedreven)*  
*APK-keurmeester*  
*Fietstechnicus*  
*Werkplaatschef auto's*

### **ICT**

*Servicedeskmedewerker ICT*  
*Beheerder ICT (netwerk-, systeem-, applicatie-, functioneel-, database-beheer)*  
*Database/datawarehouse ontwikkelaar*  
*Projectleider/ontwerper industriële automatisering / PLC-programmeur*  
*Embedded software engineer*  
*Hardware engineer ICT*  
*Systeemprogrammeur*  
*Software ontwikkelaar*

*Programmeur/developer specifieke toepassingen en talen (C, C#, PHP, java, .NET, app)*

*Ict'er geo-informatiesystemen*

*Testdeveloper/testmanager ICT*

*Architect/specialist technische infrastructuur ICT*

*Systeemontwikkelaar/-ontwerper*

*Informatieanalist*

*Functioneel ontwerper*

*BI-specialist, data-scientist, business-analist*

*Securityspecialist ICT*

*Adviseur ict (o.a. erp, crm)*

*Projectleider ICT*

*Accountmanager ICT*

### **Health care, medical, medical-technical**

*Woonbegeleider gehandicaptenzorg*

*Verzorgende ig, kraamverzorgende*

*Verpleegkundige mbo, hbo*

*Gespecialiseerd verpleegkundige ziekenhuis (bijvoorbeeld seh, intensive care, cardiologie, oncologie, kinder, dialyse)*

*wijkverpleegkundige*

*Praktijkverpleegkundige/praktijkondersteuner huisartsenzorg (poh)*

*Verpleegkundige psychiatrie/sociaal-psychiatrisch verpleegkundige/praktijkondersteuner huisarts GZ*

*Ambulanceverpleegkundige*

*Revalidatieverpleegkundige*

*Geriatrisch verpleegkundige*

*Nurse practitioner/verpleegkundig specialist*

*Operatie-assistent, anesthesiemeedewerker*

*Physician assistant*

*Verloskundige*

*Bedrijfsarts, verzekeringsarts*

*Verpleeghuisarts/specialist ouderengeneeskunde*

*Klinisch geriater*

*Arts spoedeisende hulp (seh)*

*Arts voor verstandelijk gehandicapten (AVG)*

*Arts jeugdgezondheidszorg*

*Verslavingsarts*

*Psychiater*

*Gz-psycholoog, klinisch psycholoog*

*Medewerker steriele medische hulpmiddelen*

*Audicien, opticien*

*Technisch oogheelkundig assistent*

*Optometrist*

*Logopedist*

*Ergotherapeut*

*Fysiotherapeut, manueel therapeut*

*Apothekersassistent*

*Apotheker*  
*Tandartsassistent*  
**Mondhygiënist**  
*Tandarts*  
*Medisch elektronicus*  
**Radiodiagnostisch laborant**  
*Laborant klinische neurofysiologie*  
*Orthopedisch (prothese) technicus*  
*Onderzoekers en adviseurs arbeidsomstandigheden*

### **Financial**

*(Senior) financieel administrateur*  
*Assistent controller*  
*Controller*  
*Registercontroller*  
*EDP/IT auditor*  
*Compliance officer*  
*Assistent-accountant, AA-accountant*  
**Registeraccountant**  
*Belastingadviseur*  
*Financieel adviseur*  
*Inkoper*  
*Schadebehandelaar/-expert*  
*Hypotheekadviseur*  
*Taxateur onroerend goed (onder andere woz)*

### **Economic-commercial-legal**

*Technisch-commercieel personeel (inkopers/verkopers/accountmanagers technische produkten)*  
*Accountmanager zakelijke diensten*  
*Commercieel medewerker binnendienst*  
*Medewerker klantcontact/klantenservice/callcenter*  
*Supervisor klantenservice*  
*Online marketeer/ontwikkelaar online marketing*  
*Marktonderzoeker*  
*Productmanager*  
*Verkoopmedewerker tankstation*  
*Afdelingsmanager supermarkt*  
*Bedrijfsmanager detailhandel*  
*Keurmeester AGF*  
*Productieplanner*  
*Recruiter*  
*Juridisch adviseur/onderzoeker*  
*Regulatory affairs officer*  
**Kandidaat notaris**  
**Advocaat**

## **Education and pedagogical**

*Medewerker kinderopvang*

*Leerkracht basisonderwijs*

*Leerkracht (voortgezet) speciaal onderwijs*

*Docent Nederlands, Engels, Frans Duits 1<sup>e</sup> en 2<sup>e</sup> graads*

*Docent klassieke talen*

*Docent exacte vakken 1<sup>e</sup> en 2<sup>e</sup> graads (wiskunde, natuurkunde, scheikunde, biologie) docent economie 1e en 2e graads*

*Docent techniek/ICT*

*Rij-examinator*

## **Transport and logistics**

*Postbezorger*

*(Brom)fietskoerier*

*Verhuizer*

*Expeditiemedewerker, lader / losser*

*Orderpicker, magazijnmedewerker*

*Heftruckchauffeur*

*Bijrijder*

*Vrachtwagenchauffeur (binnenland/buitenland)*

*Vrachtwagenchauffeur speciaal vervoer (gevaarlijke stoffen, truckmixer, tankauto, geconditioneerd vervoer, autolaadkraan, kiepauto)*

*Buschauffeur (touringcar, stad- en streekvervoer)*

*Treinmachinist spoorwegen*

*Rangeerder spoorwegen*

*Matroos binnenvaart*

*Schipper/stuurman binnenvaart*

*Scheepswerktuigkundige*

*Transportplanner*

*Expediteur, cargadoor, declarant (douane)*

*Logistiek teamleider*

## **Agricultural, green, environment**

*Tractorchauffeur/loonwerker/landbouwmachinist*

*Medewerker varkenshouderij*

*Vakbekwaam/zelfstandig medewerker teelt, meewerkend voorman/vakexpert teelt – groene technologie*

*(Vakbekwaam) medewerker boomkwekerij*

*Medewerker hovenier/groenonderhoud - (voorman) hovenier/groenonderhoud*

*Greenkeeper, boomverzorger*

*Onderzoeker plantenteelt/veredelaar*

*Bodemkundig onderzoekers en – saneerders*

*Accountmanager agrarische producten*

*Keurmeester AGF*

*Milieu-inspecteur*

*Beleidsadviseur milieu, planologie, ruimtelijke ordening, volkshuisvesting*

**Voeding, horeca**

*Allround brood- en banketbakker*

*Medewerker fastservice*

*Keukenassistent*

*(Zelfstandig werkend) restaurantkok*

*Chef-kok restaurant, chef de partie*

*Medewerker bediening horeca, gastheer/gastvrouw horeca, barkeeper*

*Restaurantmanager/food and beverage manager*

*Keurmeester AGF*

**Cleaning**

*Medewerker reiniging en afvalrecycling*

*Glazenwasser*

*Gevelreiniger*

*Industrieel schoonmaker (machines, installaties), schoonmaker calamiteiten, straler*

*Schoonmaker cleanroom*

*Schoonmaker (bedrijven, instellingen, particulieren)*

*Medewerker autowasstraat/autopoetser*

*Ongediertebestrijder*

**Safety**

*Verkeersregelaar*

*Parkeercontroleur*

*Objectbeveiliger*

*Brandwacht/medewerker brandweer/brandweerman*

*Officier krijgsmacht*

*Soldaat krijgsmacht*

## **Annex B.1 – List of Highly Demanded Professions VDAB**

The list below is originates from the VDAB's publication *Knelpuntberoepen in Vlaanderen 2018*.<sup>40</sup> The professions marked in grey are those which are regulated and to which the General System applies. A large number of professions in the construction, industry and crafts sectors are also regulated. However, these profession fall within the scope of application of the PQD's system on automatic recognition and are therefore not considered in this study.

### **Administration**

*Boekhouder (gespecialiseerd)*  
*Medewerker callcenter*  
*Commercieel medewerker*  
*Management assistent*  
*Technisch-administratief medewerker*  
*Verantwoordelijke boekhoudkundige en financiële audit en controle*  
*Beheerder vastgoed*

### **Construction**

*Landmeter*  
*Conducteur bouw*  
*Werfleider*  
*Calculator bouw*  
*Technicus studiebureau bouw*  
*Metselaar*  
*Daktimmerman (icm dakdekker)*  
*Isoleerde ruwbouw en dak*  
*Natuursteenbewerker*  
*Asbestverwijderaar*  
*Dekvloerlegger*  
*Vloerder tegelzetter*  
*Dakdekker schuine daken*  
*Dakdekker platte daken*  
*Binnenschrijnwerker*  
*Buitenschrijnwerker*  
*Monteur van interieurinrichtingen*  
*Werkplaatschrijnwerker*  
*Glaswerker*  
*Residentieel elektrotechnisch installateur*  
*Plaatser van boven- en ondergrondse kabels en leidingen*  
*Installateur van datacommunicatienetwerken*  
*Sanitair installateur*  
*Monteur van centrale verwarmingsinstallaties*  
*Brandtechnicus*  
*Plaatser van ventilatiesystemen*  
*Wegenwerker*  
*Bestuurder van bouwplaatsmachines*  
*Bestuurder van betonnerings- en asfalteringsmachines*

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<sup>40</sup> VDAB, 'Knelpuntberoepen in Vlaanderen 2018',  
[https://www.vdab.be/sites/web/files/doc/trends/Knelpuntberoepen\\_2018.pdf](https://www.vdab.be/sites/web/files/doc/trends/Knelpuntberoepen_2018.pdf).

*Kraanbestuurder  
Torenkraanbestuurder  
Rigger-monteerder*

**Communication and knowledge**

*Bedrijfsanalist ICT  
Integratie en implementatie expert ICT  
Netwerkbeheerder  
Databankbeheerder  
Analist ontwikkelaar ICT  
Expert onderzoek en ontwikkeling in de industrie*

**Services**

*Kapper  
Industrieel reiniger  
Schoonmaker bij mensen thuis  
Schoonmaker van ruimten en lokalen  
Ruitenwasser  
Bewakingsagent*

**Hospitality, trade and sales**

*Chef-kok  
Chef-kok grootkeuken  
Hulpkok  
Maître d'hôtel  
Barman  
Kelner restaurant  
Kelner brasserie  
Hulpkelner  
Winkeldirecteur  
Winkelmanager kleinhandel  
Departementsverantwoordelijke winkel  
Technisch adviseur klantenondersteuning  
Technisch-commercieel adviseur  
Vertegenwoordiger  
Technisch-commercieel afgevaardigde*

**Industrial and crafts**

*Productiemanager  
Leidinggevende industriële productie  
Leidinggevende mechanische productie  
Verantwoordelijke planning en productiebeheer  
Verantwoordelijke productiemethodes en industrialisatie  
Verantwoordelijke kwaliteitscontrole  
Verantwoordelijke industrieel onderhoud  
Technicus productieproces en methodes  
Technicus onderzoek en ontwikkeling in elektriciteit en elektronica  
Technicus onderzoek en ontwikkeling in de procesindustrie  
Technicus grafische industrie  
Kwaliteitscontroleur mechanische en metalen constructies  
Technicus elektrische en elektronische toestellen, witgoed*

*Technicus controle en kwaliteit elektriciteit en elektronica*  
*Technicus elektronische installaties*  
*Technicus industriële installaties*  
*Technicus ontwerper industriële automatisering*  
*Technicus industriële automatisering*  
*Technicus communicatienetwerken*  
*Onderhoudstechnicus liften*  
*Technicus koeltechniek en klimatisatie*  
*Onderhoudstechnicus verwarmingsinstallaties*  
*Technicus van voertuigen*  
*Technicus meubels en hout*  
*Bouwkundig tekenaar*  
*Tekenaar-ontwerper mechanica*  
*Tekenaar-ontwerper elektriciteit, elektronica*  
*Bakker*  
*Slager*  
*Uitsnijder-uitbener*  
*Visfileerde*  
*Productieoperator voeding*  
*Operator voorbereiding en bevoorrading weverij*  
*Operator textielproductiemachines*  
*Operator textielveredeling*  
*Stoffeerde*  
*Drukker*  
*Operator houtbewerking*  
*TIG Lasser*  
*Operator drukafwerkingsmachines*  
*Drukafwerker*  
*Insteller-bediener CNC werktuigmachines*  
*Insteller - bediener van conventionele werktuigmachines*  
*Matrijzenmaker*  
*Pijpfitter*  
*Onderhoudsmecanicien*  
*Monteur van staalbouwelementen*  
*Stellingbouwer*  
*Voorbewerker koetswerk*  
*Plaatwerker koetswerk*  
*Spuiter koetswerk*  
*(De)monteur koetswerk*  
*Onderhoudsmecanicien van personenwagens en lichte bedrijfsvoertuigen*  
*Onderhoudsmecanicien van bedrijfs- of vrachtwagens*  
*Technieker werf-, landbouw- en hefmachines*  
*Onderhoudselektricien*  
*Industrieel elektrotechnisch installateur*  
*Bordenbouwer*  
*Operator productie van stortklaar beton, cement, asfalt en granulaten*  
*Operator van een papier- of kartonmachine*  
*Operator verpakkingsinstallaties*  
*Operator energetische en petrochemische installaties*  
*Operator installaties in de chemische industrie*  
*Machineregelaar kunststofverwerking*

*Productiemedewerker kunststofverwerking  
Uitvoerder van werken op hoogte  
Meubelmaker*

**Medical, paramedical and nursing**

*Arts (geriatrie, oftalmologie, neurologie, pediatrie, endocrinologie, spoed)*

*Kinesitherapeut*

*Apotheker*

*Zorgkundige*

*Verzorgende*

*Hoofdverpleegkundige*

*Verpleegkundige*

*Gespecialiseerd verpleegkundige operatiekwartier*

*Opticien*

*Dentaaltechnicus*

**Pedagogy**

*Leerkracht secundair onderwijs (technische vakken, wiskunde, Frans)*

*Monitor-begeleider in de sociale economie*

*Rijinstructeur*

**Transport and logistics**

*Logistiek verantwoordelijke*

*Bestuurder trekker-oplegger*

*Vrachtwagenbestuurder vaste wagen*

*Vrachtwagenbestuurder met aanhangwagen*

*Vrachtwagenbestuurder uitzonderlijk vervoer*

*Vrachtwagenchauffeur distributie*

*Autocarchauffeur*

*Autobuschauffeur*

*Expediteur*

*Dispatcher goederenvervoer*

*Douanedeclarant*

*Trein- en metrobestuurder*

## **Annex B.2 – List of Highly Demanded Professions Forem**

The list below is originates from the Forem's publication *Métiers en tension de recrutement en Wallonie*.<sup>41</sup> The professions marked in grey are those which are regulated and to which the General System applies. As is the case for the VDAB and UWV lists, a large number of professions in the health, construction, industry and crafts sectors are also regulated. However, these profession fall within the scope of application of the PQD's system on automatic recognition and are therefore not considered in this study.

### **Individual and public services**

*Aide-ménager·ère*

### **Administrative and commercial professions**

*Comptable (M/F/X)*

*Conseiller·ère en assurances*

### **Hospitality**

*Cuisinier·ère*

*Chef·fe de cuisine*

### **Distribution and sales**

*Délégué·e commercial·e en biens de consommation*

*Délégué·e commercial·e en services auprès des entreprises*

*Vendeur·euse de véhicules automobiles*

### **Paramedical professions**

*Infirmier·ière en soins généraux*

*Infirmier·ière en soins spécialisés*

*Opticien·ne Optométriste*

### **Medical Professions**

*Médecin généraliste (M/F/X)*

*Pharmacien·ne*

### **Information & communication**

*Gestionnaire d'exploitation informatique (M/F/X)*

*Analyste informatique (M/F/X)*

*Développeur·euse informatique*

*Web développeur·euse*

*Analyste business (M/F/X)*

*Chef·fe de projet informatique*

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<sup>41</sup> C. Dalla Valle et al., *Métiers en tension de recrutement en Wallonie – Liste des métiers/fonctions critiques et en pénurie (Hors métiers de l'enseignement): Liste 2018*, Le Forem 2018, p. 3.

**Sales professionals**

*Responsable de la stratégie commerciale (M/F/X)*

*Responsable commercial (M/F/X)*

**Construction, public works and mining personnel**

*Ouvrier·ère de voirie*

*Poseur·euse de canalisations*

*Bétonneur·euse*

*Cimentier·ière - façadier·dière*

*Monteur·euse en structure bois*

*Charpentier·ière*

*Couvreur·euse*

*Étancheur·euse*

*Installateur·trice électricien·ne*

*Monteur·euse en sanitaire et chauffage*

*Monteur·euse en climatisation*

*Poseur·euse de fermetures menuisées*

*Monteur·euse de cloisons et/ou faux-plafonds*

**Transport & logistics**

*Chauffeur·euse d'autocar*

*Conducteur·trice d'autobus*

*Chauffeur·euse de poids lourd*

*Conducteur·trice d'engins de terrassement*

*Conducteur·trice de grue*

*Magasinier·ière*

**Mechanics, electricity & electronics**

*Chaudronnier·ière tôlier·ière*

*Technicien·ne en systèmes d'usinage (métal)*

*Tuyauteur·euse industriel·le*

*Mécanicien·ne d'entretien industriel*

*Mécanicien·ne en génie civil*

*Mécanicien·ne agricole et travaux techniques*

*Mécanicien·ne poids lourds*

*Mécanicien·ne polyvalent·e*

*Technicien·ne en maintenance et diagnostic automobile*

*Préparateur·trice en carrosserie*

*Tôlier·ière en carrosserie*

*Peintre en carrosserie (M/F/X)*

*Électromécanicien·ne de maintenance industrielle*

**Process industries**

*Opérateur·trice de production (industrie chimique)*

*Conducteur·trice de ligne de production en industrie alimentaire*

**Personnel from other industries (flexible materials, graphic industries, furniture and wood)**

*Conducteur-trice de machines de fabrication de produits textiles*

**Crafts professions**

*Boulanger-ère*

*Pâtissier-ère*

*Abatteur-euse (transformation de viande)*

*Découpeur-euse - désosseur-euse*

*Boucher-ère - trameur-euse/ portionneur-euse*

*Préparateur-trice de viande*

*Menuisier-ère*

**Industrial control**

*Chef-fe d'équipe des industries de process*

**Industrial technicians**

*Planificateur-trice de production (agent de planification)*

*Dessinateur-trice - concepteur-trice en mécanique*

*Dessinateur-trice en mécanique*

*Technicien-ne de laboratoire de recherche*

*Technicien-ne de production des industries*

*Technicien-ne de laboratoire de contrôle qualité*

*Technicien-ne d'installation et de maintenance industrielle*

*Technicien-ne automaticien-ne*

*Technicien-ne d'entretien et d'exploitation de chauffage*

*Technicien-ne frigoriste*

*Technicien-ne de maintenance en électronique*

**Technical managers industry**

*Responsable de gestion industrielle et logistique (M/F/X)*

*Responsable recherche et développement (M/F/X)*

*Responsable de production (M/F/X)*

*Responsable qualité (M/F/X)*

*Attaché-e technico-commercial-e*

**Supervisors, technicians and technical managers outside industry**

*Dessinateur-trice de la construction*

*Chargé-e d'études techniques en construction*

*Métreur-euse - deviseur-euse*

*Chef-fe de chantier*

*Chef-fe d'équipe dans la construction*

*Conducteur-trice de travaux*

*Responsable logistique (M/F/X)*

*Gestionnaire des opérations de transport et des prestations logistiques (M/F/X)*

## Annex B.3 – List of Highly Demanded Professions Arbeitsamt DG

The list below is originates from the Arbeitsamt's *Liste der Mangelberufe in der Deutschsprachigen Gemeinschaft – Gültig für 2018-2019*.<sup>42</sup> The professions marked in grey are those which are regulated and to which the General System applies. Some professions in the health, construction, industry and crafts sectors are also regulated. However, these profession fall within the scope of application of the PQD's system on automatic recognition and are therefore not considered in this study.

*Ingenieur*  
*Krankenpfleger*  
*Pflegehelfer*  
*Lehrer für Oberstufe Sekundarschule (AESS)*  
*Lehrer für Unterstufe Sekundarschule (AESI)*  
*Primarschullehrer*  
*Technischer Zeichner*  
*Techniker (Bautechniker, Metalltechniker - Bachelor)*  
*Buchhalter*  
*Sozialassistent*  
*Erzieher*  
*Informatiker*  
*Leitende Verwaltungsangestellte*  
*Sekretäre, polyvalente Büroangestellte*  
*Kostenrechner, Lohnbuchhalter*  
*Fachkräfte im Speditionsbereich*  
*LKW-Fahrer, Busfahrer*  
*Werkzeugmaschinenführer, Dreher, ...*  
*Reparaturschlosser, Mechaniker*  
*Sanitär- und Heizungsinstallateure*  
*Schweißer*  
*Sonstige Metallarbeiter (Metallbauer, Maschinenschlosser, Monteur)*  
*Elektriker / Elektroreparateure*  
*Elektromechaniker*  
*Zimmermann und Tischler*  
*Säger und Holzbearbeitungsmaschinenführer*  
*Anstreicher und Tapezierer*  
*Maurer und Fliesenleger*  
*Dachdecker*  
*Bäcker*  
*Metzger*  
*Baumaschinenführer*  
*Köche und Küchenpersonal*  
*Restaurantpersonal*  
*Reinigungsfachkräfte (professionelle)*

<sup>42</sup> Arbeitsamt der Deutschsprachigen Gemeinschaft Belgiens, 'Liste der Mangelberufe in der Deutschsprachigen Gemeinschaft – Gültig für 2018-2019', [http://www.adg.be/PortalData/46/Resources/dokumente/artikel-dokumente/Mangelberufe\\_fuer\\_2018-2019.pdf](http://www.adg.be/PortalData/46/Resources/dokumente/artikel-dokumente/Mangelberufe_fuer_2018-2019.pdf).

## Annex C – List of Highly Demanded Professions Bundesagentur

The list below originates from the Bundesagentur's publication *Fachkräfteengpassanalyse*.<sup>43</sup> In this publication, the *Bundesagentur* creates an overview of highly demanded professions per *Berufsgruppe* (professional group) and per *Berufsgattung* (professional category). The professions matching to those professional groups and categories may subsequently be defined after consulting the *Klassifikation der Berufe 2010*.<sup>44</sup> The overview below indicates all professional groups, categories, levels and professions for which a shortage exists in Germany. Some professions may be featured in multiple categories. The professions marked in grey are those which are regulated and to which the General System applies. Again, most professions are unregulated. Nevertheless, a number of professions in the construction, industry and crafts sectors are also regulated. However, as they qualify for automatic recognition they are beyond the scope of this study.

<b>Berufsgruppe</b>	<b>Betroffene Berufsgattung(en)</b>	<b>Anforderungs niveau</b>	<b>Berufe</b>
252 Fahrzeug-, Luft-, Raumfahrt- und Schiffbautechnik	252 12 Berufe in der Kraftfahrzeugtechnik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Automobilmechaniker/in</li> <li>· Fahrzeuggbauer/in</li> <li>· Karosserie- und Fahrzeugbaumechaniker/in</li> <li>· Karosseriebauer/in</li> <li>· Kraftfahrzeug-Servicetechniker/in</li> <li>· Kraftfahrzeugmechaniker/in</li> <li>· Kraftfahrzeugmechatroniker/in</li> <li>· Kraftfahrzeugservicemechaniker/in</li> <li>· LKW-Mechaniker/in</li> <li>· LKW-Schlosser/in</li> <li>· Nutzfahrzeugmechaniker/in</li> <li>· Pannendienstfahrer/in</li> <li>· Schienenfahrzeugschlosser/in</li> </ul>

<sup>43</sup> Bundesagentur für Arbeit, 'Statistik', <https://statistik.arbeitsagentur.de/>; Bundesagentur für Arbeit, Fachkräfteengpassanalyse, Juni 2018.

<sup>44</sup> Bundesagentur für Arbeit, Klassifikation der Berufe 2010 – Band 1: Systematischer und alphabetischer Teil mit Erläuterungen (Nürnberg: Bundesagentur für Arbeit, 2011).

	252 14 Berufe in der Kraftfahrzeugtechnik	4 - Experte	<ul style="list-style-type: none"> <li>· Fahrzeuggbauingenieur/in</li> <li>· Fahrzeugingenieur/in</li> <li>· Ingenieur/in – Fahrzeugtechnik</li> <li>· Ingenieur/in – Schienenfahrzeugtechnik</li> <li>· Kraftfahrzeugingenieur/in</li> <li>· Kraftfahrzeugsachverständige/r</li> </ul>
	252 22 Berufe in der Land- und Baumaschinentechnik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Baumaschinenmechaniker/in</li> <li>· Baumaschinenschlosser/in</li> <li>· Kranbauschlosser/in</li> <li>· Kranmonteur/in</li> <li>· Land- und Baumaschinenmechaniker/in</li> <li>· Landmaschinenmechaniker/in</li> <li>· Mechaniker/in – Baumaschinentechnik</li> <li>· Metallbauer/in – Landtechnik</li> <li>· Metallbauer/in – Nutzfahrzeugbau</li> </ul>
261 Mechatronik und Automatisierungs technik	261 12 Berufe in der Mechatronik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Fachkraft – Mechatronik</li> <li>· Industrietechnologe/-technologin – mechatronische Systeme</li> <li>· Mechatroniker/in</li> <li>· Technische/r Assistent/in – Mechatronik</li> </ul>
	261 22 Berufe in der Automatisierungstechnik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Assistent/in – Automatisierungstechnik</li> <li>· Elektrofachkraft – Automatisierungstechnik</li> <li>· Industrielektroniker/in – Produktionstechnik</li> <li>· Mess- und Regelelektroniker/in</li> <li>· Prozessleitelektroniker/in</li> <li>· Steuerungsbauer/in</li> </ul>
	261 23 Berufe in der Automatisierungstechnik	3 - Spezialist	<ul style="list-style-type: none"> <li>· Automatisierungstechniker/in (Elektrotechnik)</li> <li>· Maschinenbautechniker/in – Automatisierungstechnik</li> <li>· Mess- und Regeltechniker/in</li> <li>· Prozessautomatisierungstechniker/in</li> <li>· Steuerungstechniker/in</li> <li>· System- und Automatisierungstechniker/in</li> <li>· Techniker/in – Elektrotechnik (Automatisierungstechnik)</li> </ul>

262 Energietechnik	262 12 Berufe in der Bauelektrik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Bauelektriker/in</li> <li>· Baustellenelektriker/in</li> <li>· Blitzschutzmonteur/in</li> <li>· Elektriker/in</li> <li>· Elektroniker/in – Energieund Gebäudetechnik</li> <li>· Elektroniker/in – Gebäudeund Infrastruktursysteme</li> <li>· Hauselektriker/in</li> <li>· Prüffeldelektroniker/in</li> </ul>
	262 22 Berufe in der Elektromaschinentechnik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Elektromaschinenbauer/in</li> <li>· Elektromotorenschlosser/in</li> <li>· Elektroniker/in – Maschinen und Antriebstechnik</li> </ul>
	262 52 Berufe i.d. elektrischen Betriebstechnik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Anlagenelektroniker/in</li> <li>· Betriebselektroniker/in</li> <li>· Elektroniker/in – Prüffeld</li> <li>· Elektroniker/in (Handwerk)</li> <li>· Energieanlagenelektroniker/in</li> <li>· Energieelektroniker/in – Anlagentechnik</li> <li>· Energieelektroniker/in – Betriebstechnik</li> <li>· Maschinenelektriker/in</li> <li>· Produktionselektroniker/in</li> <li>· Schaltanlagenmonteur/in</li> <li>· Schiffselektriker/in</li> <li>· Starkstromelektriker/in</li> </ul>
	262 62 Berufe Leitungsinstallation,-wartung	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Elektroanlagenmonteur/in</li> <li>· Fahrleitungsmonteur/in</li> <li>· Freileitungsmonteur/in</li> <li>· Installateur/in – Elektroinstallation</li> <li>· Kabelmonteur/in</li> <li>· Montageelektriker/in</li> <li>· Netzmonteur/in</li> </ul>

263 Elektrotechnik	263 12 Berufe Informations, Telekommunikationst.	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Antennenmonteur/in</li> <li>· EDV-Servicetechniker/in</li> <li>· Elektroniker/in – Geräte und Systeme</li> <li>· Elektroniker/in – Informations- und Telekommunikationstechnik</li> <li>· Energiegeräteelektroniker/in</li> <li>· Fernmeldeelektroniker/in</li> <li>· Geräteelektroniker/in</li> <li>· Industrietechnologe/-technologin – Nachrichtentechnik</li> <li>· Informations- und Telekommunikationselektroniker/in</li> <li>· Informationselektroniker/in</li> <li>· IT-Servicetechniker/in</li> <li>· IT-System-Elektroniker/in</li> <li>· Servicetechniker/in – IT</li> <li>· Systemelektroniker/in</li> <li>· Technische/r Assistent/in – Elektronik und Datentechnik</li> <li>· Telekommunikationselektroniker/in</li> </ul>
272 Techn. Zeichnen, Konstruktion, Modellbau	272 24 Berufe i.d. Konstruktion u. im Gerätebau	4 - Experte	<ul style="list-style-type: none"> <li>· CAD/CAM-Ingenieur/in</li> <li>· CAE-Ingenieur/in</li> <li>· Konstruktionsingenieur/in</li> </ul>
321 Hochbau	321 93 Meister Hochbau	3 - Spezialist	<ul style="list-style-type: none"> <li>· Dachdeckermeister/in</li> <li>· Fachleiter/in – Dachdeckerhandwerk</li> <li>· Gerüstbau-Kolonnenführer/in</li> <li>· Gerüstbauermeister/in</li> <li>· Kolonnenführer/in – Hochbau</li> <li>· Maurer- und Betonbauermeister/in</li> <li>· Polier/in – Hochbau</li> <li>· Schornsteinbauermeister/in</li> <li>· Werkpolier/in – Hochbau</li> </ul>
322 Tiefbau	322 02 Berufe im Tiefbau (o.S.)	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Spezialtiefbauer/in</li> <li>· Tiefbaufacharbeiter/in</li> </ul>

322 22 Berufe im Straßen- und Asphaltbau	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Asphaltbauer/in</li> <li>· Schwarzstraßenbauer/in</li> <li>· Straßenbauer/in</li> <li>· Tiefbaufacharbeiter/in – Straßenbauarbeiten</li> </ul>
322 32 Berufe im Gleisbau	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Gleisbauer/in</li> <li>· Gleisbaumaschinist/in</li> <li>· Gleiswerker/in</li> <li>· Tiefbaufacharbeiter/in Gleisbauarbeiten</li> </ul>
322 42 Berufe im Brunnenbau	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Bohrgeräteführer/in (Brunnenbau)</li> <li>· Bohrmaschinist/in</li> <li>· Brunnenbauer/in</li> <li>· Kernbohrer/in</li> <li>· Tiefbaufacharbeiter/in – Brunnen- und Spezialtiefbauarbeiten</li> </ul>
322 52 Berufe im Kanal- und Tunnelbau	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Kanalbauer/in</li> <li>· Mineur/in</li> <li>· Tiefbaufacharbeiter/in – Kanalbauarbeiten</li> <li>· Tunnelbauer/in</li> </ul>
322 93 Meister Tiefbau	3 - Spezialist	<ul style="list-style-type: none"> <li>· Brunnenbauermeister/in</li> <li>· Gleisbaupolier/in</li> <li>· Industriemeister/in – Gleisbau</li> <li>· Kolonnenführer/in – Tiefbau</li> <li>· Polier/in – Tiefbau</li> <li>· Straßenbauermeister/in</li> <li>· Tiefbaumeister/in</li> <li>· Tiefbauunternehmer/in</li> <li>· Wasserbaumeister/in</li> </ul>

333 Aus-, Trockenbau, Isolierung, Zimmerei, Glaserei, Roll.	333 22 Berufe in der Zimmerei	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Ausbaufacharbeiter/in (Zimmererarbeiten)</li> <li>· Ausbauzimmerer/-zimmerin</li> <li>· Bauzimmerer/-zimmerin</li> <li>· Bühnenzimmerer/-zimmerin</li> <li>· Fertighausmonteur/in (Holz)</li> <li>· Holzbootsbauer/in</li> <li>· Montageschreiner/in</li> <li>· Schalungszimmerer/-zimmerin</li> <li>· Schiffszimmerer/-zimmerin</li> <li>· Treppenbauzimmerer/-zimmerin</li> <li>· Zimmerer/Zimmerin</li> </ul>
	333 52 Berufe in Rollladen- und Jalousiebau	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Jalousiebauer/in</li> <li>· Markisenbauer/in</li> <li>· Markisenmonteur/in</li> <li>· Rollladen- und Sonnenschutzmechatroniker/in</li> <li>· Rollladenbauer/in</li> <li>· Rollladenmonteur/in</li> </ul>
	333 93 Meister - Aus-, Trockenbau, Isolierung, Zimmerei, Glaserei, Roll.	3 - Spezialist	<ul style="list-style-type: none"> <li>· Fachbauleiter/in – Tischlerhandwerk</li> <li>· Fachleiter/in – Dach-, Wand und Abdichtungstechnik</li> <li>· Glasermeister/in</li> <li>· Industriemeister/in – Akustik- und Trockenbau</li> <li>· Industriemeister/in – Isolierung</li> <li>· Polier/in – Ausbau</li> <li>· Rollladen- und Jalousiebauermeister/in</li> <li>· Trockenbaumeister/in</li> <li>· Wärme-, Kälte- und Schallschutzisoliermeister/in</li> <li>· Zimmerermeister/in</li> </ul>

342 Klempnerei, Sanitär-, Heizungs-, Klimatechnik	342 02 Berufe in der Klempnerei (o.S.)	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Bauklempner/in</li> <li>· Blechner/in</li> <li>· Feinblechschlosser/in</li> <li>· Flaschner/in</li> <li>· Isolierklempner/in</li> <li>· Klempner/in</li> <li>· Konstruktionsmechaniker/in – Feinblechbautechnik</li> <li>· Spengler/in</li> </ul>
	342 12 Berufe Sanitär-, Heizungs-, Klimatechnik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Anlagenmechaniker/in – Sanitär-, Heizungs- und Klimatechnik</li> <li>· Gas- und Wasserinstallateur/in</li> <li>· Heizungsbauer/in</li> <li>· Heizungsmonteur/in</li> <li>· Lüftungs- und Klimaanlagenbauer/in</li> <li>· Sprinklermonteur/in</li> <li>· Zentralheizungs- und Lüftungsbauer/in</li> </ul>
	342 13 Berufe Sanitär-, Heizungs-, Klimatechnik	3 - Spezialist	<ul style="list-style-type: none"> <li>· Anlagentechniker/in – Sanitärtechnik</li> <li>· Heizungstechniker/in</li> <li>· Klimatechniker/in</li> <li>· Lüftungstechniker/in</li> <li>· Sanitärtechniker/in</li> <li>· Wärmetechniker/in</li> </ul>
	342 22 Berufe im Ofen- und Luftheizungsbau	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Backofenbauer/in</li> <li>· Industrieofenbauer/in</li> <li>· Kachelofenbauer/in</li> <li>· Kachelofensetzer/in</li> <li>· Luftheizungsbauer/in</li> <li>· Ofensetzer/in</li> </ul>

	342 32 Berufe in der Kältetechnik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Kälteanlagenbauer/in</li> <li>· Kälteanlageninstallateur/in</li> <li>· Kälteanlagenmechaniker/in</li> <li>· Kühlhauswärter/in</li> <li>· Mechatroniker/in – Kältetechnik</li> </ul>
	342 33 Berufe in der Kältetechnik	3 - Spezialist	<ul style="list-style-type: none"> <li>· Kälte-Klima-Techniker/in</li> <li>· Kälteanlagentechniker/in</li> <li>· Techniker/in – Kältetechnik</li> </ul>
	342 93 Meister - Klempnerei, Sanitär, Heizung, Klima	3 - Spezialist	<ul style="list-style-type: none"> <li>· Bauleitende/r Monteur/in</li> <li>· Betriebsmanager/in – Sanitär- und Heizungstechnik</li> <li>· Blechnermeister/in</li> <li>· Flaschnermeister/in</li> <li>· Installateur- und Heizungsbauermeister/in</li> <li>· Kälteanlagenbauermeister/in</li> <li>· Klempnermeister/in</li> <li>· Ofen- und Luftheizungsbauermeister/in</li> <li>· Spenglermeister/in</li> </ul>
343 Ver- und Entsorgung	343 02 Berufe in der Ver- und Entsorgung (o.S.)	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Anlagenmechaniker/in – Versorgungstechnik</li> <li>· Entsorger/in</li> </ul>
	343 22 Berufe im Rohrleitungsbau	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Hochdruckrohrschlosser/in</li> <li>· Rohrleitungsbauer/in</li> <li>· Rohrnetzbauer/in</li> <li>· Rohrnetzmonteur/in</li> <li>· Rohrnetzsenschlosser/in</li> <li>· Rohrvorrichter/in</li> <li>· Tiefbaufacharbeiter/in – Rohrleitungsbauarbeiten</li> </ul>

432 IT-Systemanalyse, Anwenderber, IT-Vertrieb	432 24 Berufe in der IT-Anwendungsberatung	4 - Experte	<ul style="list-style-type: none"> <li>· Anwendungsberater/in</li> <li>· Anwendungssystemberater/in</li> <li>· EDV-Berater/in</li> <li>· ERP-Systembetreuer/in (SAP, Baan u. a.)</li> <li>· IT-Berater/in (geprüft)</li> <li>· IT-Produktkoordinator/in</li> <li>· Softwareberater/in</li> </ul>
434 Softwareentwicklung, Programmierung	434 13 Berufe in der Softwareentwicklung	3 - Spezialist	<ul style="list-style-type: none"> <li>· Anwendungsentwickler/in</li> <li>· Nutzerschnittstellenentwickler/in</li> <li>· Softwarespezialist/in</li> <li>· Softwaretester/in</li> <li>· Systemprogrammierer/in</li> </ul>
	434 14 Berufe in der Softwareentwicklung	4 - Experte	<ul style="list-style-type: none"> <li>· E-Logistik-Entwickler/in</li> <li>· Informatiker/in (HS) – Softwaretechnik</li> <li>· Software-Ingenieur/in</li> <li>· Softwarearchitekt/in</li> <li>· Softwareentwickler/in</li> <li>· Softwareplaner/in</li> <li>· Systementwickler/in</li> </ul>
512 Überwachung, Wartung Verkehrsinfrastruktur	512 22 Überwachung, Wartung Eisenbahninfrastruktur	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Sicherungsposten</li> <li>· Signalmechaniker/in</li> <li>· Streckenwärter/in (Bahn)</li> </ul>
522 Fahrzeugführung im Eisenbahnverkehr	522 02 Triebfahrzeugführer/in Eisenbahnverkehr	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Lokführer/in</li> <li>· Triebfahrzeugführer/in</li> </ul>
723 Steuerberatung	723 03 Berufe in der Steuerberatung	3 - Spezialist	<ul style="list-style-type: none"> <li>· Steuerberatungsassistent/in</li> <li>· Steuerfachwirt/in</li> </ul>
811 Arzt- und Praxishilfe	811 22 Podologinnen/Podologen	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Podologe/Podologin</li> </ul>

813	Gesundheits-, Krankenpflege, Rettungsdienst, Geburtshilfe	813 02 Berufe Gesundheits-, Krankenpflege (o.S)	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Gesundheits- und Kinderkrankenpfleger/in</li> <li>· Gesundheits- und Krankenpfleger/in</li> <li>· Kinderkrankenschwester/-pfleger</li> <li>· Krankenschwester/-pfleger</li> </ul>
		813 13 Berufe in der Fachkrankenpflege	3 - Spezialist	<ul style="list-style-type: none"> <li>· Dialysefachkraft</li> <li>· Fachkrankenschwester/-pfleger</li> <li>· Fachkrankenschwester/-pfleger – Endoskopie</li> <li>· Fachkrankenschwester/-pfleger – Intensivpflege/Anästhesie</li> <li>· Fachkrankenschwester/-pfleger – klinische Geriatrie</li> <li>· Fachkrankenschwester/-pfleger – Nephrologie</li> <li>· Fachkrankenschwester/-pfleger – Onkologie</li> <li>· Fachkrankenschwester/-pfleger – Operationsdienst</li> <li>· Fachkrankenschwester/-pfleger – Palliativ- und Hospizpflege</li> <li>· Fachkrankenschwester/-pfleger – Psychiatrie</li> <li>· Fachkrankenschwester/-pfleger – Rehabilitation/Langzeitpflege</li> <li>· Palliativpflegefachkraft</li> <li>· Pflegefachkraft (Onkologie)</li> <li>· Pflegefachkraft (Palliativpflege)</li> <li>· Pflegefachkraft (Rehabilitation)</li> </ul>
		813 53 Berufe Geburtshilfe, Entbindungspflege	3 - Spezialist	<ul style="list-style-type: none"> <li>· Geburtshelfer/in</li> <li>· Hebamme/Entbindungspfleger</li> </ul>
814	Human- und Zahnmedizin	814 04 Ärzte/Ärztinnen (o. S.)	4 - Experte	<ul style="list-style-type: none"> <li>· Allgemeinarzt/-ärztin</li> <li>· Arzt/Ärztin</li> <li>· Assistenzarzt/-ärztin</li> <li>· Hausarzt/-ärztin</li> <li>· Humanmediziner/in</li> <li>· Mediziner/in</li> </ul>
		814 14 Fachärzte i.d. Kinder- u. Jugendmedizin	4 - Experte	<ul style="list-style-type: none"> <li>· Facharzt/-ärztin – Kinder- und Jugendmedizin</li> </ul>
		814 24 Fachärzte/innen in der Inneren Medizin	4 - Experte	<ul style="list-style-type: none"> <li>· Facharzt/-ärztin – innere Medizin</li> <li>· Internist/in</li> </ul>

814 34 Fachärzte/innen in der Chirurgie	4 - Experte	<ul style="list-style-type: none"> <li>· Chirurg/in</li> <li>· Gefäßchirurg/in</li> <li>· Herzchirurg/in</li> <li>· Kinderchirurg/in</li> <li>· Orthopäde/Orthopädin</li> <li>· Plastische/r Chirurg/in</li> <li>· Thoraxchirurg/in</li> <li>· Unfallchirurg/in</li> <li>· Viszeralchirurg/in</li> </ul>
814 44 Fachärzte Hautkr., Sinnes- Geschlechtsorg.	4 - Experte	<ul style="list-style-type: none"> <li>· Allergologe/Allergologin</li> <li>· Augenarzt/-ärztin</li> <li>· Dermatologe/Dermatologin</li> <li>· Gynäkologe/Gynäkologin</li> <li>· Hals-Nasen-Ohren-Arzt/-Ärztin</li> <li>· Hautarzt/-ärztin</li> <li>· Urologe/Urologin</li> </ul>
814 54 Fachärzte/-ärztinnen Anästhesiologie	4 - Experte	<ul style="list-style-type: none"> <li>· Algesiologe/Algesiologin</li> <li>· Anästhesist/in</li> <li>· Narkosearzt/-ärztin</li> <li>· Schmerztherapeut/in</li> </ul>
814 64 Fachärzte Neurol., Psychiatr., Psychother.	4 - Experte	<ul style="list-style-type: none"> <li>· Facharzt/-ärztin – psychosomatische Medizin und Psychotherapie</li> <li>· Kinder- und Jugendpsychiater/in</li> <li>· Neurologe/Neurologin</li> <li>· Psychiater/in</li> </ul>

	814 84 Ärzte/Ärztinnen (s.s.T.)	4 - Experte	<ul style="list-style-type: none"> <li>· Amtsarzt/-ärztin</li> <li>· Arbeitsmediziner/in</li> <li>· Betriebsarzt/-ärztin</li> <li>· Facharzt/-ärztin – Anatomie</li> <li>· Facharzt/-ärztin – Humangenetik</li> <li>· Facharzt/-ärztin – physikalische/rehabilitative Medizin</li> <li>· Neurochirurg/in</li> <li>· Notarzt/-ärztin</li> <li>· Physiologe/Physiologin</li> <li>· Prüfarzt/-ärztin</li> <li>· Sportmediziner/in</li> <li>· Stationsarzt/-ärztin</li> <li>· Umweltmediziner/in</li> </ul>
817 Nicht ärztliche Therapie und Heilkunde	817 13 Berufe in der Physiotherapie	3 - Spezialist	<ul style="list-style-type: none"> <li>· Bewegungstherapeut/in</li> <li>· Bobath-Therapeut/in</li> <li>· Hippotherapeut/in</li> <li>· Körpertherapeut/in</li> <li>· Lymphdrainage- und Ödemtherapeut/in</li> <li>· Motopäde/Motopädin</li> <li>· Physiotherapeut/in</li> <li>· Sportphysiotherapeut/in</li> <li>· Vojta-Therapeut/in</li> </ul>
	817 33 Berufe in der Sprachtherapie	3 - Spezialist	<ul style="list-style-type: none"> <li>· Atem-, Sprech- und Stimmlehrer/in</li> <li>· Atempädagoge/-pädagogin</li> <li>· Atemtherapeut/in</li> <li>· Logopäde/Logopädin</li> <li>· Logotherapeutische/r Berater/in</li> <li>· Sprachtherapeut/in</li> </ul>

818 Pharmazie	818 04 Apotheker, Pharmazeuten	4 - Experte	<ul style="list-style-type: none"> <li>· Apotheker/in</li> <li>· Fachapotheker/in</li> <li>· Krankenhausapotheker/in</li> <li>· Pharmazeut/in</li> </ul>
821 Altenpflege	821 02 Berufe in der Altenpflege (ohne Spezialisierung)	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Altenpflegeassistent/in</li> <li>· Altenpfleger/in</li> <li>· Seniorenbetreuer/in</li> </ul>
	821 82 Berufe in der Altenpflege (s.s.T.)	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Fachkraft – soziale Arbeit in der Altenpflege</li> <li>· Gerontopsychiatrische Fachkraft</li> <li>· Rehabilitationsfachkraft – Geriatrie</li> </ul>
	821 83 Berufe in der Altenpflege (s.s.T.)	3 - Spezialist	<ul style="list-style-type: none"> <li>· Fachaltenpfleger/in – klinische Geriatrie/Rehabilitation</li> <li>· Fachaltenpfleger/in – Onkologie</li> <li>· Fachaltenpfleger/in – Palliativ- und Hospizpflege</li> <li>· Fachaltenpfleger/in – Psychiatrie</li> <li>· Fachaltenpfleger/in – Schmerztherapie/Onkologie/Palliativmedizin</li> </ul>
823 Körperpflege	823 93 Meister Frisörgewerbe	3 - Spezialist	<ul style="list-style-type: none"> <li>· Chefmaskenbildner/in</li> <li>· Friseurmeister/in</li> <li>· Kosmetikmeister/in</li> </ul>
825 Medizin-, Orthopädie- und Rehatechnik	825 12 Berufe in der Orthopädie-, Rehatechnik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Bandagist/in</li> <li>· Orthopädiemechaniker/in</li> <li>· Prothesenhersteller/in</li> </ul>
	825 32 Berufe in der Hörgeräteakustik	2 - Fachkraft	<ul style="list-style-type: none"> <li>· Hörgeräteakustiker/in</li> </ul>
	825 13 Berufe in der Orthopädie-, Rehatechnik	3 - Spezialist	<ul style="list-style-type: none"> <li>· Orthopädietechniker/in</li> <li>· Rehabilitationsmitteltechniker/in</li> </ul>
	825 93 Meister Orthopädietechnik und Hörgeräteakustik*	3 - Spezialist	<ul style="list-style-type: none"> <li>· Augenoptikermeister/in</li> <li>· Hörgeräteakustikermeister/in</li> <li>· Orthopädietechnikermeister/in</li> <li>· Zahntechnikermeister/in</li> </ul>
845 Fahrunterricht	845 13 Fahrlehrer/innen	3 - Spezialist	<ul style="list-style-type: none"> <li>· Fahrlehrer/in</li> </ul>



Gemeente Maastricht



Maastricht University

EUREGIO



NEERLANDSE EXPERTISE EN INNOVATIECENTRUM  
MAATSCHAPPELIJKE EFFECTEN DEMOGRAFISCHE KRIMP



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