

Project no.	FP6-028987
Project acronym	<i>EurOccupations</i>
Project title	Developing a detailed 7-country occupations database for comparative socio-economic research in the European Union
Instrument:	STREP
Thematic Priority	PRIORITY 7, Research Area 3.2.2.

Cluster report

Construction and cars

Third Reporting Period – D18b

Project coordinator name:	Erasmus University Rotterdam
Start date of the project:	from 01.05.2006 to 30.04.09 (36 months)
Period covered:	from 01.05.08 to 30.04.09
Report Preparation Date:	30.04.2009
Author of this report:	Esther de Ruijter, Judith van de Kerkhof (AO Consult)

1. Introduction

1.1 Introduction of the EurOccupations project

How do occupations compare across countries? How can problems of incomparability of occupations be tackled? To answer these questions, 10 European universities and research institutes have joined their efforts to develop a European occupations database.

The EU funded project 'EurOccupations' aims to build a publicly available occupations database with approximately 1,600 most frequent occupations in 8 large EU member states (United Kingdom, Germany, France, Spain, Poland, Belgium, the Netherlands and Italy). The occupations cover the whole range of industries: varying from care & welfare to technology & manufacturing, from service occupations to agriculture & fishing, etc.

For all 1,600 occupations, the EurOccupations database includes occupational titles, ISCO-codes and educational levels. In addition, the database contains information about distribution of gender, education and age groups in each country for aggregate groups of occupations.

Expert research

For a selection of 150 key occupations¹, the EurOccupations database additionally includes information on skill levels, occupational content, occupational requirements and relevant social stratification measures. The information for these occupational dimensions was gathered through an expert research, in which occupational experts were asked to judge occupations of their expertise on these dimensions by means of an Internet enquiry.

Expert definition:

Experts are expected to have knowledge about occupations or groups of occupations within the countries involved in EurOccupations.

Experts are: representatives of employers' or employees' organisations, professional organisations, interest groups, vocational training bodies or knowledge centres, supervisors, researchers in the field of occupations (either from universities or from statistical offices), informants from a wide variety of branches of industry, vocational advisors, HRD professionals etc.

¹ Information was gathered for 10 additional key occupations as well. However, the EurOccupations team actively recruited experts for 150 'core' key occupations (not for the 10 additional occupations). As a consequence, information about these 10 additional occupations may be lacking.

In addition: occupational workers enquiry

Additionally, occupational workers were also asked to complete an Internet enquiry for these 150 key occupations. This so called 'occupational worker enquiry' included questions that can be answered by practitioners and focused on the actual education levels of occupational workers (and how these relate to occupational requirements).

Clusters of occupations

In order to structure and streamline the development of the EurOccupations database, the occupation database is organised along the lines of eight clusters of occupations. The clusters of occupations are divided as follows:

Table 1 Overview of the division of 8 clusters of occupations

Cluster title
1. Care & welfare
2. Construction & cars
3. Education, research & personnel
4. Information, communication, finance & legal
5. Manufacturing: food, metal, oil, gas & mining
6. Clerks, staff, management & army/police
7. Trade & agriculture
8. Transport, logistics, travel & cleaning/garbage

1.2 Introduction of the cluster 'construction & cars'

The EurOccupations database contains 221 occupations in the cluster 'construction & cars'. These occupations vary from 'air-conditioning mechanic or installer' to 'civil engineer' and from 'demolition worker' to 'marble setter'. The cluster can be divided into two areas of work:

- construction, fittings (total of 129 occupations);
- cars, mechanics, technicians, engineers (total of 92 occupations).

For a selection of 23 key occupations from the cluster 'construction & cars'², detailed information is gathered on skill levels, occupational content etc. The overview below presents the key occupations for each area of work in the cluster.

² Information was gathered for the key occupation 'mechanical engineering technician' as well. However, the EurOccupations team did not actively recruit experts for this key occupation. As a consequence, information about this additional occupation in the cluster 'construction & cars' may be lacking.

Cluster 'Construction & cars'	
Area of work	Key Occupations
Construction, fittings	<ul style="list-style-type: none"> • Building architect • Building construction helper • Carpenter • Concrete steel worker • Construction bricklayer • Cooling, freezing or air-conditioning equipment erector • Cooling, freezing or air-conditioning equipment mechanic • House painter • Interior decorator • Plumber • Road paviour • Roofer • Roofer bituminous operator • Tile setter, tile layer
Cars, mechanics, technicians, engineers	<ul style="list-style-type: none"> • Building structure engineer • Car mechanic • Civil engineering technician • Climatologist / meteorologist • Electrical engineer • Electrical mechanic or fitter • First line supervisor mechanics, installers, or repairers • Garage supervisor • Master technician cars

2. Data collection

2.1 The EurOccupations data collection

As was mentioned earlier, an expert research was conducted in order to gather the relevant occupational information for our 150 key occupations³. In this expert research, experts were asked to judge these key occupations on the relevant dimensions by means of an Internet enquiry.

Expert definition:

Experts are expected to have knowledge about occupations or groups of occupations within the countries involved in EurOccupations.

Experts are: representatives of employers' or employees' organisations, professional organisations, interest groups, vocational training bodies or knowledge centres, supervisors, researchers in the field of occupations (either from universities or from statistical offices), informants from a wide variety of branches of industry, vocational advisors, HRD professionals etc.

Expert Internet enquiry

Experts were asked to complete two types of Internet enquiries:

- **The occupation expert enquiry for 150 key occupations**

In this enquiry, questions were asked about skill levels, occupational content and relevant social stratification measures. The occupation questionnaire is included in Appendix B.

For each key occupation, unique task descriptions (10-12 tasks) were included in the questionnaire. These task descriptions have been developed by means of international desk research, following standardised EurOccupations procedures (see procedures expert data collection available on: <http://www.euroccupations.org/main/researchlab/deliverablesyr1>). Experts were asked to judge these tasks on frequency and importance. We aimed to have at least 2 completed expert questionnaires for each key occupation in each country. For some key occupations, only one or even no expert questionnaires were completed. For these key occupations, information was collected using different sources (see occupational worker enquiry and partner questionnaire, described below).

- **The education expert enquiry for 1,432 occupations⁴**

In this enquiry, experts were asked to provide the required educational level for a number of occupations in the area(s) of work of their expertise (random selection of occupations from the area of work). The education expert questionnaire is included in Appendix C.

³ Information was gathered for 10 additional key occupations as well. However, the EurOccupations team actively recruited experts for 150 'core' key occupations (not for the 10 additional occupations). As a consequence, information about these 10 additional occupations may be lacking.

⁴ The education expert enquiry was based on the draft version of the extended list of occupations (containing 1,432 occupations). The final extended list of occupations contains 1,600 occupations.

2.1.1 Expert recruitment activities

In each of the countries, EurOccupations partners recruited experts by undertaking various actions (following the EurOccupations procedures for expert recruitment). The main expert recruitment activities included:

- Asking (inter)national **expert organisations** (e.g., employer organisations, knowledge centres, education institutes) to assist in recruiting experts in their networks, e.g. by contacting relevant experts, placing banners on their website, publish articles in their journals (e.g., using the text from the EurOccupations flyer). Additionally, representatives of expert organisations were also asked to complete the web enquiry themselves.
- Asking **individual experts** to join the EurOccupations expert network and complete the questionnaires (in person, by phone, e-mail, mailings, etc.).
- Sending **letters to relevant (expert) organisations** to ask for their cooperation.
- Subscribing experts to the **EurOccupations newsletter**.
- Publishing **articles** in relevant journals (e.g., using the text from the EurOccupations flyer).
- Attending conferences, workshops, seminars etc. to distribute information about EurOccupations (presentations, distributing flyers etc.).
- Publishing **banners** on relevant websites.

The most efficient way to approach experts and expert organisations differs between the participating countries. Therefore, the focus of expert recruitment activities differed between the countries.

Expert recruitment France (Céreq)

Céreq (the French centre on Education, training and employment) is placed under the aegis of both the French ministry of education and the French ministry of employment. This allowed it to organise institutional partnership in order to involve experts:

- In the Ministry of Education, during some sectoral meetings called "Commissions professionnelles consultatives", associating social partners and experts in vocational fields of all economical sectors,
- In the Ministry of Employment, also during some sectoral meetings associating social partners and experts, and when associating the specialists having taken part to the last French dictionary of occupations, called the ROME (Répertoire Opérationnel des emplois et des métiers).

Then, it has associated both representatives from its statistical databases system (INSEE, Institut national de la statistique et des études économiques) and from its labor market analysis (DARES, Délégation générale à l'emploi et à la formation professionnelle), in the EurOccupations Steering Committee. Thus, many colleagues have accepted direct or phone interviews (for researchers located all around France) that were later keyboarded or captured in the computer.

Céreq also possesses interesting databases, such as a unique dictionary of industry representatives associated to the French MEDEF (Mouvement des entreprises de France), the biggest

employer organisation. It has used all its details for all economic sectors, from A to Z (aeronautics to civil engineering). They were usually reached first by telephone, then by e-mail, and it was all the more successful because many professional contacts were already well known from Céreq, and they had already heard about the Céreq role in France.

Céreq has also organised direct communication during some meetings (at the Ministry of Education and during internal meetings of its own experts), as well as two institutional communication through its publications such as the monthly "Céreq Bref", issued in 6.000 copies, and then published online⁵. It has also associated all its sectoral experts employed as "Chargés d'études" (researchers), coming from sociological or economical backgrounds but specialised in the various economical sectors and French occupations. Then, some more experts could be found during the EurOccupations international meeting organised in Marseilles, at Céreq's city location, that represented a great opportunity and was very well organised by the Dutch coordinator (especially the Erasmus University of Rotterdam and AO Consult).

The answering rate of experts is a witness of the success of the operation: 345, properly balanced between the 164 benchmarked occupations.

Expert recruitment United Kingdom (IER, University of Warwick)

Intensive efforts in the early stage of recruitment to attract experts in relevant organisations directly by email (sent from Professor Peter Elias' email address) proved largely ineffective, probably because of the high volume of email traffic that such recipients receive and the tendency of busy individuals to delete without reading any emails from individuals that they do not recognise. The decision was therefore made to adopt a more personal approach:

- in line with previous practice, relevant websites were explored in order to identify, where possible, appropriate individuals to contact;
- a telephone call to the identified experts was then made to seek their cooperation;
- a follow-up email was sent giving standard information, appropriately amended for individual circumstances and containing direct links to the online questionnaire for specific occupations.

This strategy was more effective, although response numbers remained variable.

Organisations targeted

- A key focus for recruitment was the Sector Skills Council (SSC) relevant to each of the occupations. In some cases IER colleagues were able to recommend individuals in those Councils. Some SSCs responded directly, or recommended other useful contacts able to respond for a particular occupation in the sector.

⁵ - Translation of the EurOccupations flyer and dissemination with the project coasters.
- 2 Céreq Bref articles (mentioned in the previous dissemination reports);
- 1 Céreq electronic letter, September 2009: some issues about the EurOccupations meeting that hold in Marseilles in April 2009.

- For health-related occupations approaches were made to relevant sections within the UK National Health Service.
- Where appropriate, contact was with professional or trade associations.
- Professional contacts of the staff of the Institute for Employment Research were exploited, along with partner organisations in other projects conducted by the IER.
- The University of Warwick proved a useful source of experts across a range of the benchmarked occupations. Departments approached included: the Finance Office, Personnel Office and other central administrative functions; Sports Centre; Department of Psychology; Warwick Conferences; Estates Office.
- Contact was made with some lecturing staff in Colleges of Further Education involved in sectoral training programmes.

Other recruitment measures

- Dissemination of information about the project, via distribution of flyers, the EurOccupations banner and some text on the IER website, and a workshop organised in IER, were all aimed at promoting participation in the expert enquiry.
- Where continued difficulty was encountered in achieving expert recruitment via organisations as described in the previous sections, personal contacts with individuals working in an occupation were used in a few instances.
- For around 15 occupations where potential respondents were unable or reluctant to complete the questionnaire online, pre-completed questionnaires were sent to them for comment and amendment, and were then submitted from IER.
- Paper copies of the questionnaire were offered in one or two cases, but this approach did not work.
- Finally, the IER EurOccupations team completed partner questionnaires based on desk research and validated, where possible, by occupational experts.

Expert recruitment Germany (AWWW GmbH)

The main expert recruitment activities in Germany included:

- Setting up particular EurOccupations **web-sites** both in German and in English on the two main web-sites of the AWWW GmbH (awww.de / awww.eu).
- Placing information on EurOccupations and links to the online questionnaire on six thematic web-sites maintained by the AWWW GmbH.
- Asking **German expert organisations** (e.g., trade unions, employer organisations, chambers of commerce, ministries, research institutes, knowledge centres, education institutes) to assist in recruiting experts in their networks, e.g. by contacting relevant experts, placing banners on their website. Additionally, representatives of expert organisations were also asked to complete the web enquiry themselves.
- Asking **individual experts** to join the EurOccupations expert network and complete the questionnaires (in person, by phone, e-mail, mailings, etc.).

- Sending **letters to relevant (expert) organisations** to ask for their cooperation.
- Sending **e-mails to relevant (expert) organisations** to ask for their cooperation. The e-mails included the relevant direct links to the according occupations covered by the organisation, links to the AWWW GmbH web-sites, and the EurOccupations flyer as PDF attachment.
- Attending conferences, workshops, seminars etc. to distribute information about EurOccupations (presentations, distributing flyers etc.).

Expert recruitment The Netherlands (AO Consult)

In order to recruit sufficient experts to complete our expert web survey, we undertook different types of actions:

- We approached expert organisations (e.g., knowledge centres, branch organisations, large companies, vocational advise agencies). We found these organisations within our network of organisations or through the Internet. We contacted these organisations by telephone and organised a personal meeting with a representative to discuss how they could assist us in recruiting experts in their networks. Usually, these organisations asked employees, members or external contacts to complete EurOccupations questionnaires (occupation questionnaire and education questionnaire). In addition, some organisations placed a banner on their website including a link to our questionnaire (depending on the type of website visitors) and/or published articles in their newsletter or journal. In some cases, organisations also placed banners on their website linking to the occupational worker survey. If the response stayed behind, we contacted organisations again to ask whether they could undertake additional action in order to obtain a sufficient number of completed questionnaires. In total, we organised personal meetings with 47 representatives of expert organisations and additionally had telephone contact with 66 representatives.
- We asked individual experts to complete the questionnaires by telephone, e-mail or in person. For instance, we asked network contacts, colleagues, acquaintances, friends or family who are experts on specific occupations to complete questionnaires. All employees of Arbeid Opleidingen Consult mobilised their network in order to recruit as many experts as possible.
- We sent a large mailing to 430 expert organisations in November 2007, including a letter asking them to participate in our data collection and a number of flyers and business cards.
- We sent a large mailing to 68 occupation advisors in February 2008, including a letter asking them to participate in our data collection and a number of flyers and business cards.
- We presented the EurOccupations project at 9 conferences and (expert) meetings, asking participants to complete questionnaires about the occupations of their expertise.
- We sent a press release to 71 specialist journals.
- We placed EurOccupations-banners on our website (www.aiconsult.nl).
- Paper copies of the questionnaire were offered to experts upon request.
- Finally, partner questionnaires were completed based on desk research and validated, where possible, by occupational experts.

Expert recruitment Spain (CIREM)

- Introduction of information and invitation to participate (with a banner in order to facilitate it) in the web of CIREM Foundation. And also in the review "Herramientas", of the Foundation.
- Two great mailings (of about 500 e-mails in April and 200 in October 2008, and others little).
- Relations with the National Institute of Qualifications, in order to invite its expert teams to participate. The contacts included several meetings and the delivery of reports and flyers.
- Contacts and invitations with occasion of a National Conference on the occupations of the cluster on Education (in Madrid, April 2008), and the Marseille Conference (May 2008).
- Information and invitation to about 120 experts: directly, by telephone and by e-mail. Since November 2008 we have even helped about 15 experts in wide occupations fields to record the answers.

Expert recruitment Belgium (HIVA, Katholieke Universiteit Leuven)

For Belgium, complementary to the general recruitment strategy, following recruitment actions were taken.

- Professional organizations were contacted, and asked if they had some sort of communication to their members. Were they had one, we tried to have information on Eurooccupations included. E.g.: the Association of engineers publish a magazine, and included a small article and a call for experts. The meteorologists put information and a call for experts on their website.
- Intermediate organizations on the labor market were contacted, mainly employment agencies. For example, the Flemish government employment agency (VDAB) have a special research cell on occupational and competency profiles (VDAB – COBRA). This team agreed to input their knowledge in our project, and also helped us finding other people at VDAB with a broad knowledge on certain occupations.
- As a part of the Flemish social and economic council (SERV), the Flanders Technology Foundation (STV) has a team of people working around occupational and competency profiles. SERV agreed to input their knowledge into our project as well, by filling out questionnaires on over 40 occupations.
- Contact was established with the National Statistics office, who were in a review phase of the NOC. A mutual trade of knowledge and ideas has been established since then.
- We presented the project to the point of support concerning Work and Social economy, who supply end-users with information on labor market topics (in a broad sense) and have done important work on the harmonization of socio-economic administrative data, including occupation.
- Trade union involvement came about through the reactions of numerous trade unionists who reacted to the first calls for experts in the project, and direct contact with the information departments of the major trade unions.

- We attended to job-information fairs on a regular basis, to get in contact with people promoting or informing about certain occupations.
- We screened which international professional organizations were based in Brussels, and visited some of them who reacted to our mails on the project. This resulted, a.o. in the cooperation of the European Accountants Federation.
- We had topics on occupational harmonization put on the topic list for the master dissertations at the University⁶.

Expert recruitment Poland (Poznan University of Economics)

The main expert recruitment activities in Poland included:

- preparing the contact list included 717 organisations,
- sending e-mails to the expert organisations from the mailing list (January 2008), asking them to participate in data collection,
- phones and e-mails to the employees of Labour Ministry and National Statistic Office, who were involved in preparation of actual Polish occupational classification,
- phones, e-mails and meetings with members of Polish Human Resources Association (PSZK) to promote the idea of EurOccupation project among employees of HR departments and consulting company owners,
- contacts with employer organisations (Business Centre Club – BCC) and trade unions representatives (NSZZ Solidarnosc), asking them to participate in the project,
- inviting University employees, through the mailing list, to get interested in the project,
- asking individual experts (using network of personal contacts) to complete the questionnaires (by telephone, in person or e-mailing them direct link to specific expert questionnaire),
- EurOccupation presentations during Polish Human Resources Association (PSZK) meetings and seminars at the Poznan University of Economics,
- flyers dissemination at the trade union meetings and at the different conferences,
- banners and links at the web pages of expert organisations and at the professional portals,
- interview in regional Poznan TV,
- cooperation with HR Students Association at the Poznan University of Economics,
- looking for the additional funds to support the EurOccupation project, that enable to hire the pollsters - after the bureaucratic procedure we got the money from Polish government. In November 2008 we hired the pollsters to gather the expert questionnaires (paper version). Pollsters hired in Poznan, contacted individual experts and organizations in Poland, conducted the interviews (during the interview questionnaires were completed) and transferred the answers to the questionnaires at the web. This method enabled us to gather more than 300 questionnaires.

⁶ However, no student picked up the topic (so far).

We found that the most successful method of expert recruiting were: contacts with individual experts by sending them links to the selected questionnaires and cooperation with pollsters, who reached the experts asking them to fill in the paper questionnaires.

2.1.2 Additional data collection

Occupational worker enquiry

Additionally, occupational workers were also consulted in order to gather additional occupation information and to obtain insight in differences between actual and required educational levels. The occupational worker questionnaire is included in Appendix D. The occupational workers were recruited by means of weblinks on the WageIndicator websites (see www.WageIndicator.org) and additional recruitment activities by the EurOccupations partners.

Partner questionnaire

For occupations for which it was extremely difficult to recruit experts to complete occupation questionnaires, our national EurOccupations partners completed a partner questionnaire (see Appendix E). They completed this questionnaire based on desk research. If possible, experts were asked to validate the answers.

2.2 Response numbers for the cluster 'construction & cars'

Table 2.1 reports the responses of the expert Internet enquiry for the cluster 'construction & cars'. Table 2.2 gives an overview of the completed partner questionnaire. Finally, table 2.3 reports the responses for the occupation worker enquiry.

Table 2.1 Response numbers of the EurOccupations expert Internet enquiry for key occupations in the cluster 'construction & cars' in the 8 participating countries

Occupation	BE	SP	FR	GE	IT	NL	PO	UK	Total
Building architect	1	3	2	2	1	3	3	1	16
Building construction helper		3	2		1	2	3	1	12
Building structure engineer		3	1	3	1	2	5	1	16
Car mechanic	4	3	4	2	1	4	10	5	33
Carpenter	1	2	3	3	1	3	4	1	18
Civil engineering technician		4	2	4	1	1	3	1	16
Climatologist / metereologist	3	2	2	3	1	4	3		18

Concrete steel worker	1	3	2	2		3	2	1	14
Construction bricklayer	1	4	5	3		6	3	1	23
Electrical engineer		2	3	2		92	5		104
Electrical mechanic or fitter	2	2	1	4	1	4	4		18
First line supervisor mechanics, installers, or repairers	1	2	1	2	2	3	5	1	17
Garage supervisor		2	1	1	1	5	3		13
House painter	1	3	2	2		8	3		19
Interior decorator		3	2	1		2	3		11
Master technician cars	1	3	2	1		3	3	1	14
Plumber	1	3	2	6		3	2		17
Refrigeration or air-conditioning equipment erector	1	4	2	2	1	2	3	2	17
Refrigeration or air-conditioning equipment mechanic	1	4	2	2		1	2	1	13
Road paviour		3	2	2		13	4		24
Roofer	1	3	3	2		5	3		17
Roofer bituminous operator	1	3	2	2		2	2	1	13
Tile setter, tile layer	1	2	2	4		3	2		14
Mechanical engineering technician		1			1	1	3		6
Total	22	67	50	55	13	175	83	18	485

Table 2.2 Response numbers of the EurOccupations partner questionnaire for key occupations in the cluster 'construction & cars' in the participating countries for which data are available

Occupation	NL	UK	Total
Building architect	1	1	2
Building construction helper	1	1	2
Building structure engineer	1	1	2
Car mechanic	1	1	2
Carpenter	1	1	2
Civil engineering technician	1	1	2

Climatologist / metereologist	1	1	2
Concrete steel worker	1	1	2
Construction bricklayer	1	1	2
Electrical engineer	1	1	2
Electrical mechanic or fitter	1	1	2
First line supervisor mechanics, installers, or repairers	1	1	2
Garage supervisor	1	1	2
House painter	1	1	2
Interior decorator	1	1	2
Master technician cars		1	1
Mechanical engineering technician	1		1
Plumber	1	1	2
Refrigeration or air-conditioning equipment erector		1	1
Refrigeration or air-conditioning equipment mechanic		1	1
Road paviour, jack hammer operator	1	2	3
Roofer		1	1
Roofer bituminous operator		1	1
Tile setter, tile layer	1	1	2
Total	19	24	43

Table 2.3 Response numbers of the EurOccupations occupational worker enquiry for key occupations in the cluster 'construction & cars' in the 8 participating countries

Occupation	BE	SP	FR	GE	IT	NL	PO	UK	Total
Building architect	4	3	1	2		3	1	3	17
Building construction helper	2	1			1	5		1	10
Building structure engineer				2		2	3		7
Car mechanic	1	5				2			8
Carpenter		4				4			8
Civil engineering technician		2					1	1	4
Climatologist / metereologist	3					1			4
Concrete steel worker					1		10		11
Construction bricklayer		1				3			4
Electrical engineer	2	5				19	2	4	32

Electrical mechanic or fitter	1	3		2		11	3	5	25
First line supervisor mechanics, installers, or repairers		1				1			2
Garage supervisor	2	3	1			1			7
House painter				1		2	1		4
Interior decorator		3				1			4
Mechanical engineering technician						2		1	3
Plumber	1	1				4	1	1	8
Refrigeration or air- conditioning equipment erector		3			1		1	1	6
Refrigeration or air- conditioning equipment mechanic		4							4
Road paviour	1	1				13			15
Rofer							2	1	3
Rofer bituminous operator						2			2
Tile setter, tile layer							2		2
Total	17	40	2	7	3	76	27	18	190

3. Analyses EurOccupations data 'construction & cars'

This chapter reports the main findings of the expert research (including partner questionnaires) for the key occupations in the cluster 'construction & cars'. Each paragraph presents a summary of the findings. The following occupation characteristics are presented in the summary in each paragraph:

- Countries for which expert and/or partner data are available;
- The EurOccupations task descriptions: frequency and importance in the different countries (modus: categories reported are the most frequent chosen categories. In case two categories are chosen by the same number of experts, this is indicated – e.g. daily/weekly);
- Suggested changes to the task list;
- Required educational entry level (ISCED-classification) in the different countries;
- Additional formal or legal requirements in the different countries;
- Competencies of major importance in the different countries (if a majority of experts indicates that a competency is of major importance for the occupation);
- Expected trends in size of occupations in the different countries (modus: categories reported are the most frequent chosen categories).

Additional information about key occupations is available from part 2 of the expert occupation questionnaire, which are reported in Appendix A on an aggregate level (see Appendix B for the expert occupation questionnaire). For the tables presenting the frequencies of the different occupation characteristics from the expert research, we refer to the EurOccupations website (<http://www.euroccupations.org/main/researchlab/deliverables>).

3.1 Occupation Garage supervisor

Data are available for the following countries:

- UK
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks garage supervisor: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the garage supervisor in the different countries are reported below:

1. Confer with customers to obtain descriptions of vehicle problems and to discuss work to be performed.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands, Poland
 - Of some importance: France
2. Estimate costs and time required for repair or maintenance of the vehicle.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Poland
 - Of major/some importance: Netherlands
 - Of some importance: France
3. Plan, organise and co-ordinate the day-to-day running of the garage, e.g. by writing work orders and by arranging for garage staff to perform necessary maintenance and repair work on vehicles.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands, Poland
 - Of some importance: France
4. Repair, maintain and service vehicles, e.g. by repairing mechanical and electronic components.
 - Frequency:
 - Daily: UK, Spain, France, Germany
 - Weekly: Netherlands
 - Never: Poland
 - Importance:
 - Of major importance: UK, Spain, Germany
 - Of some importance: France
 - Not at all important: Netherlands
5. Ensure that necessary spare parts, materials and equipment are available or obtainable at short notice.
 - Frequency:
 - Daily: UK, France, Germany, Poland
 - Daily/weekly: Spain
 - Weekly: Netherlands
 - Importance:
 - Of major importance: UK, Germany, Netherlands, Poland
 - Of major/some importance: Spain

- Of some importance: France
6. Check the activities in the garage, inspect completed work for compliance with safety and other statutory regulations, and make sure defects are repaired or adjusted.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands, Poland
 - Of some importance: France
 7. Maintain records of repair and service work, make reports to detect recurrent faults.
 - Frequency:
 - Daily: UK, France, Germany, Netherlands, Poland
 - Daily/weekly: Spain
 - Importance:
 - Of major importance: UK, Germany, Poland
 - Of major/some importance: Spain, Netherlands
 - Of some importance: France
 8. Make sure the vehicle is returned to the owner in a clean and decent state.
 - Frequency:
 - Daily: UK, Spain, France, Poland
 - Never: Netherlands
 - Importance:
 - Of major importance: UK, Germany, Netherlands, Poland
 - Of some importance: Spain, France
 9. Provide information for staff about latest developments, technical specifications of new cars, garage merchandise.
 - Frequency:
 - Daily: France, Germany, Poland
 - Daily/monthly: Spain
 - Monthly: UK, Netherlands
 - Importance:
 - Of major importance: UK, Germany, Poland
 - Of major/some importance: Spain, Netherlands
 - Of some importance: France

The tasks of the garage supervisor are fairly similar across the 6 countries for which information is available (UK, Spain, France, Germany, Netherlands, Poland). There are some differences with respect to the following tasks:

- Repair, maintain and service vehicles, e.g. by repairing mechanical and electronic components:

The frequency and importance of this task differs between the countries: this task occurs daily and is of major or some importance in the UK, Spain, France and Germany, while it occurs weekly (and is not at all important) in the Netherlands and never in Poland.

- Make sure the vehicle is returned to the owner in a clean and decent state:
This task occurs daily in the UK, Spain, France and Poland, while it never is a task of the garage supervisor in the Netherlands. Interesting to note is that it is of major importance in the Netherlands, probably because the garage supervisor is responsible for the state of the vehicle, but he does not perform the work to bring the vehicle in a clean and decent state.
- Provide information for staff about latest developments, technical specifications of new cars, garage merchandise:
The frequency and importance of this task differs between the countries: it is a daily task in France, Germany and Poland, while it is a monthly task in the UK and the Netherlands. The importance of this task also varies between the countries from some to major importance.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the garage supervisor differs between the countries:

- ISCED 1: UK
- ISCED 3: Germany, France, Netherlands

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Netherlands (established/laid down in branch or industry), Poland (established/laid down in branch or industry)
- Certification (training / course): Netherlands (established/laid down in branch or industry), Poland (established/laid down in branch or industry)
- Working according to a professional code or protocol: Poland
- Other formal or legal requirements: UK, Netherlands (established/laid down in collective labour agreement)

Competencies

The following competencies are of major importance for the garage supervisor in the following countries (only major importance reported):

- Initiating action: UK, Germany, Netherlands, Poland
- Instructing co-workers: UK, Germany, Netherlands, Poland

- Supervising: UK, Germany, Netherlands, Poland
- Co-operating with colleagues: UK, Germany, Netherlands, Poland
- Communicating: UK, Germany, Netherlands, Poland
- Relating and networking: UK, Poland
- Negotiating: UK, Germany, Poland
- Reporting: Poland
- Applying know-how, professional expertise: UK, Germany, Netherlands, Poland
- Problem solving: UK, Germany, Netherlands, Poland
- Developing new procedures and working methods: Poland
- Forming strategies: Poland
- Planning and organising: UK, Spain, Germany, Netherlands, Poland
- Following instructions and procedures: UK, Netherlands, Poland
- Dealing with contingencies: Poland
- Coping with stressful situations: UK, Germany, Poland
- Commercial thinking: UK, Germany, Poland

An interesting result is that in Poland, several competencies are very important that are not important in other countries, namely: reporting, forming strategies and dealing with contingencies.

Trends in size of occupations

Expected trends in the size of the occupation garage supervisor differ between the countries:

- Declining occupation size: Netherlands
- Stable/increasing occupation size: Spain, Poland
- Stable occupation size: UK, France, Germany

3.2 Occupation Electrical mechanic or fitter

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks electrical mechanic or fitter: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the electrical mechanic or fitter in the different countries are reported below:

1. Assemble and install electrical wiring, equipment, appliances, apparatus, fixtures, etc., using hand tools and power tools.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Netherlands, Poland
 - Weekly: Germany
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
2. Perform scheduled preventative maintenance tasks, such as checking, cleaning and repairing equipment, to detect and prevent problems.
 - Frequency:
 - Daily: Netherlands, Poland
 - Daily/weekly: Spain
 - Weekly: UK, Germany
 - Monthly/never: Belgium
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
3. Diagnose malfunctioning systems, apparatus, components, etc., using test and measuring equipment and hand tools to locate the cause of a breakdown.
 - Frequency:
 - Daily: France, Germany, Netherlands, Poland
 - Daily/weekly: Belgium, Spain
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
4. Repair and adjust equipment, machines, defective components etc.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Poland
 - Weekly: Netherlands
 - Weekly/monthly: Belgium
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
 - Of major/some importance: Belgium
5. Connect wires to circuit breakers, transformers, or other components.
 - Frequency:
 - Daily: UK, Belgium, France, Netherlands, Poland
 - Daily/weekly: Spain

- Monthly: Germany
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain
- 6. Inspect electrical systems, equipment, and components to identify hazards, defects, and the need for adjustment or repair, and to ensure compliance with codes.
 - Frequency:
 - Daily: Spain, France, Poland
 - Weekly: UK, Germany, Netherlands
 - Never/daily: Belgium
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 7. Test electrical systems and continuity of circuits in electrical wiring, equipment, fixtures, etc., using testing devices such as ohmmeters, voltmeters, and oscilloscopes, to ensure compatibility and safety of system.
 - Frequency:
 - Daily: Belgium, Spain, France, Netherlands, Poland
 - Daily/weekly: Germany
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain
- 8. Plan layout and installation of electrical wiring, equipment, fixtures, etc., based on job specifications and local codes.
 - Frequency:
 - Daily/weekly: Spain
 - Weekly: UK, Netherlands, Poland
 - Monthly: Belgium, Germany
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Poland
 - Of major/some importance: Spain, Netherlands
- 9. Prepare sketches or follow blueprints to determine the location of wiring and equipment and to ensure conformance to building and safety codes.
 - Frequency:
 - Daily: Belgium, Netherlands
 - Daily/weekly: Spain
 - Weekly: UK, Poland
 - Monthly: Germany

- Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
10. Report and advise relevant persons (e.g. management) on whether continued operation of equipment could be hazardous.
- Frequency:
 - Weekly: UK, Spain, Netherlands, Poland
 - Monthly: Germany
 - Weekly/never: Belgium
 - Importance:
 - Of major importance: UK, Belgium, France, Poland
 - Of major/some importance: Germany
 - Of some importance: Spain, Netherlands

The tasks of the electrical mechanic or fitter are fairly similar across the 7 countries for which information is available (UK, Belgium, Spain, France, Germany, Netherlands, Poland). Most tasks are of major importance in the different countries, and are performed on a daily or weekly basis. The Belgian experts, however, do not seem to agree about the frequency of some tasks: e.g., one expert indicates that the task 'Perform scheduled preventative maintenance tasks' occurs monthly, while the other indicates this task never occurs. With respect to the task 'Repair and adjust equipment, machines etc.', one expert indicates this task occurs weekly, while the other indicates it occurs monthly.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list.

Required educational entry level

The required educational level of the electrical mechanic or fitter differs between the countries:

- ISCED 1: UK
- ISCED 2/3: Germany
- ISCED 3: Belgium, Netherlands

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Belgium (established/laid down in branch or industry), Netherlands (established/laid down in branch or industry/law or legal requirement), Poland
- Certification (training / course): Belgium, Spain, Germany, Netherlands (established/laid down by federal government), Poland (established/laid down in law or legal requirement)

- Working according to a professional code or protocol: Belgium (established/laid down in branch or industry), Germany (established/laid down in law or legal requirement), Poland
- Other formal or legal requirements: UK, France (established/laid down in law or legal requirement), Germany (established/laid down in law or legal requirement)

Competencies

The following competencies are of major importance for the electrical mechanic or fitter in the following countries (only major importance reported):

- Initiating action: Spain, Germany, Poland
- Instructing co-workers: Germany, Poland
- Supervising: Poland
- Co-operating with colleagues: Belgium, Germany, Poland
- Communicating: Germany, Poland
- Relating and networking: Germany, Poland
- Negotiating: Belgium, Spain, France, Netherlands
- Reporting: Belgium, Germany, Poland
- Applying know-how, professional expertise: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Problem solving: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Developing new procedures and working methods: Germany, Poland
- Forming strategies: Germany, Poland
- Planning and organising: UK, France, Germany, Poland
- Following instructions and procedures: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Dealing with contingencies: Belgium, Spain, France, Germany, Poland
- Coping with stressful situations: Belgium, Poland
- Commercial thinking: Belgium, Poland

An interesting result is that in Poland and Germany, several competencies are very important that are not important in other countries, namely: instructing co-workers, communicating, relating and networking, developing new procedures and working methods, forming strategies.

Trends in size of occupations

Expected trends in the size of the occupation electrical mechanic or fitter differ between the countries:

- Increasing occupation size: UK, Spain, Germany
- Stable occupation size: Belgium, Netherlands, Poland

3.3 Occupation Civil engineering technician

Data are available for the following countries:

- UK
- Spain
- France
- Germany
- Poland

Tasks civil engineering technician: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the civil engineering technician in the different countries are reported below:

1. Perform calculations (e.g. dimensions, square footage, profile and component specifications, material quantities) using calculator or computer.
 - Frequency:
 - Daily: Spain
 - Daily/weekly: UK, France
 - Daily/never: Poland
 - Never: Germany
 - Importance:
 - Of major importance: UK, Spain, France, Poland
2. Plan and conduct field surveys, inspections or technical investigations (e.g. of topography, soils, drainage and water supply systems, road and highway systems, buildings and structures).
 - Frequency:
 - Daily: Spain
 - Daily/monthly: UK
 - Daily/yearly: Poland
 - Monthly: France
 - Never: Germany
 - Importance:
 - Of major importance: UK, Spain, France
 - Of major/some importance: Poland
3. Analyse details of project sites and illustrate findings (e.g. by designing maps, graphs, tracings and diagrams).
 - Frequency:
 - Daily: Spain
 - Daily/monthly: UK
 - Monthly: France, Poland
 - Monthly/never: Germany
 - Importance:
 - Of major importance: UK, Spain, France, Germany

- Of major/some importance: Poland
4. Prepare reports and document project activities and data.
- Frequency:
 - Daily: Spain
 - Daily/weekly: France, Poland
 - Weekly/monthly: UK
 - Monthly/never: Germany
 - Importance:
 - Of major importance: UK, France
 - Of major/some importance: Germany, Poland
 - Of some importance: Spain
5. Develop drawings and design layouts for projects.
- Frequency:
 - Daily: Spain, Germany
 - Daily/monthly: UK, France, Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Poland
6. Develop plans and estimate costs for installation of systems, utilisation of facilities, or construction of structures.
- Frequency:
 - Daily: Spain, Germany, Poland
 - Daily/weekly: France
 - Monthly/never: UK
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Poland
7. Read and review project blueprints and structural specifications e.g. to determine dimensions of structure or system and material requirements.
- Frequency:
 - Daily: Spain
 - Daily/weekly: Poland
 - Weekly: France
 - Monthly: UK
 - Never: Germany
 - Importance:
 - Of major importance: UK, Spain, France
 - Of major/some importance: Poland
8. Confer with supervisor to determine project details such as plan preparation, acceptance testing, and evaluation of field conditions.
- Frequency:

- Daily: Spain
 - Daily/weekly: UK
 - Daily/monthly: France, Poland
 - Weekly/never: Germany
 - Importance:
 - Of major importance: UK, Spain, France, Poland
 - Of some importance: Germany
9. Inspect project site and evaluate contractor work to detect design malfunctions and ensure conformity to specifications and codes.
- Frequency:
 - Daily: Spain France
 - Daily/monthly: UK
 - Daily/yearly: Poland
 - Never: Germany
 - Importance:
 - Of major importance: UK, Spain
 - Of major/some importance: Poland
 - Of some importance: France
10. Report maintenance problems occurring at project site and negotiate changes to resolve system conflicts.
- Frequency:
 - Daily: France
 - Daily/weekly:
 - Weekly: UK Spain
 - Daily/never: Poland
 - Never: Germany
 - Importance:
 - Of major importance: UK, Poland
 - Of some importance: Spain, France

An interesting finding with respect to the tasks of the civil engineering technician is that the frequency differs quite substantially between countries. In addition, there is not much agreement among experts from a particular country with respect to the frequency of tasks (e.g., for some tasks, one expert from a country indicates never while the other expert indicates daily). This may indicate that the occupation may in fact comprise more occupations with different sets of tasks. However, experts do seem to agree that competent performance of all tasks is important for the civil engineering technician – although the tasks do not all occur frequently.

Suggested changes to the task list

Based on the comments and suggestions as provided by the experts, this key occupation appears to be quite problematic. The experts are confused to what this occupational title and the standardised task description apply. For example, in Germany, only tasks 5 and 6 of the standardised task description appear to apply for this occupation, while in other countries, more tasks are considered to be relevant, even though there is quite some variation between the countries concerning the frequency and importance of the tasks. Among the experts, there appears to be confusion and discussion concerning the occupational boundaries between the following occupations: civil engineering technician, civil engineer and architect. It should be investigated more thoroughly what the correct occupations and occupational titles in this field of work are and which task descriptions are appropriate.

Required educational entry level

The required educational level of the civil engineering technician differs between the countries:

- ISCED 3: Germany
- ISCED 5: Netherlands

Additional formal or legal requirements

In some countries (especially Poland), there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Spain (established/laid down in law or legal requirement), Poland
- Certification (training / course): Poland
- Working according to a professional code or protocol: Poland
- Other formal or legal requirements: Spain (established/laid down in law or legal requirement), Germany (established/laid down in collective labour agreement), Poland

Competencies

The following competencies are of major importance for the civil engineering technician in the following countries (only major importance reported):

- Initiating action: UK, Spain, Germany, Poland
- Instructing co-workers: UK, Poland
- Supervising: UK, Poland
- Co-operating with colleagues: UK, France, Germany, Poland
- Communicating: UK, France, Germany, Poland
- Relating and networking: UK, France, Germany, Poland
- Negotiating: UK, France, Poland
- Reporting: UK, France, Poland
- Applying know-how, professional expertise: UK, Spain, France, Germany, Poland
- Problem solving: UK, Spain, France, Germany, Poland
- Developing new procedures and working methods: Poland

- Forming strategies: Poland
- Planning and organising: UK, France, Germany, Poland
- Following instructions and procedures: UK, Spain, France, Germany, Poland
- Dealing with contingencies: UK, Spain, France, Germany, Poland
- Coping with stressful situations: UK, France, Germany, Poland
- Commercial thinking: UK, France, Poland

Interestingly, certain competencies (e.g. developing new procedures and working methods, forming strategies) are only important for the civil engineering technician in Poland.

Trends in size of occupations

Expected trends in the size of the occupation civil engineering technician differ between the countries:

- Stable/declining occupation size: Germany
- Stable/increasing occupation size: Poland
- Increasing occupation size: UK, Spain, France

3.4 Occupation Car mechanic

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks car mechanic: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the car mechanic in the different countries are reported below:

1. Examine vehicles to determine extent of damage or malfunctions, estimate repair costs.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Poland, Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Poland
2. Confer with customers to obtain descriptions of vehicle problems, and to discuss work to be performed.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Poland

- Never: Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Poland
- 3. Inspect vehicles ensuring all important parts are examined, including belts, hoses, steering systems, spark plugs, brake and fuel systems, wheel bearings, and other parts.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Poland, Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Poland
- 4. Test components and systems, using suitable equipment such as compression gauges.
 - Frequency:
 - Daily: UK, France, Germany, Poland
 - Weekly: Belgium
 - Daily/weekly/yearly: Spain
 - Never/daily/weekly/yearly: Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Germany, Netherlands
 - Of major/some importance: Poland
 - Of some importance: Spain, France
- 5. Plan work procedures.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Poland
 - Never/weekly/daily: Netherlands
 - Importance:
 - Of major importance: UK, Spain, Germany, Poland
 - Of some importance: Belgium, France, Netherlands
- 6. Repair, replace, or adjust worn and faulty parts, using suitable tools and equipment.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Poland, Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 7. Perform routine and scheduled maintenance services such as oil changes, lubrications, etc.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Poland, Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of some importance: France
- 8. Test and adjust repaired parts or assemblies to make sure they work properly.

- Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Poland, Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Poland, Netherlands
9. Carry out minor body and trim repairs.
- Frequency:
 - Daily: Spain, Poland
 - Daily/weekly: Germany
 - Monthly: Belgium
 - Monthly/weekly/daily: France
 - Never/yearly/weekly: Netherlands
 - Never: UK
 - Importance:
 - Of major/some importance: Germany, Poland, Netherlands
 - Of some importance: Belgium, France
 - Of major/some/no importance: Spain

The tasks of the car mechanic are fairly similar across the different countries, with some minor differences. Task 2 (Confer with customers to obtain descriptions of vehicle problems, and to discuss work to be performed) is not part of the tasks of a car mechanic in the Netherlands: there, this task belongs to another occupation in the car industry, namely that of 'service advisor'. With respect to the task 'carry out minor body and trim repairs', there are differences between countries and there is some more disagreement between experts within a country. This also holds for the task 'Test components and systems, using suitable equipment such as compression gauges'. This is probably due to the fact that the frequency of this task varies in practice based on the type of vehicle problems one encounters and whether body repairs are performed by car mechanics or by workers specialised in body works. Concerning the task 'Plan work procedures', the Dutch experts are confused which is due to a minor error in translation ('plant werkzaamheden' instead of 'plant eigen werkzaamheden').

Suggested changes to the task list

Most of the tasks of the EurOccupations standardised task list apply in each country, with the exception of the Netherlands.

The following tasks should be added to the EurOccupations standardised task list based on the comments of experts in various countries:

- Fit and service accessories like radios and alarms.
- Diagnose electrical and mechanical faults and determine solutions.

Required educational entry level

The required educational level of the car mechanic differs between the countries:

- ISCED 1: Poland
- ISCED 3: Germany, France, UK
- ISCED 3/4: Belgium

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): UK, Belgium (established/laid down in branch or industry), Netherlands (established/laid down in branch or industry)
- Certification (training / course): UK, Germany, Netherlands, Poland (established/laid down in collective labour agreement/law or legal requirement)
- Working according to a professional code or protocol: UK, Netherlands, Poland
- Other formal or legal requirements: UK, France (established/laid down in law or legal requirement), Netherlands, Poland (established/laid down in branch or industry)

Competencies

The following competencies are of major importance for the car mechanic in the following countries (only major importance reported):

- Initiating action: France, Germany
- Instructing co-workers: no countries
- Supervising: Germany
- Co-operating with colleagues: UK, Germany
- Communicating: UK, Belgium, Germany, Netherlands
- Relating and networking: no countries
- Negotiating: no countries
- Reporting: UK, Belgium, Germany
- Applying know-how, professional expertise: UK, Belgium, France, Germany, Netherlands, Poland
- Problem solving: UK, Belgium, France, Germany, Poland
- Developing new procedures and working methods: no countries
- Forming strategies: France
- Planning and organising: Germany
- Following instructions and procedures: UK, Belgium, France, Germany, Netherlands
- Dealing with contingencies: Belgium, Germany, Poland
- Coping with stressful situations: Belgium, Germany
- Commercial thinking: Germany

Some competencies are only important in one or a few countries (e.g., commercial thinking, planning and organising), while others are important in almost all countries (e.g. applying know-how, professional expertise). Especially Germany seems to deviate from other countries with respect to the relevant competencies (several competencies are only important in Germany).

Trends in size of occupations

Expected trends in the size of the occupation car mechanic differ between the countries:

- Stable occupation size: Belgium, France, Germany
- Stable/declining occupation size: Netherlands
- Increasing occupation size: UK, Spain, Poland

3.5 Occupation Construction bricklayer

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks construction bricklayer: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the construction bricklayer in the different countries are reported below:

1. Analyse and interpret work orders, e.g. study drawings to determine specifications and to calculate the materials required.
 - Frequency:
 - Daily: France, Germany
 - Daily/weekly: UK, Poland
 - Daily/monthly: Netherlands
 - Weekly: Belgium
 - Daily/weekly/never: Spain
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
2. Measure distance from reference points and mark guidelines to lay out work, e.g. by using plumb bobs and levels.
 - Frequency:
 - Daily: France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Monthly: Belgium
 - Yearly/monthly/daily: Spain

- Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some/no importance: Spain
- 3. Calculate angles and courses and determine vertical and horizontal alignment of courses.
 - Frequency:
 - Daily: UK, France, Germany
 - Daily/weekly: Netherlands, Poland
 - Monthly: Belgium, Spain
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain
- 4. Lay courses of bricks and other building blocks, from corner to corner, using mason's line.
 - Frequency:
 - Daily: UK, Belgium, France, Germany, Netherlands, Poland
 - Monthly: Spain
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
- 5. Break or cut bricks and other used building material to size, using tools such as trowel edges or hammers.
 - Frequency:
 - Daily: UK, Belgium, France, Germany, Poland
 - Daily/weekly: Netherlands
 - Monthly: Spain
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 6. Mix specified amounts of sand, clay, cement, or mortar powder with water.
 - Frequency:
 - Daily: UK, Belgium, France, Germany, Netherlands, Poland
 - Monthly: Spain
 - Importance:
 - Of major importance: Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
 - Of some importance: UK
- 7. Apply and smooth mortar or other mixture over work surface to serve as a base and binder for bricks.
 - Frequency:
 - Daily: UK, Belgium, France, Germany, Poland

- Daily/weekly: Netherlands
 - Daily/weekly/monthly: Spain
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
8. Fasten brick or other building material to structure, for example with wire clamps, anchor holes or cement.
- Frequency:
 - Daily: UK, France, Germany, Poland
 - Daily/monthly: Netherlands
 - Weekly: Belgium
 - Monthly: Spain
 - Importance:
 - Of major importance: UK, Spain, France, Germany
 - Of major/some importance: Netherlands, Poland
 - Of some importance: Belgium
9. Perform isolation works.
- Frequency:
 - Daily: Belgium
 - Daily/weekly: France, Germany
 - Daily/monthly: Netherlands
 - Weekly: UK
 - Monthly: Poland
 - Daily/monthly/yearly: Spain
 - Importance:
 - Of major importance: Belgium, France, Germany, Poland
 - Of major/some importance: Netherlands
 - Of some importance: Spain
10. Remove excess mortar, e.g. with trowels and hand tools, and finish mortar joints with jointing tools, for a sealed, uniform appearance.
- Frequency:
 - Daily: UK, Belgium, France, Germany, Netherlands, Poland
 - Monthly: Spain
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain
11. Erect scaffolding.
- Frequency:
 - Daily: Germany, Poland

- Weekly/monthly: Netherlands
- Weekly: France
- Monthly: Belgium, Spain
- Never: UK
- Importance:
 - Of major importance: Belgium, Germany, Netherlands, Poland
 - Of some importance: France
 - Of major/some/no importance: Spain

In general, the frequency and importance of tasks is similar in the different countries. However, Spain diverges from the other countries: most tasks are performed on a monthly basis in Spain, while they are performed on a daily/weekly basis in the other countries. With respect to some tasks, there are substantial differences between countries: e.g., erecting scaffolding occurs daily in Germany and Poland, while it occurs weekly or monthly in the Netherlands, France, Belgium and Spain, and even never in the UK.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries results in a minor change in the EurOccupations standardised task list. One task is added to this task list. For some specific countries, country-specific tasks are included in the national task list additionally.

The following task should be added to the EurOccupations standardised task list based on the comments of experts in various countries:

- Place different kinds of vaults.

Required educational entry level

The required educational level of the construction bricklayer differs between the countries:

- ISCED 1: UK
- ISCED 1/3: Spain
- ISCED 2: Netherlands
- ISCED 2/3: France
- ISCED 3: Germany

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Spain (established/laid down in collective labour agreement), France, Netherlands (established/laid down in branch or industry)
- Certification (training / course): Germany, Netherlands (established/laid down in law or legal requirement), Poland
- Working according to a professional code or protocol: Netherlands (established/laid down in collective labour agreement)

- Other formal or legal requirements: UK, Belgium (established/laid down in collective labour agreement), Germany (established/laid down in collective labour agreement), Netherlands (established/laid down in collective labour agreement), Poland

Interesting to note is that especially in the Netherlands, there are additional formal legal requirements, namely: diploma, certification, professional code or protocol and other formal or legal requirements.

Competencies

The following competencies are of major importance for the construction bricklayer in the following countries (only major importance reported):

- Initiating action: Belgium, Spain, Germany
- Instructing co-workers: Belgium, Germany, Poland
- Supervising: Germany
- Co-operating with colleagues: UK, Belgium, Germany, Netherlands, Poland
- Communicating: Belgium, Germany, Netherlands, Poland
- Relating and networking: Poland
- Negotiating: no countries
- Reporting: Belgium, Germany, Netherlands, Poland
- Applying know-how, professional expertise: UK, Spain, France, Germany, Netherlands, Poland
- Problem solving: Belgium, Spain, France, Germany, Netherlands
- Developing new procedures and working methods: France
- Forming strategies: no countries
- Planning and organising: Belgium, France, Germany, Netherlands, Poland
- Following instructions and procedures: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Dealing with contingencies: Belgium, Spain, Germany, Netherlands, Poland
- Coping with stressful situations: Belgium, Germany, Netherlands, Poland
- Commercial thinking: no countries

Following instructions and procedures is a very important competency in all countries. Some other competencies are only relevant in one country, e.g. developing new procedures and working methods in France and relating and networking in Poland. Interestingly, co-operating with colleagues is not important in Spain and France, while it is of major importance in the other countries.

Trends in size of occupations

Expected trends in the size of the occupation construction bricklayer differ between the countries:

- Declining occupation size: Netherlands, Poland
- Stable/declining occupation size: Spain
- Stable occupation size: Belgium, Germany
- Increasing occupation size: UK, France

3.6 Occupation Carpenter

Data are available for the following countries:

- UK
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks carpenter: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the carpenter in the different countries are reported below:

1. Study drawings, specifications product information, sketches or building plans to prepare the carpentry work.
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
2. Measure distances and materials and mark cutting lines on materials using ruler, pencil, chalk, marking gauge, measuring tape, etc.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
3. Check existing structures using tools such as levels, framing squares, etc.
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
4. Shape, saw or cut (building) materials (e.g. boards, timber, plywood) to specified measurements, e.g. using hand or power tools.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Daily/weekly:
 - Weekly:

- Importance:
 - Of major importance: UK, Spain, Germany, Netherlands, Poland
 - Of major/some importance: France
- 5. Fasten (building) materials with varying fastening materials, such as screws, nails, glue, bolts, etc.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
- 6. Erect scaffolding, (roof) supports, chutes etc. to work above ground level.
 - Frequency:
 - Daily: Germany, Poland
 - Weekly: Spain, France, Netherlands
 - Weekly/never: UK
 - Importance:
 - Of major importance: UK, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
- 7. Remove damaged or defective parts or sections of structures and repair or replace these, e.g. using carpenter's hand tools and power tools.
 - Frequency:
 - Daily: France, Germany, Netherlands, Poland
 - Daily/weekly: UK, Spain
 - Importance:
 - Of major importance: UK, Germany, Netherlands, Poland
 - Of major/some importance: France
 - Of some importance: Spain
- 8. Install and repair doors, frames, timber floors, roofs, suspended ceilings etc. , e.g. using carpenter's hand and power tools.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands, Poland
 - Of major/some importance: France
- 9. Finish seams and connections with lute, skirting, moulding, etc.
 - Frequency:
 - Daily: France, Germany, Netherlands, Poland
 - Daily/weekly: UK, Spain
 - Importance:
 - Of major importance: UK, Germany, Netherlands, Poland

- Of major/some importance: France
- Of some importance: Spain

The tasks of the carpenter are very similar across the different countries: in almost all countries, all tasks occur daily and are of major importance.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not directly result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list. Specifically, German experts indicate that due to e.g. technological change and the use of new materials in the occupation, the EurOccupations task list is not sufficiently up-to-date and that the task list should be revised. This should be investigated in more detail, see for example www.EVH.eu (the European Federation of Timber Construction).

Required educational entry level

The required educational level of the carpenter differs between the countries:

- ISCED 1: UK
- ISCED 3: Germany, France, Netherlands

Interestingly, the required educational level is lower in the UK than in the other countries.

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Netherlands (established/laid down in branch or industry)
- Certification (training / course): Netherlands, Poland
- Working according to a professional code or protocol: Netherlands (established/laid down in collective labour agreement), Poland (established/laid down in branch or industry)
- Other formal or legal requirements: UK (established/laid down in branch or industry)

Interestingly, especially the Netherlands and Poland have formal and legal requirements for carpenters (diploma, certification and professional code or protocol).

Competencies

The following competencies are of major importance for the carpenter in the following countries (only major importance reported):

- Initiating action: Germany, Poland
- Instructing co-workers: Poland
- Supervising: Poland
- Co-operating with colleagues: UK, Germany, Netherlands, Poland
- Communicating: UK, Germany, Netherlands, Poland

- Relating and networking: no countries
- Negotiating: UK
- Reporting: UK, Poland
- Applying know-how, professional expertise: UK, Germany, Netherlands, Poland
- Problem solving: UK, Germany, Netherlands, Poland
- Developing new procedures and working methods: no countries
- Forming strategies: no countries
- Planning and organising: Germany, Netherlands
- Following instructions and procedures: UK, France, Netherlands, Poland
- Dealing with contingencies: Netherlands, Poland
- Coping with stressful situations: no countries
- Commercial thinking: Poland

There are some interesting differences between countries with respect to the competencies: e.g. only in Poland, supervising and instructing co-workers is a competency of major importance. Especially in the UK, Germany and the Netherlands, the same competencies are important.

Trends in size of occupations

Expected trends in the size of the occupation carpenter differ between the countries:

- Declining occupation size: France Netherlands
- Stable/declining occupation size: Poland
- Stable/increasing occupation size: Spain
- Stable occupation size: Germany
- Increasing occupation size: UK

3.7 Occupation House painter

Data are available for the following countries:

- UK
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks house painter: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the house painter in the different countries are reported below:

1. Read work orders or receive instructions from clients in order to determine work requirements (e.g. materials).
 - Frequency:
 - Daily: Spain, Germany, Netherlands
 - Daily/weekly: France
 - Weekly: UK, Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
2. Estimate costs, based on surface measurements and/or work orders.
 - Frequency:
 - Daily: Spain, Germany
 - Weekly: UK, France, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, France, Poland
 - Of major/some importance: Germany, Netherlands
3. Erect scaffolding, supports, ladders etc. to work above ground level.
 - Frequency:
 - Daily: France, Germany, Netherlands
 - Daily/weekly: Poland
 - Daily/weekly/monthly: Spain
 - Never: UK
 - Importance:
 - Of major importance: Spain, Germany, Netherlands
 - Of major/some importance: France
 - Of some importance: Poland
4. Clear the surface, remove obstructing fixtures (e.g. lamps, electric switch covers) and cover surfaces with dustsheets, plastic sheets etc.
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Never: Belgium
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands
 - Of major/some importance: France, Poland
5. Prepare surfaces using different techniques (e.g. burning, sanding, scraping, sandblasting and/or treating with preparations, (e.g., turpentine, mildew remover).
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands, Poland
 - Weekly: UK

- Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands
 - Of major/some importance: Poland
- 6. Fill cracks, holes, and joints with caulk, putty, plaster, or other fillers, for instance using caulking guns or putty knives.
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands
 - Daily/weekly: Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
- 7. Apply a primer or sealer to prepare the surface for the finish coat.
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands
 - Daily/weekly: Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, France, Germany, Netherlands, Poland
 - Of some importance: Spain
- 8. Mix paint, stain, or varnish with oil, turpentine or other additives in order to obtain desired colours and consistencies.
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
- 9. Apply paint, stain, varnish, wallpaper and other finishes to walls, ceilings and/or other surfaces inside or outside the building using different techniques and equipment, such as brushes, spray guns, or rollers.
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands
 - Of major/some importance: Poland
- 10. Wash equipment and clean work areas.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands
 - Daily/weekly: Poland

- Importance:
 - Of major importance: Germany, Netherlands
 - Of major/some importance: France, Poland
 - Of some importance: UK, Spain

The tasks of the house painter are very similar across the different countries with respect to frequency and importance of competent performance. Interestingly, erecting scaffolding, supports, ladders etc. is never a task in UK, while it is a daily/weekly task in the other countries. We found the same difference for the occupation construction bricklayer.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list. Interesting to note is that both German and Dutch experts indicate that the occupation of *house painter* comprises several specialisations.

Required educational entry level

The required educational level of the house painter differs between the countries:

- ISCED 1: UK
- ISCED 2/3: France
- ISCED 3: Germany, Netherlands

Interestingly, the required educational level is lower in the UK than in the other countries.

Additional formal or legal requirements

In some countries (especially the Netherlands), there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): France, Netherlands (established/laid down in branch or industry)
- Certification (training / course): Germany, Netherlands (established/laid down in branch or industry)
- Working according to a professional code or protocol: Netherlands (established/laid down in branch or industry), Poland (established/laid down in branch or industry)
- Other formal or legal requirements: Netherlands (established/laid down in branch or industry and law or legal requirement), Poland (established/laid down in branch or industry)

Competencies

The following competencies are of major importance for the house painter in the following countries (only major importance reported):

- Initiating action: Germany, Netherlands

- Instructing co-workers: Germany, Netherlands, Poland
- Supervising: Germany, Poland
- Co-operating with colleagues: France, Germany, Netherlands, Poland
- Communicating: Germany, Netherlands, Poland
- Relating and networking: no countries
- Negotiating: no countries
- Reporting: Germany, Netherlands, Poland
- Applying know-how, professional expertise: UK, Belgium, France, Germany, Netherlands, Poland
- Problem solving: Germany, Netherlands, Poland
- Developing new procedures and working methods: Poland
- Forming strategies: no countries
- Planning and organising: Germany, Netherlands, Poland
- Following instructions and procedures: UK, Spain, Germany, Netherlands, Poland
- Dealing with contingencies: Germany, Netherlands, Poland
- Coping with stressful situations: Germany, Poland
- Commercial thinking: Germany

Interestingly, certain competencies revolving around communicating, instructing and co-operating are only of major importance in Germany, the Netherlands and Poland.

Trends in size of occupations

Expected trends in the size of the occupation house painter differ between the countries:

- Increasing occupation size: UK, Spain, Poland
- Stable occupation size: Germany, Netherlands

3.8 Occupation Tile setter, tile layer

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks tile setter, tile layer: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the tile setter, tile layer in the different countries are reported below:

1. Organise the material and the work area, e.g. gathers and checks the required tools and materials.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands
 - Weekly: Poland
 - Importance:
 - Of major importance: Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
 - Of some importance: UK
2. Check and prepare the surface, e.g. by cleaning, smoothing and/or applying adhesives.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
3. Set out a tile distribution, measure and mark the tiling surface.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
4. Mix mortar, glue or other substances in the right consistency, amongst others taking into account the weight and thickness of the tile.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
5. Make tiles the right size, e.g. using (electric) cutting tools.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:

- Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
6. Prepare surfaces, e.g. apply mortar on floors and strickle off smoothly.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
7. Set or lay tiles straight and evenly on the surface with mortar or glue, press or tap the tile.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
8. Finish the tiling work, e.g. finish and dress the joints and clean the work area.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
9. Carry out specialised tiling work (e.g. stairs, mosaic, patterns).
- Frequency:
 - Daily: Spain, Germany, Poland
 - Weekly: France
 - Monthly: UK, Belgium, Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of some importance: France
10. Conduct repair and renovation work on tiling.
- Frequency:
 - Daily: Spain, Germany
 - Monthly: UK, Belgium, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland

Almost all tasks occur daily and are of major importance in all countries. Interestingly, carrying out specialised tiling work (e.g. stairs, mosaic, patterns) is only a daily task in Spain, Germany, Poland. Also, conducting repair and renovation work on tiling only is a daily task in Spain and Germany. Competent performance of these two tasks is considered to be of major importance in all countries (except specialised tiling work, which is of some importance in France): only the frequency varies.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the tile setter, tile layer differs between the countries:

- ISCED 1: UK
- ISCED 3: Germany, France
- ISCED 0/1/2/3: Netherlands

Again, the required educational level is lower in the UK than in the other countries. In the Netherlands, there is no agreement about the minimum required education level.

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): France (established/laid down in branch or industry)
- Certification (training / course): no countries
- Working according to a professional code or protocol: Germany (established/laid down in collective labour agreement), Poland
- Other formal or legal requirements: France, Germany (established/laid down in collective labour agreement), Netherlands (established/laid down in law or legal requirement)

Competencies

The following competencies are of major importance for the tile setter, tile layer in the following countries (only major importance reported):

- Initiating action: Belgium, Spain, Germany
- Instructing co-workers: Germany, Poland
- Supervising: Germany, Poland
- Co-operating with colleagues: Belgium, Germany, Netherlands, Poland
- Communicating: Belgium, Germany, Poland
- Relating and networking: no countries

- Negotiating: no countries
- Reporting: no countries
- Applying know-how, professional expertise: UK, Spain, France, Germany, Netherlands
- Problem solving: Belgium, Spain, Germany, Poland
- Developing new procedures and working methods: Poland
- Forming strategies: no countries
- Planning and organising: Belgium, Germany, Poland
- Following instructions and procedures: Poland
- Dealing with contingencies: Belgium, France, Germany, Poland
- Coping with stressful situations: Germany, Poland
- Commercial thinking: Poland

Interestingly, competencies such as co-operating, communicating and instructing are only of major importance in Germany and Poland.

Trends in size of occupations

Expected trends in the size of the occupation tile setter, tile layer differ between the countries:

- Declining/stable occupation size: Netherlands
- Stable occupation size: Belgium, Germany
- Stable/increasing occupation size: Spain
- Increasing occupation size: UK, Poland

3.9 Occupation Plumber

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks plumber: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the plumber in the different countries are reported below:

1. Review blueprints, building plans, building regulations, product information and specifications to determine work details and procedures (e.g. sequence of pipe installations, to plan around obstructions such as electrical wiring).

- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of major/some importance: France
2. Select sizes and types of equipment and materials.
- Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands
 - Weekly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
3. Locate and mark the position of pipe installations, connections, passage holes, and fixtures in structures, using measuring instruments such as rulers and levels.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
4. Measure, cut, thread, and bend pipe to required angle, using different techniques and hand and power tools or machines such as pipe cutters, pipe-threading and pipe-bending machines.
- Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
5. Assemble pipe sections, tubing and fittings, using materials such as couplings, clamps, screws, bolts, cement, plastic solvent, caulking, and/or techniques such as soldering, brazing and welding.
- Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
6. Install pipe assemblies, fittings, valves, appliances and fixtures (e.g. sinks, toilets, dishwashers, heating and cooling systems, gas appliances, water tanks), e.g. using hand and power tools.

- Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
7. Maintain and repair plumbing systems.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Weekly: UK
 - Monthly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of major/some importance: France
8. Check the work (e.g. by filling pipes or plumbing fixtures with water or air and observe pressure gauges to detect and locate leaks) and repair and correct faults.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Weekly: UK, Poland
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain
9. Keep records of assignments and produce detailed work reports.
- Frequency:
 - Daily: Belgium, France, Germany
 - Weekly: UK, Spain, Netherlands, Poland
 - Importance:
 - Of major importance: France, Germany, Netherlands, Poland
 - Of some importance: UK, Belgium, Spain

The tasks of the plumber are very similar across the different countries. With respect to keeping records and producing work reports, there are some differences in frequency (daily task in Belgium, France, Germany, weekly task in UK, Spain, Netherlands, Poland).

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

In Germany, there appears to be confusion about the correct occupational title for this occupation: either 'Anlagenmechaniker/in für Sanitär-, Heizungs- und Klimatechnik' or 'Klempner/in'. For the German case, the task list appears to be out of date. This should be investigated more thoroughly.

Required educational entry level

The required educational level of the plumber differs between the countries:

- ISCED 1: UK
- ISCED 2: Netherlands
- ISCED 3: Belgium, Germany, France

For the occupation plumber, the minimum required educational level again is lower in the UK than in the other countries.

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): France, Germany (established/laid down in law or legal requirement)
- Certification (training / course): Germany (established/laid down by federal government), the Netherlands (established/laid down in law or legal requirement)
- Working according to a professional code or protocol: France (established/laid down in law or legal requirement), Germany (established/laid down in law or legal requirement), Poland
- Other formal or legal requirements: UK

Competencies

The following competencies are of major importance for the plumber in the following countries (only major importance reported):

- Initiating action: Spain, France, Germany, Netherlands
- Instructing co-workers: Germany, Poland
- Supervising: Germany
- Co-operating with colleagues: Germany, Netherlands, Poland
- Communicating: Germany, Netherlands, Poland
- Relating and networking: Germany
- Negotiating: no countries
- Reporting: Germany
- Applying know-how, professional expertise: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Problem solving: UK, Belgium, Spain, France, Germany
- Developing new procedures and working methods: no countries
- Forming strategies: Netherlands
- Planning and organising: France, Germany, Netherlands
- Following instructions and procedures: UK, Spain, France, Germany, Netherlands
- Dealing with contingencies: UK, Belgium, Spain, France, Germany, Netherlands, Poland

- Coping with stressful situations: UK, Belgium, France, Germany, Netherlands, Poland
- Commercial thinking: Belgium, France, Germany

Interestingly, competencies such as co-operating, communicating and instructing are only of major importance in Germany, the Netherlands and Poland.

Trends in size of occupations

Expected trends in the size of the occupation plumber differ between the countries:

- Increasing occupation size: UK, Spain, France, Germany, Poland
- Stable/increasing occupation size: Netherlands
- Stable occupation size: Belgium

3.10 Occupation Road paviour

Data are available for the following countries:

- UK
- Spain
- Germany
- Netherlands
- Poland

Tasks road paviour: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the road paviour in the different countries are reported below:

1. Determine, depending on the local soil conditions, the amount of base materials needed and supply the materials.
 - Frequency:
 - Daily: Germany
 - Daily/weekly: Poland
 - Daily/never: Netherlands
 - Weekly: Spain
 - Never: UK
 - Importance:
 - Of major importance: Netherlands, Poland
 - Of some importance: Spain
 - Of major/no importance: Germany
2. Remove old pavement and/or existing soil and excavate to the proper depth.
 - Frequency:
 - Daily: Spain, Germany

- Daily/weekly: Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/no importance: Germany
- 3. Bring the surface to the proper height by adding sand.
 - Frequency:
 - Daily: Spain, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/no importance: Germany
- 4. Apply edge restraints, gutters, gulleys and drains, and connect these to the sewer.
 - Frequency:
 - Daily: Spain, Germany, Netherlands
 - Daily/weekly: Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/no importance: Germany
- 5. Determine the paver layout pattern and create markings, e.g. for joints and stringlines.
 - Frequency:
 - Daily: Spain, Germany
 - Daily/weekly: Poland
 - Daily/never: Netherlands
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/no importance: Germany
- 6. Cut paving stones to size, e.g. using a masonry saw or a grinding machine.
 - Frequency:
 - Daily: Spain, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/no importance: Germany
- 7. Set pavers with different techniques and tools (e.g. hand and power tools).
 - Frequency:
 - Daily: Spain, Germany, Netherlands, Poland
 - Weekly: UK

- Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/no importance: Germany
8. Tamp the entire paving surface in both directions until the surface is smooth for example using a mechanical plate tamper.
- Frequency:
 - Daily: Spain, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/no importance: Germany
9. Sweep sand into the joints until they are full.
- Frequency:
 - Daily: Spain, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/no importance: Germany
10. Confer with client and/or supervisor after job completion prior to opening to traffic.
- Frequency:
 - Daily: Germany, Netherlands
 - Daily/weekly: Poland
 - Weekly: UK, Spain
 - Importance:
 - Of major importance: UK, Netherlands
 - Of major/some importance: Spain
 - Of some importance: Poland
 - Of major/no importance: Germany

The tasks of the road paviour are very similar in the different countries. There is some variation with respect to the task determining and supplying base materials, which is never a task in the UK and a daily task in Germany. In the Netherlands, experts disagree whether it is a daily task or never a task of the road paviour. There is also disagreement in the Netherlands with respect to the task 'determine the paver layout pattern and create markings', which is a daily task according to 3 experts yet never a task according to 3 other experts. In Germany, there is disagreement about the importance of all tasks.

Suggested changes to the task list

Even though the tasks that are included in the EurOccupations standard task list are considered to be important and part of the duties of a road paviour in all countries, several experts mention that the

EurOccupations standardised task list does not do justice to the occupation of road paviour and should be developed further. Therefore, this task description should be revised. How the task description should be revised has to be investigated more thoroughly, since the various experts from the different countries give quite varying suggestions.

Required educational entry level

The required educational level of the road paviour differs between the countries:

- ISCED 1: UK
- ISCED 2: Netherlands
- ISCED 3: Germany, France

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Netherlands (established/laid down by federal government)
- Certification (training / course): Netherlands (established/laid down in law or legal requirement), Poland (established/laid down in collective labour agreement)
- Working according to a professional code or protocol: Poland (established/laid down in branch or industry)
- Other formal or legal requirements: UK (established/laid down in law or legal requirement)

Competencies

The following competencies are of major importance for the road paviour in the following countries (only major importance reported):

- Initiating action: Germany, Netherlands, Poland
- Instructing co-workers: Poland
- Supervising: Poland
- Co-operating with colleagues: UK, Germany, Netherlands, Poland
- Communicating: Netherlands, Poland
- Relating and networking: Poland
- Negotiating: Poland
- Reporting: Poland
- Applying know-how, professional expertise: UK, Germany, Netherlands, Poland
- Problem solving: Germany, Poland
- Developing new procedures and working methods: Poland
- Forming strategies: Poland
- Planning and organising: Poland
- Following instructions and procedures: UK, Netherlands, Poland

- Dealing with contingencies: Germany, Poland
- Coping with stressful situations: Poland
- Commercial thinking: Poland

All competencies are considered of major importance in Poland. In the other countries, applying know-how, professional expertise and co-operating with colleagues are the most important competencies.

Trends in size of occupations

Expected trends in the size of the occupation road paviour differ between the countries:

- Stable/increasing occupation size: Poland
- Stable occupation size: UK, Spain, Germany
- Declining/stable/increasing occupation size: Netherlands

3.11 Occupation Building structure engineer

Data are available for the following countries:

- UK
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks building structure engineer: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the building structure engineer in the different countries are reported below:

1. Conduct preliminary research, for example by examining building sites.
 - Frequency:
 - Daily: France
 - Daily/weekly: Spain
 - Weekly/monthly: Netherlands
 - Monthly: Germany
 - Monthly/yearly: UK
 - Never: Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands
 - Of some importance: France
2. Consult with clients and other relevant contacts (such as government authorities, engineers) to obtain relevant information.

- Frequency:
 - Daily: France
 - Daily/weekly: Spain, Germany
 - Weekly/monthly: UK, Netherlands
 - Monthly: Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands
 - Of some importance: France, Poland
3. Design the framework of buildings.
- Frequency:
 - Daily: Poland
 - Daily/weekly: Spain
 - Weekly: UK, Netherlands
 - Monthly: Germany
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/some importance: Germany
 - Of some importance: France
4. Develop building plans in accordance with relevant building codes and regulations.
- Frequency:
 - Daily/weekly: UK, Spain
 - Daily/monthly: Germany
 - Weekly/monthly: Netherlands
 - Monthly: Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
5. Give advice to clients and other parties involved, for example on materials and working procedures.
- Frequency:
 - Daily: Germany
 - Daily/weekly: Spain
 - Weekly: UK, Netherlands
 - Monthly: Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands
 - Of some importance: France, Poland
6. Prepare sketches, scale drawings etc., for example using computer-aided design (CAD) equipment.
- Frequency:

- Daily: Spain, France
 - Daily/weekly: Germany
 - Daily/never: Poland
 - Weekly: UK, Netherlands
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
7. Describe building materials specifications and standards that have to be complied with.
- Frequency:
 - Daily: Spain, France
 - Daily/weekly: Germany
 - Weekly: UK, Netherlands
 - Monthly: Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands
 - Of major/some importance: Poland
8. Evaluate and incorporate work plans and drawings of third parties.
- Frequency:
 - Daily/weekly: Spain, Germany
 - Weekly: Netherlands
 - Weekly/monthly: UK
 - Never: Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands
 - Of some importance: France
9. Negotiate with building contractors, for example on costs and work planning.
- Frequency:
 - Daily: Spain
 - Weekly: UK, Germany
 - Weekly/monthly: Netherlands
 - Never: Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands
 - Of some importance: France
10. Coordinate and administer the preparation and execution of building projects.
- Frequency:
 - Daily: Spain, France, Germany, Poland
 - Weekly: UK
 - Weekly/monthly: Netherlands
 - Importance:

- Of major importance: UK, Spain, France, Germany, Netherlands, Poland
11. Control and supervise all stages of construction.
- Frequency:
 - Daily: Spain, France, Germany
 - Weekly: UK, Netherlands
 - Daily/weekly/yearly: Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
12. Inspect project sites to coordinate work, monitor progress and ensure conformity to design specifications and standards.
- Frequency:
 - Daily: Spain, France, Germany
 - Weekly: UK, Netherlands
 - Daily/weekly/never: Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland

Almost all tasks are considered important in the different countries (except for a few tasks in Poland, which never occur in this country). Interestingly, there is much variation between countries and disagreement between experts within countries about the frequency of tasks. This could indicate that the frequency of tasks varies in daily practice.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the building structure engineer differs substantially between the countries:

- ISCED 4: UK
- ISCED 5: Netherlands
- ISCED 6: France

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Germany (established/laid down in law or legal requirement), Netherlands (established/laid down in law or legal requirement)
- Certification (training / course): Netherlands

- Working according to a professional code or protocol: Netherlands (established/laid down in law or legal requirement), Poland (established/laid down in branch or industry)
- Other formal or legal requirements: UK, Spain (established/laid down in law or legal requirement), Netherlands (established/laid down in law or legal requirement), Poland

Competencies

The following competencies are of major importance for the building structure engineer in the following countries (only major importance reported):

- Initiating action: UK, France, Germany, Netherlands
- Instructing co-workers: UK, France, Germany
- Supervising: UK, France, Germany, Netherlands, Poland
- Co-operating with colleagues: UK, France, Germany, Netherlands, Poland
- Communicating: UK, France, Germany, Poland
- Relating and networking: UK, France, Germany
- Negotiating: UK, Germany
- Reporting: France, Germany
- Applying know-how, professional expertise: UK, France, Germany, Netherlands, Poland
- Problem solving: UK, France, Germany, Netherlands, Poland
- Developing new procedures and working methods: France
- Forming strategies: Germany, Netherlands
- Planning and organising: UK, France, Germany, Netherlands, Poland
- Following instructions and procedures: UK, France, Germany, Poland
- Dealing with contingencies: UK, France, Germany, Netherlands, Poland
- Coping with stressful situations: UK, Germany, Netherlands, Poland
- Commercial thinking: Germany

Trends in size of occupations

Expected trends in the size of the occupation building structure engineer differ between the countries:

- Increasing occupation size: UK, Spain, Poland
- Stable/increasing occupation size: Netherlands
- Stable occupation size: Germany

3.12 Occupation Building architect

Data are available for the following countries:

- UK
- Belgium
- Spain

- France
- Germany
- Netherlands
- Poland

Tasks building architect: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the building architect in the different countries are reported below:

1. Consult with clients and other relevant contacts (such as landscape architects or planning authorities) to obtain relevant information, for example on costs and functional and spatial requirements.
 - Frequency:
 - Daily: Belgium, France
 - Daily/monthly: Poland
 - Weekly: Spain, Germany
 - Weekly/monthly: Netherlands
 - Monthly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Poland
 - Of major/some importance: Netherlands
 - Of some importance: France
2. Conduct feasibility studies and financial analyses of building projects.
 - Frequency:
 - Daily: Belgium, France
 - Daily/weekly/monthly: Spain
 - Monthly: UK, Germany, Netherlands
 - Monthly/yearly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Poland
 - Of major/some importance: Netherlands
 - Of some importance: France
3. Conceptualise, create and develop designs for construction and renovation of buildings and other structures.
 - Frequency:
 - Daily: Belgium, Spain, France
 - Daily/monthly: Poland
 - Weekly/monthly: UK
 - Monthly: Germany, Netherlands
 - Importance:

- Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of some importance: France
4. Design landscape near buildings.
- Frequency:
 - Daily: France, Poland
 - Weekly: Belgium, Spain
 - Weekly/yearly: UK
 - Monthly: Netherlands
 - Never/yearly: Germany
 - Importance:
 - Of major importance: UK, Belgium, Poland
 - Of some importance: Spain, France, Netherlands
 - Of no importance: Germany
5. Prepare sketches, scale drawings, models etc., for example using computer-aided design (CAD) equipment.
- Frequency:,
 - Daily: Belgium, Spain, France, Germany, Poland
 - Monthly: Netherlands
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of some importance: France
6. Prepare a work planning for construction projects.
- Frequency:
 - Daily: France
 - Weekly: Belgium, Spain
 - Weekly/monthly: UK
 - Monthly: Germany, Poland
 - Never: Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Germany
 - Of major/some importance: Poland
 - Of some importance: Spain, France
7. Coordinate and administer construction projects.
- Frequency:
 - Daily: Belgium, Spain, France, Germany
 - Daily/weekly: Poland
 - Weekly/monthly: UK
 - Never: Netherlands

- Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Poland
 - Of some importance: France
8. Represent clients in obtaining bids and awarding construction contracts.
- Frequency:
 - Daily: France
 - Weekly: Belgium, Spain, Germany
 - Weekly/monthly: Poland
 - Weekly/monthly/yearly: Netherlands
 - Monthly/yearly: UK
 - Importance:
 - Of major importance: UK, Belgium, Germany
 - Of major/some importance: Netherlands, Poland
 - Of some importance: Spain, France
9. Prepare or supervise the preparation of contract documents and specifications.
- Frequency:
 - Daily: France
 - Weekly: Belgium, Spain, Germany
 - Weekly/monthly: UK
 - Monthly/yearly: Poland
 - Monthly/never: Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Germany, Netherlands
 - Of major/some importance: Poland
 - Of some importance: France
 - Of major/some/no importance: Spain
10. Observe, inspect and monitor building work.
- Frequency:
 - Daily: Belgium, Spain, France, Germany
 - Daily/monthly: Poland
 - Weekly/monthly: UK
 - Weekly/yearly: Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Poland
 - Of major/some importance: Netherlands
 - Of some importance: France
11. Evaluate projects.
- Frequency:
 - Daily: Belgium, France

- Weekly: Spain
 - Weekly/monthly: Poland
 - Monthly: UK
 - Monthly/yearly: Netherlands
 - Yearly: Germany
 - Importance:
 - Of major importance: UK, Belgium, Germany
 - Of major/some importance: Netherlands, Poland
 - Of some importance: Spain, France
12. Give advise on other construction designs, e.g. concerning building law and architectural style.
- Frequency:
 - Daily: Belgium, France
 - Daily/monthly: Poland
 - Weekly: Spain
 - Monthly: UK, Germany
 - Monthly/never: Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Germany
 - Of major/some importance: Poland
 - Of some importance: Spain, France, Netherlands

Almost all tasks are considered important in the different countries. Interestingly, there is much variation between countries and disagreement between experts within countries about the frequency of tasks. This could indicate that the frequency of tasks varies in daily practice.

Two tasks concerning construction projects never occur in the Netherlands: 'prepare a work planning for construction projects' and 'coordinate and administer construction projects'. In Germany, designing landscape near buildings is considered not important and occurs never or yearly.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the building architect differs between the countries:

- ISCED 3: Germany
- ISCED 5: Netherlands, UK
- ISCED 6: France

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Netherlands (established/laid down in branch or industry/by federal government)
- Certification (training / course): no countries
- Working according to a professional code or protocol: UK, Belgium (established/laid down in law or legal requirement), Poland
- Other formal or legal requirements: UK, Belgium (established/laid down in law or legal requirement), Spain (established/laid down in law or legal requirement), Netherlands (established/laid down by federal government), Poland

Competencies

The following competencies are of major importance for the building architect in the following countries (only major importance reported):

- Initiating action: UK, Belgium, Germany, Netherlands, Poland
- Instructing co-workers: UK, Germany, Poland
- Supervising: UK, Belgium, Germany, Poland
- Co-operating with colleagues: UK, Germany, Poland
- Communicating: UK, Belgium, Germany, Netherlands, Poland
- Relating and networking: UK, Belgium, Germany, Poland
- Negotiating: UK, Germany, Poland
- Reporting: UK
- Applying know-how, professional expertise: UK, Belgium, France, Germany, Netherlands, Poland
- Problem solving: UK, Belgium, Germany, Netherlands, Poland
- Developing new procedures and working methods: UK, Poland
- Forming strategies: UK, Germany, Poland
- Planning and organising: UK, Belgium, Germany, Netherlands, Poland
- Following instructions and procedures: UK, Germany, Poland
- Dealing with contingencies: UK, Belgium, Germany, Poland
- Coping with stressful situations: UK, Belgium, Germany, Poland
- Commercial thinking: UK, Belgium, Germany, Poland

Trends in size of occupations

Expected trends in the size of the occupation building architect differ between the countries:

- Increasing occupation size: Spain, Poland
- Increasing/decreasing occupation size: UK
- Stable occupation size: Belgium, France, Germany, Netherlands

3.13 Occupation Building construction helper

Data are available for the following countries:

- UK
- Spain
- France
- Netherlands
- Poland

Tasks building construction helper: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the building construction helper in the different countries are reported below:

1. Clear up construction sites by removing rubble and other waste, e.g. using wheelbarrows.
 - Frequency:
 - Daily: Spain, France
 - Daily/weekly: Poland
 - Daily/yearly: Netherlands
 - Weekly: UK
 - Importance:
 - Of major importance: Spain, France, Poland
 - Of major/no importance: Netherlands
 - Of some importance: UK
2. Load and unload building materials, machinery, tools etc. and move them to correct locations.
 - Frequency:
 - Daily: UK, Spain, France, Poland
 - Daily/yearly: Netherlands
 - Importance:
 - Of major importance: UK, Spain, France, Poland
 - Of some/no importance: Netherlands
3. Erect and disassemble temporary structures, such as scaffolding, shoring or traffic barricades.
 - Frequency:
 - Daily: Spain, France
 - Weekly: UK
 - Weekly/monthly: Netherlands
 - Weekly/never: Poland
 - Importance:
 - Of major importance: UK, Spain, France
 - Of some importance: Netherlands
 - Of no importance: Poland

4. Guide equipment operators by giving signals.
 - Frequency:
 - Daily: Spain
 - Daily/never: France, Poland
 - Weekly/never: Netherlands
 - Never: UK
 - Importance:
 - Of major importance: France, Poland
 - Of some importance: Spain, Netherlands
5. Operate construction site vehicles.
 - Frequency:
 - Daily: Spain
 - Daily/yearly: Netherlands
 - Weekly: UK
 - Never: France, Poland
 - Importance:
 - Of major importance: UK, Spain
 - Of no importance: Netherlands
6. Assist others in positioning, joining, aligning or sealing structural components, such as concrete wall sections and pipes.
 - Frequency:
 - Daily: Spain, France, Poland
 - Weekly: UK
 - Weekly/yearly: Netherlands
 - Importance:
 - Of major importance: UK, Spain, France, Poland
 - Of some importance: Netherlands
7. Dig holes, ditches, trenches, make excavations, and compact and level earth.
 - Frequency:
 - Daily: Spain, France, Poland
 - Weekly: UK
 - Weekly/never: Netherlands
 - Importance:
 - Of major importance: France, Netherlands, Poland
 - Of some importance: UK, Spain
8. Build, position and dismantle forms for pouring concrete.
 - Frequency:
 - Daily: Spain
 - Weekly: UK

- Weekly/never: Netherlands
 - Never: Poland
 - Importance:
 - Of major importance: UK, Spain, France
 - Of some importance: Netherlands
9. Tend or feed equipment, such as mixers, compressors and pumps.
- Frequency:
 - Daily: UK, Spain, France
 - Daily/never: Poland
 - Weekly/monthly: Netherlands
 - Importance:
 - Of major importance: France, Poland
 - Of major/some importance: Netherlands
 - Of some importance: UK, Spain
10. Mix, pour and spread materials (e.g., concrete, asphalt).
- Frequency:
 - Daily: UK, Spain, France
 - Daily/weekly: Poland
 - Monthly: Netherlands
 - Importance:
 - Of major importance: UK, Spain, France
 - Of major/some importance: Poland
 - Of some importance: Netherlands
11. Help others in the routine maintenance and repair of equipment.
- Frequency:
 - Daily: Spain, France
 - Weekly: UK
 - Weekly/never: Netherlands
 - Never: Poland
 - Importance:
 - Of major/some importance: France
 - Of some importance: UK, Spain, Netherlands

The importance of tasks of the building construction helper is fairly similar across countries. However, the frequency of these tasks vary within and between countries, because building construction helpers may perform different tasks depending on the type of construction project they are working on.

There is some disagreement about the task 'guide equipment operators by giving signals': in France, Poland and the Netherlands, some experts say this task never occurs, while other experts indicate this task occurs daily or weekly. In the Netherlands, there is some disagreement between experts about the frequency of the different tasks.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the building construction helper differs between the countries:

- ISCED 1: Netherlands
- ISCED 1/2: UK
- ISCED 2: France

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Netherlands (established/laid down in branch or industry/collective labour agreement)
- Certification (training / course): Netherlands (established/laid down in branch or industry)
- Working according to a professional code or protocol: Netherlands (established/laid down in collective labour agreement), Poland (established/laid down in branch or industry)
- Other formal or legal requirements: Netherlands (established/laid down in collective labour agreement)

Competencies

The following competencies are of major importance for the building construction helper in the following countries (only major importance reported):

- Initiating action: Netherlands, Poland
- Instructing co-workers: no countries
- Supervising: UK, France, Poland
- Co-operating with colleagues: UK, Netherlands, Poland
- Communicating: Netherlands, Poland
- Relating and networking: no countries
- Negotiating: no countries
- Reporting: no countries
- Applying know-how, professional expertise: UK, France, Netherlands
- Problem solving: no countries
- Developing new procedures and working methods: no countries
- Forming strategies: no countries

- Planning and organising: Netherlands
- Following instructions and procedures: UK, France, Netherlands, Poland
- Dealing with contingencies: Netherlands
- Coping with stressful situations: no countries
- Commercial thinking: no countries

Trends in size of occupations

Expected trends in the size of the occupation building construction helper differ between the countries:

- Declining occupation size: France
- Declining/increasing occupation size: Netherlands
- Stable/declining occupation size: Poland
- Stable occupation size: UK, Spain

3.14 Occupation Climatologist, metereologist

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks climatologist, metereologist: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the climatologist, metereologist in the different countries are reported below:

1. Gather meteorological data by surface, upper level and other measurements (including satellite cloud images, remote sensing data, radar and other information about atmospheric conditions).
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
2. Study and interpret relevant information (e.g., data, reports, maps, photographs, charts).
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland

- Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 3. Predict long- and short-range weather conditions using weather forecasting tools (e.g. computer models) and relevant knowledge (e.g., climate theory, physics, mathematics).
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 4. Produce weather reports and maps (e.g. for analysis, distribution, use in weather broadcasts).
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands
 - Weekly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany
 - Of major/some importance: Netherlands
 - Of some importance: Poland
- 5. Prepare forecasts and briefings for different types of audiences, such as the general public, industries (e.g. aviation, marine, fishing, farming, forestry), or government.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands
 - Of major/some importance: France
 - Of some importance: Poland
- 6. Broadcast weather conditions, forecasts, and weather warnings to the public via television, radio, and/or the Internet, and/or provide this information to the news media.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands
 - Of major/some importance: France, Poland
- 7. Apply meteorological knowledge to problems in areas including environment, agriculture, pollution control, and water management.
 - Frequency:
 - Daily: Spain, France, Germany
 - Monthly: UK

- Monthly/yearly: Poland
 - Yearly/never: Belgium
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands
 - Of major/some importance: France, Poland
 - Of some importance: Belgium
8. Conduct basic or applied meteorological research into the processes and determinants of atmospheric phenomena, weather, climate, etc.
- Frequency:
 - Daily: France, Germany, Poland
 - Daily/never: Belgium
 - Weekly/monthly: Netherlands
 - Monthly: UK, Spain
 - Importance:
 - Of major importance: UK, Germany
 - Of major/some importance: Spain, France, Poland
 - Of some importance: Belgium, Netherlands
9. Design and develop weather forecasting tools (e.g. mathematical and computer models).
- Frequency:
 - Daily: France, Germany
 - Daily/never: Belgium
 - Monthly: UK, Netherlands
 - Monthly/yearly: Spain
 - Never: Poland
 - Importance:
 - Of major importance: UK, Germany
 - Of major/some importance: Spain, France
 - Of some importance: Belgium, Netherlands
10. Maintain equipment and tools used to gather meteorological data.
- Frequency:
 - Daily: UK, France, Germany, Poland
 - Weekly: Spain
 - Never: Belgium, Netherlands
 - Importance:
 - Of major importance: UK, Germany
 - Of major/some importance: Poland
 - Of some importance: Spain, France

Most tasks occur daily and are of major importance for competent performance of the climatologist/metereologist. There is more variation with respect to frequency and importance between the countries with respect to the following tasks:

- Apply meteorological knowledge to problems in areas including environment, agriculture, pollution control, and water management.
- Conduct basic or applied meteorological research into the processes and determinants of atmospheric phenomena, weather, climate, etc.
- Design and develop weather forecasting tools (e.g. mathematical and computer models).
- Maintain equipment and tools used to gather meteorological data.

Another interesting finding is that the task 'produce weather reports and maps' occurs daily and of is of major importance in all countries except Poland (weekly and of some importance).

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the climatologist, metereologist differs between the countries:

- ISCED 3/4: Poland
- ISCED 4: France
- ISCED 5: Belgium, Netherlands
- ISCED 4/6: France

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Netherlands (established/laid down in law or legal requirement)
- Certification (training / course): no countries
- Working according to a professional code or protocol: Poland
- Other formal or legal requirements: UK, Belgium (established/laid down by federal government), Germany (established/laid down by law or legal requirement)

Competencies

The following competencies are of major importance for the climatologist, metereologist in the following countries (only major importance reported):

- Initiating action: Germany
- Instructing co-workers: France
- Supervising: Poland

- Co-operating with colleagues: Belgium, Germany, Poland
- Communicating: UK, Belgium, Germany, Poland
- Relating and networking: Belgium, France, Germany
- Negotiating: no countries
- Reporting: UK, France, Germany, Poland
- Applying know-how, professional expertise: UK, Belgium, France, Germany, Netherlands, Poland
- Problem solving: Belgium, France, Germany, Netherlands
- Developing new procedures and working methods: UK, France, Germany
- Forming strategies: no countries
- Planning and organising: France, Netherlands
- Following instructions and procedures: Belgium, Netherlands, Poland
- Dealing with contingencies: Belgium, France, Netherlands
- Coping with stressful situations: Belgium, France, Germany
- Commercial thinking: no countries

There are quite some differences with respect to the competencies that are of major importance for the occupation. Only 'applying know-how, professional expertise' is of major importance in almost all countries.

Trends in size of occupations

Expected trends in the size of the occupation climatologist, meteorologist differ between the countries:

- Stable/declining occupation size: Belgium
- Stable occupation size: France, Netherlands, Poland
- Increasing occupation size: UK, Spain, Germany

3.15 Occupation Concrete steel worker

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks concrete steel worker: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the concrete steel worker in the different countries are reported below:

1. Read and interpret work drawings and specifications.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of some importance: France
2. Prepare the work, for instance determine the required materials (quantity, size etc.).
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of some importance: France
3. Cut or saw steel bars or steel mesh in the required length.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
4. Bend steel bars or steel mesh in the required shape.
 - Frequency:
 - Daily: Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Monthly: Belgium
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
5. Assemble steel bars or steel mesh, e.g. by welding or using a steelfixer's pincer.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
6. Hoist steel bars, steel mesh and reinforcements into place.

- Frequency:
 - Daily: Belgium, Spain, Germany, Poland
 - Daily/weekly: UK, France, Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
7. Connect columns, beams, footings and girders.
- Frequency:
 - Daily: Belgium, Spain, Germany, Netherlands, Poland
 - Daily/weekly: UK, France
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of major/some importance: France
8. Position and fix reinforcements ready for concrete pour.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
9. Prepare the concrete, mixing sand, cement and water.
- Frequency:
 - Daily: Spain, France, Germany, Poland
 - Never: UK, Belgium, Netherlands
 - Importance:
 - Of major importance: Spain, France, Germany, Poland
10. Pour concrete in the concrete form.
- Frequency:
 - Daily: Spain, France, Germany, Poland
 - Never: UK, Belgium, Netherlands
 - Importance:
 - Of major importance: Spain, France, Germany, Poland
11. Maintain a safe and clean environment.
- Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: Belgium, Netherlands, Poland
 - Of major/some importance: UK, France, Germany
 - Of some importance: Spain

The tasks of the concrete steel worker are very similar in the different countries. There are some interesting differences with respect to the tasks 'prepare the concrete, mixing sand, cement and water' and 'Pour concrete in the concrete form'. These tasks occur on a daily basis in Spain, France, Germany and Poland, but are no part of the occupation in the UK, Belgium and the Netherlands.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the concrete steel worker differs between the countries:

- ISCED 1: UK
- ISCED 3: Germany, France, Netherlands

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): no countries
- Certification (training / course): UK, Netherlands
- Working according to a professional code or protocol: UK (established/laid down in collective labour agreement)
- Other formal or legal requirements: UK, Belgium (established/laid down in law or legal requirement), Germany (established/laid down in collective labour agreement), Poland (established/laid down in branch or industry)

Competencies

The following competencies are of major importance for the concrete steel worker in the following countries (only major importance reported):

- Initiating action: UK, Germany, Netherlands, Poland
- Instructing co-workers: Germany, Poland
- Supervising: Germany
- Co-operating with colleagues: UK, Belgium, France, Germany, Netherlands
- Communicating: UK, Belgium, Germany, Netherlands, Poland
- Relating and networking: UK, Poland
- Negotiating: no countries
- Reporting: Poland
- Applying know-how, professional expertise: UK, France, Germany, Netherlands, Poland
- Problem solving: UK, Germany, Netherlands
- Developing new procedures and working methods: UK

- Forming strategies: UK
- Planning and organising: UK, Belgium, Germany, Netherlands
- Following instructions and procedures: UK, Belgium, France, Germany, Netherlands, Poland
- Dealing with contingencies: Germany, Netherlands
- Coping with stressful situations: UK, Germany, Netherlands
- Commercial thinking: UK

Trends in size of occupations

Expected trends in the size of the occupation concrete steel worker differ between the countries:

- Increasing occupation size: UK
- Stable occupation size: Belgium, Spain, France, Germany, Netherlands, Poland

3.16 Occupation Electrical engineer

Data are available for the following countries:

- UK
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks electrical engineer: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the electrical engineer in the different countries are reported below:

1. Discuss existing or potential electrical engineering projects and products with relevant parties (engineers, customers etc.).
 - Frequency:
 - Daily: Spain, Germany
 - Daily/yearly: Poland
 - Weekly/monthly: Netherlands
 - Weekly/yearly: France
 - Monthly: UK
 - Importance:
 - Of major importance: UK, Netherlands, Poland
 - Of major/some importance: Germany
 - Of some importance: Spain, France
2. Prepare contract documents, e.g. for construction or maintenance.

- Frequency:
 - Daily/weekly: Spain, Germany
 - Daily/monthly: France
 - Daily/yearly: Poland
 - Yearly: Netherlands
 - Importance:
 - Of major importance: France, Netherlands
 - Of some importance: Spain, Germany, Poland
3. Design and improve electrical circuits, components, systems, equipment etc.
- Frequency:
 - Daily: Spain, France, Poland
 - Weekly: UK, Netherlands
 - Monthly: Germany
 - Importance:
 - Of major importance: UK, Spain, Netherlands, Poland
 - Of major/some importance: France, Germany
4. Prepare estimates for time and materials costs.
- Frequency:
 - Daily: France, Poland
 - Daily/weekly: Spain, Germany
 - Monthly: UK, Netherlands
 - Importance:
 - Of major importance: UK, Spain, France, Netherlands
 - Of major/some importance: Germany
 - Of some importance: Poland
5. Prepare specifications for purchase of materials and equipment.
- Frequency:
 - Daily: France, Poland
 - Daily/weekly: Germany
 - Weekly/monthly: Spain
 - Monthly: Netherlands
 - Importance:
 - Of major importance: France, Netherlands
 - Of major/some importance: Spain, Germany
 - Of some importance: Poland
6. Develop standards (e.g., installation, maintenance and operating standards) and specifications for electrical systems, equipment or products.
- Frequency:
 - Daily: France, Poland

- Daily/monthly: Germany
 - Monthly: UK, Spain, Netherlands
 - Importance:
 - Of major importance: UK, Netherlands, Poland
 - Of major/some importance: Spain, Germany
 - Of some importance: France
7. Implement and maintain electrical circuits, components, systems, equipment etc.
- Frequency:
 - Daily: Poland
 - Daily/monthly: Spain, Germany
 - Weekly: France
 - Monthly: Netherlands
 - Never: UK
 - Importance:
 - Of major importance: Spain, France, Netherlands, Poland
 - Of major/some importance: Germany
8. Supervise electrical engineering projects, e.g. installation, modification, testing and operation of electrical systems, equipment or products.
- Frequency:
 - Daily: UK, Germany, Netherlands, Poland
 - Daily/weekly: Spain
 - Daily/monthly: France
 - Importance:
 - Of major importance: UK, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
9. Inspect completed electrical systems, equipment or products.
- Frequency:
 - Daily: Spain, Poland
 - Daily/weekly: France, Germany
 - Monthly: UK, Netherlands
 - Importance:
 - Of major importance: UK, France, Germany, Netherlands, Poland
 - Of major/some importance: Spain
10. Investigate and solve technical failures.
- Frequency:
 - Daily: Spain, France, Netherlands, Poland
 - Daily/weekly: Germany
 - Monthly: UK
 - Importance:

- Of major importance: UK, Spain, France, Germany, Netherlands, Poland

The importance of the tasks of the electrical engineer is fairly similar among the different countries: in all countries, the tasks are of major or some importance. Only one task does not occur in the UK: 'implement and maintain electrical circuits, components etc.'. The countries do differ with respect to the frequency of the different tasks, varying mostly from daily in some countries and monthly in other countries.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries result in some changes in the EurOccupations standardised task list.

The following tasks of the EurOccupations standardised task list should be changed based on the comments of experts in 5 countries:

- Task 3 should be changed: 3. Design and improve electrical circuits, components, systems, equipment etc. → 3. Design, develop and improve electrical circuits, components, systems, equipment etc.
- Task 4 should be changed: 4. Prepare estimates for time and materials costs. → 4. Draw up plans for projects, prepare estimated for time and material costs.
- Task 6 should be changed: 6. Develop standards (e.g., installation, maintenance and operating standards) and specifications for electrical systems, equipment or products. → 6. Determine manufacturing methods of electrical products and systems, develop standards (e.g., installation, maintenance and operating standards) and specifications.
- Task 7 should be changed: 7. Implement and maintain electrical circuits, components, systems, equipment etc. → 7. Manage the implementation, operation and maintenance of electrical products and systems.

The following tasks should be added to the EurOccupations standardised task list based on the comments of experts in 5 countries:

- Undertake research into the electrotechnical behaviour of systems.
- Supervise the safe use of systems and components.

Required educational entry level

The required educational level of the electrical engineer is similar in most countries, except for France (higher educational level):

- ISCED 5: Belgium, Germany, Netherlands, UK
- ISCED 6: France

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): France (established/laid down in law or legal requirement), Germany (established/laid down in law or legal requirement), Netherlands (established/laid down in branch or industry), Poland
- Certification (training / course): Spain, Netherlands (established/laid down in branch or industry), Poland (established/laid down by federal government)
- Working according to a professional code or protocol: France (established/laid down in branch or industry), Netherlands (established/laid down in branch or industry), Poland
- Other formal or legal requirements: UK, Netherlands (established/laid down in branch or industry), Poland

Competencies

The following competencies are of major importance for the electrical engineer in the following countries (only major importance reported):

- Initiating action: UK, Spain, France, Germany, Netherlands, Poland
- Instructing co-workers: UK, Germany, Netherlands, Poland
- Supervising: UK, Germany, Poland
- Co-operating with colleagues: UK, Germany, Netherlands, Poland
- Communicating: UK, France, Germany, Netherlands, Poland
- Relating and networking: UK, Germany, Netherlands, Poland
- Negotiating: UK, France, Germany
- Reporting: UK, France, Netherlands, Poland
- Applying know-how, professional expertise: UK, Spain, France, Germany, Netherlands, Poland
- Problem solving: UK, Spain, France, Germany, Netherlands, Poland
- Developing new procedures and working methods: UK, Netherlands, Poland
- Forming strategies: Germany, Netherlands
- Planning and organising: UK, France, Germany, Netherlands
- Following instructions and procedures: UK, Spain, France, Poland
- Dealing with contingencies: UK, Spain, France, Germany, Netherlands, Poland
- Coping with stressful situations: UK, France, Germany, Netherlands, Poland
- Commercial thinking: UK, France, Germany

Trends in size of occupations

Expected trends in the size of the occupation electrical engineer differ between the countries:

- Increasing occupation size: UK, Spain, Netherlands, Poland
- Stable/increasing occupation size: France, Germany

3.17 Occupation First line supervisor, mechanics, installers or repairers

Data are available for the following countries:

- UK
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks first line supervisor, mechanics, installers or repairers: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the first line supervisor, mechanics, installers or repairers in the different countries are reported below:

1. Determine necessary installations, services and repairs, e.g. by analysing relevant information and examining objects, systems and facilities.
 - Frequency:
 - Daily: France, Germany
 - Daily/weekly: Spain, Poland
 - Daily/weekly/monthly: Netherlands
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
2. Determine schedules, sequences and assignments for work activities.
 - Frequency:
 - Daily: France, Germany, Poland
 - Daily/weekly: Spain
 - Weekly: UK, Netherlands
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
3. Give instructions to workers, e.g. work specifications, blueprints or job orders.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
4. Monitor and control work areas, tools and equipment.
 - Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands
 - Daily/weekly/never: Poland
 - Importance:

- Of major importance: UK, Spain, France, Germany, Poland
 - Of some importance: Netherlands
5. Monitor and review employees' work performance.
- Frequency:
 - Daily: UK, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
6. Participate in the work activities of mechanics, installers or repairers.
- Frequency:
 - Daily: UK, Spain, Germany
 - Weekly: Netherlands
 - Daily/weekly/never: Poland
 - Importance:
 - Of major importance: UK, Germany
 - Of major/some importance: Spain, Poland
 - Of some importance: France, Netherlands
7. Compute estimates and actual costs, for instance of materials, labour and outside contractors.
- Frequency:
 - Daily/weekly: Germany
 - Weekly: Spain
 - Monthly: UK, Netherlands
 - Monthly/weekly/yearly: Poland
 - Importance:
 - Of major importance: UK, Germany, Poland
 - Of major/some importance: Spain
 - Of some importance: France, Netherlands
8. Participate in budget preparation and administration, e.g. by monitoring departmental expenditures and coordinating purchasing.
- Frequency:
 - Daily/yearly: Germany
 - Weekly: Spain
 - Weekly/monthly/yearly: Netherlands
 - Monthly: UK
 - Yearly: Poland
 - Importance:
 - Of major importance: UK, Germany
 - Of major/some importance: Poland
 - Of some importance: Spain, France, Netherlands
9. Advise employees on work-related issues.

- Frequency:
 - Daily: UK, Spain, France, Germany, Poland
 - Weekly: Netherlands
 - Importance:
 - Of major importance: UK, Spain, France, Poland
 - Of major/some importance: Germany
 - Of some importance: Netherlands
10. Conduct or arrange training in job-related skills for workers.
- Frequency:
 - Daily/monthly: Germany
 - Monthly: UK, Spain, Netherlands, Poland
 - Importance:
 - Of major importance: UK, France
 - Of major/some importance: Spain, Germany
 - Of some importance: Netherlands, Poland

The tasks are very similar among the different countries with respect to frequency and importance. There is some variation with respect to the frequency for the following tasks:

- Compute estimates and actual costs, for instance of materials, labour and outside contractors: this is a daily or weekly task in Germany and Spain, and a monthly task in the UK and the Netherlands.
- Participate in budget preparation and administration, e.g. by monitoring departmental expenditures and coordinating purchasing: there is quite some variation between the countries with respect to frequency and experts disagree about the frequency in Germany and the Netherlands.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the first line supervisor, mechanics, installers or repairers differs between the countries:

- ISCED 3: Belgium, Italy, Netherlands, UK
- ISCED 3/4: Poland
- ISCED 3/5: Germany

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Germany (established/laid down in branch or industry), Netherlands (established/laid down in branch or industry/law or legal requirement), Poland (established/laid down in other way)
- Certification (training / course): Germany, Netherlands, Poland
- Working according to a professional code or protocol: Poland (established/laid down in other way)
- Other formal or legal requirements: no countries

Competencies

The following competencies are of major importance for the first line supervisor, mechanics, installers or repairers in the following countries (only major importance reported):

- Initiating action: UK, Spain, Germany, Netherlands, Poland
- Instructing co-workers: UK, Germany, Netherlands, Poland
- Supervising: UK, Germany, Netherlands, Poland
- Co-operating with colleagues: UK, Germany, Netherlands, Poland
- Communicating: UK, Germany, Netherlands, Poland
- Relating and networking: UK, Germany, Poland
- Negotiating: UK, Germany, Poland
- Reporting: UK, Germany
- Applying know-how, professional expertise: UK, Spain, France, Germany, Netherlands, Poland
- Problem solving: UK, Spain, Germany, Netherlands, Poland
- Developing new procedures and working methods: Germany, Poland
- Forming strategies: Germany, Poland
- Planning and organising: UK, Spain, France, Germany, Poland
- Following instructions and procedures: UK, Spain, France, Germany
- Dealing with contingencies: UK, Spain, France, Germany, Poland
- Coping with stressful situations: UK, France, Germany, Poland
- Commercial thinking: Germany

Most competencies are important in the UK, Spain, Germany, the Netherlands, Poland. In France, only a few competencies are considered to be of major importance. Another interesting results is that reporting, negotiating, forming strategies and commercial thinking are only of major importance in a few countries.

Trends in size of occupations

Expected trends in the size of the occupation first line supervisor, mechanics, installers or repairers differ between the countries:

- Increasing occupation size: Spain
- Stable/increasing occupation size: Germany

- Stable occupation size: UK, Netherlands, Poland

3.18 Occupation Interior decorator

Data are available for the following countries:

- UK
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks interior decorator: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the interior decorator in the different countries are reported below:

1. Confer with clients to obtain relevant information, e.g. about their budget, ideas and requirements.
 - Frequency:
 - Daily: Spain, France, Germany
 - Daily/weekly: Netherlands
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
2. Gather relevant information for the design, e.g. by taking measurements of the premises or by reading drawings.
 - Frequency:
 - Daily: Spain, Germany
 - Daily/weekly: France
 - Weekly: UK, Poland
 - Weekly/monthly: Netherlands
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
3. Make initial design sketches for client approval.
 - Frequency:
 - Daily: Spain, Germany
 - Daily/weekly: France
 - Weekly: UK
 - Weekly/monthly: Netherlands
 - Monthly: Poland

- Importance:
 - Of major importance: UK, Spain, France, Germany, Poland
 - Of major/some importance: Netherlands
- 4. Advise clients on interior decoration, e.g. selection of colour schemes, layout, lighting, furniture, floor coverings, curtains, paint, wallpaper and artwork.
 - Frequency:
 - Daily: Spain, France, Germany, Poland
 - Weekly: UK, Netherlands
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
- 5. Estimate materials requirements and costs.
 - Frequency:
 - Daily: Spain, France, Germany
 - Weekly: UK, Netherlands
 - Monthly: Poland
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands, Poland
 - Of major/some importance: France
- 6. Sell furnishings and furniture to clients.
 - Frequency:
 - Daily: Spain, Netherlands
 - Weekly: UK, France
 - Monthly: Poland
 - Never: Germany
 - Importance:
 - Of major/some importance: Netherlands
 - Of some importance: UK, Spain
 - Of no importance: France, Poland
- 7. Make a design, e.g. on a computer, and revise if necessary.
 - Frequency:
 - Daily: Spain, Germany
 - Weekly: UK, France, Poland
 - Weekly/monthly: Netherlands
 - Importance:
 - Of major importance: UK, Spain, Germany, Poland
 - Of major/some importance: Netherlands
 - Of some importance: France
- 8. Present the design to the client.
 - Frequency:

- Daily: Spain, Germany
 - Weekly: UK, France, Netherlands
 - Monthly: Poland
 - Importance:
 - Of major importance: UK, France, Germany, Netherlands, Poland
 - Of some importance: Spain
9. Coordinate the installation and arrangement of furnishings and furniture.
- Frequency:
 - Daily: UK, Spain, Germany
 - Daily/monthly: Netherlands
 - Weekly: France
 - Yearly: Poland
 - Importance:
 - Of major importance: UK, Spain, Germany
 - Of major/some importance: Netherlands
 - Of some importance: France
 - Of no importance: Poland

The tasks of the interior decorator are very similar in the different countries: most tasks occur on a frequent basis and are of major or some importance. There are some interesting differences:

- The task 'sell furnishings and furniture to clients' is only important in Spain, the Netherlands and the UK.
- The task 'coordinate the installation and arrangement of furnishings and furniture' is of no importance and occurs on a yearly basis in Poland.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries results in a minor change in the EurOccupations standardised task list. One task is added to this task list. For some specific countries, country-specific tasks are included in the national task list additionally.

The following task should be added to the EurOccupations standardised task list based on the comments of experts in various countries:

- Direct, order and monitor the realisation of the design and advise.

Required educational entry level

The required educational level of the interior decorator is fairly similar in the different countries:

- ISCED 3: Germany, Netherlands, UK
- ISCED 3/5: France

Only in France, experts differ with respect to their judgment of the minimum required educational level.

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): France, Netherlands
- Certification (training / course): France
- Working according to a professional code or protocol: no countries
- Other formal or legal requirements: no countries

Competencies

The following competencies are of major importance for the interior decorator in the following countries (only major importance reported):

- Initiating action: UK, France, Germany, Netherlands, Poland
- Instructing co-workers: no countries
- Supervising: no countries
- Co-operating with colleagues: Germany
- Communicating: UK, France, Germany, Netherlands, Poland
- Relating and networking: UK, Poland
- Negotiating: UK, France, Netherlands, Poland
- Reporting: UK, Poland
- Applying know-how, professional expertise: UK, Germany, Netherlands, Poland
- Problem solving: UK, Germany, Poland
- Developing new procedures and working methods: UK, Poland
- Forming strategies: Germany, Poland
- Planning and organising: UK, France, Germany, Netherlands
- Following instructions and procedures: France, Netherlands
- Dealing with contingencies: France, Netherlands
- Coping with stressful situations: Germany, Netherlands, Poland
- Commercial thinking: UK, France, Germany, Poland

Trends in size of occupations

Expected trends in the size of the occupation interior decorator are the same in the following countries:

- Increasing occupation size: UK, Spain, Germany, Netherlands

3.19 Occupation Master technician cars

Data are available for the following countries:

- UK
- Belgium
- Spain

- France
- Germany
- Netherlands
- Poland

Tasks master technician cars: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the master technician cars in the different countries are reported below:

1. Confer with clients or service advisors about faults or damage of the vehicle.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
2. Examine (parts of) vehicles to determine wear and the extent of faults or damage.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
3. Analyse and interpret defects.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
4. Discuss with clients about the work to be performed and (where applicable) future repair requirements.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Poland
 - Daily/weekly/never: Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of major/some importance: France
5. Carry out work specified to repair faults and damage of vehicles.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland

- Of some importance: France
- 6. Perform routine and scheduled maintenance services.
 - Frequency:
 - Daily: UK, Spain, Germany, Poland
 - Weekly/monthly/never: Netherlands
 - Never: Belgium, France
 - Importance:
 - Of major importance: UK, Spain, Germany, Poland
 - Of some importance: Netherlands
- 7. Control and test whether faults and damage are adequately repaired.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands, Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 8. Adjust repaired systems.
 - Frequency:
 - Daily: UK, Belgium, Spain, Germany, Poland
 - Weekly: Netherlands
 - Never: France
 - Importance:
 - Of major importance: UK, Belgium, Germany, Poland
 - Of some importance: Spain, France, Netherlands
- 9. Provide colleagues with technical support when necessary.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Poland
 - Of some importance: Netherlands
- 10. Assist the garage supervisor in recruiting qualified service technicians.
 - Frequency:
 - Daily: Germany
 - Daily/monthly/yearly: Spain
 - Monthly: UK
 - Yearly: Belgium, France, Netherlands
 - Importance:
 - Of major importance: Germany
 - Of major/some importance: Poland

- Of some importance: UK, Belgium, Spain, France, Netherlands
11. Ensure that the garage is in required condition regarding cleanliness, safety and equipment.
- Frequency:
 - Daily: UK, Germany, Netherlands, Poland
 - Daily/weekly/monthly: Spain
 - Weekly: Belgium
 - Monthly: France
 - Importance:
 - Of major importance: UK, Germany, Netherlands, Poland
 - Of some importance: Belgium, Spain, France

Almost all tasks of the master technician cars occur daily or weekly and are of major or some importance in all countries. Some interesting differences:

- In the Netherlands, there is some disagreement among experts with respect to the frequency of the task 'discuss with clients about the work to be performed and (where applicable) future repair requirements'.
- The task 'perform routine and scheduled maintenance services' is not a task of the master technician cars in Belgium and France, while it is a daily task in the other countries. Interestingly, the experts in the Netherlands disagree about the frequency of this task (weekly/monthly/never).
- With respect to the task 'assist the garage supervisor in recruiting qualified service technicians', there is some variation between the countries with respect to frequency. It is only considered a task of major importance in Germany.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the master technician cars differs between the countries:

- ISCED 1/3: UK
- ISCED 2: Germany
- ISCED 3: France, Netherlands

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): Germany (established/laid down in law or legal requirement), Netherlands (established/laid down in branch or industry), Poland
- Certification (training / course): Netherlands, Poland
- Working according to a professional code or protocol: Poland

- Other formal or legal requirements: UK (established/laid down in law or legal requirement), Poland

Competencies

The following competencies are of major importance for the master technician cars in the following countries⁷ (only major importance reported):

- Initiating action: Belgium, Spain, France, Netherlands, Poland
- Instructing co-workers: UK, Belgium, France, Poland
- Supervising: Belgium, France, Poland
- Co-operating with colleagues: Belgium, Netherlands, Poland
- Communicating: Belgium, France, Poland
- Relating and networking: no countries
- Negotiating: France, Poland
- Reporting: Belgium
- Applying know-how, professional expertise: UK, Belgium, Spain, France, Netherlands, Poland
- Problem solving: UK, Belgium, Spain, France, Netherlands, Poland
- Developing new procedures and working methods: France, Poland
- Forming strategies: France, Poland
- Planning and organising: UK, Belgium, France, Poland
- Following instructions and procedures: UK, Spain, France, Netherlands, Poland
- Dealing with contingencies: Spain, France, Netherlands, Poland
- Coping with stressful situations: France, Poland
- Commercial thinking: Poland

Applying know-how, professional expertise is a competency of major importance of the master technician cars in all countries. There are some interesting differences. E.g., communicating and supervising are only of major importance in Belgium, France and Poland. Also, forming strategies, negotiating and coping with stressful situations are only of major importance in France and Poland.

Trends in size of occupations

Expected trends in the size of the occupation master technician cars differ between the countries:

- Declining occupation size: Netherlands
- Increasing occupation size: UK, France
- Stable/increasing occupation size: Poland
- Stable occupation size: Belgium, Spain

Interestingly, only in the Netherlands the size of the occupation is expected to decrease.

⁷ Except Germany (no data available).

3.20 Occupation Refrigeration or airconditioning equipment erector

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks refrigeration or airconditioning equipment erector: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the refrigeration or airconditioning equipment erector in the different countries are reported below:

1. Prepare work activities, e.g. read and interpret blueprints and specifications, and gather the appropriate tools and materials.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Netherlands, Poland
 - Daily/never: Germany
 - Importance:
 - Of major importance: Belgium, Germany, Netherlands, Poland
 - Of major/some importance: UK, Spain, France
2. Preassemble refrigeration systems, for example by pre-treating pipes and installing switch boxes.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: UK
 - Weekly: Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands, Poland
 - Of major/some importance: UK
3. Finish (parts of) refrigeration systems, for example by installing re-encasings.
 - Frequency:
 - Daily: Belgium, Spain, Germany
 - Daily/weekly: UK, France
 - Weekly: Netherlands, Poland
 - Importance:
 - Of major importance: Belgium, Spain, Germany, Poland

- Of major/some importance: UK
 - Of some importance: France, Netherlands
4. Assemble structural and functional components of refrigeration systems using a variety of tools and techniques.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: UK, Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands, Poland
 - Of major/some importance: UK
5. Connect and install structural and functional components of refrigeration systems.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: UK, Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands, Poland
 - Of major/some importance: UK
6. Put refrigeration systems into operation (e.g. charge with refrigerant, adjust the thermostat and pressure control).
- Frequency:
 - Daily: Spain, Germany
 - Daily/weekly: UK, France
 - Weekly: Netherlands, Poland
 - Never: Belgium
 - Importance:
 - Of major importance: UK, Spain, France, Germany, Netherlands, Poland
7. Observe and test system operation using relevant tools and instruments.
- Frequency:
 - Daily: Spain, France, Germany
 - Daily/weekly: UK, Poland
 - Weekly: Netherlands
 - Never: Belgium
 - Importance:
 - Of major importance: UK, Spain, Germany, Netherlands, Poland
 - Of major/some importance: France
8. Dismantle (parts of) refrigeration systems.
- Frequency:
 - Daily: Spain, Germany
 - Daily/weekly: Netherlands

- Daily/monthly: UK
 - Weekly: France
 - Weekly/monthly: Poland
 - Importance:
 - Of major importance: Spain, Germany, Netherlands
 - Of major/some importance: UK, Poland
 - Of some importance: France
9. Register relevant information, for example by completing a log book or forms.
- Frequency:
 - Daily: Belgium, Spain, France, Netherlands
 - Daily/weekly: UK
 - Daily/never: Germany
 - Weekly/monthly: Poland
 - Importance:
 - Of major importance: Belgium, Germany, Netherlands
 - Of major/some importance: France, Poland
 - Of some importance: UK, Spain

The tasks of the refrigeration or airconditioning equipment erector are fairly similar across the different countries. There are some interesting differences with respect to the following tasks:

- Put refrigeration systems into operation (e.g. charge with refrigerant, adjust the thermostat and pressure control). This task is a daily/weekly and important task in all countries, except Belgium. In Belgium, this task never occurs.
- Observe and test system operation using relevant tools and instruments. This task is a daily/weekly and important task in all countries, except Belgium. In Belgium, this task never occurs.
- Register relevant information, for example by completing a log book or forms. There are some differences with respect to frequency and importance between the countries (see above).

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not directly result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

In Germany, the national experts indicate that this occupation does not exist in their country. Rather, the occupations *refrigeration or airconditioning equipment erector* and *refrigeration or airconditioning equipment mechanic* together form one, broader occupation in Germany, namely *Mechatroniker - Klimatechnik*. On the other hand, in the UK, the occupational structure for this type of work appears to be more refined. There, the occupation of *refrigeration or airconditioning equipment erector* actually comprises two different occupations, namely refrigeration installation engineer and airconditioning

installer. This implies that the occupational structure for this type of work differs between the countries.

Required educational entry level

The required educational level of the refrigeration or airconditioning equipment erector is similar in the different countries (except for Spain):

- ISCED 1: Spain
- ISCED 3: Germany, France, Italy, Netherlands, UK

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): no countries
- Certification (training / course): UK, France, Netherlands (established/laid down in branch or industry), Poland (established/laid down in law or legal requirement)
- Working according to a professional code or protocol: Poland
- Other formal or legal requirements: UK (established/laid down in law or legal requirement)

Competencies

The following competencies are of major importance for the refrigeration or airconditioning equipment erector in the following countries (only major importance reported):

- Initiating action: Spain, Germany, Poland
- Instructing co-workers: Germany, Poland
- Supervising: Germany, Poland
- Co-operating with colleagues: Germany, Poland
- Communicating: Germany, Poland
- Relating and networking: Poland
- Negotiating: Germany, Poland
- Reporting: Belgium, Germany, Poland
- Applying know-how, professional expertise: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Problem solving: UK, Spain, France, Germany, Poland
- Developing new procedures and working methods: UK, Poland
- Forming strategies: Germany, Poland
- Planning and organising: France, Germany, Poland
- Following instructions and procedures: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Dealing with contingencies: France, Germany, Poland
- Coping with stressful situations: France, Germany, Poland

- Commercial thinking: Germany, Poland

The competencies 'applying know-how, professional expertise' and 'following instructions and procedures' are of major importance in all countries. Most other competencies are only considered of major importance in Germany and Poland.

Trends in size of occupations

Expected trends in the size of the occupation refrigeration or airconditioning equipment erector differ between the countries:

- Increasing occupation size: Belgium, Spain, France, Poland
- Declining/increasing occupation size: UK
- Stable/increasing occupation size: Germany

3.21 Occupation Refrigeration of airconditioning equipment mechanic

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks refrigeration of airconditioning equipment mechanic: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the refrigeration of airconditioning equipment mechanic in the different countries are reported below:

1. Gather information about the functioning of the refrigeration system.
 - Frequency:
 - Daily: Belgium, Spain, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Daily/monthly: France
 - Importance:
 - Of major importance: Belgium, Spain, Germany, Netherlands, Poland
 - Of major/some importance: UK, France
2. Analyse and interpret the (malfunctioning) history of the system.
 - Frequency:
 - Daily: Belgium, Spain, Germany, Netherlands, Poland
 - Daily/weekly: UK

- Daily/monthly: France
 - Importance:
 - Of major importance: Belgium, Spain, Germany, Netherlands, Poland
 - Of major/some importance: UK, France
- 3. Check the state and condition of the refrigeration system.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands, Poland
 - Of major/some importance: UK
- 4. Perform preventive and corrective maintenance services, for example check and test leak detection devices, replace parts where necessary.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Weekly: Poland
 - Weekly/monthly: UK
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands, Poland
 - Of major/some importance: UK
- 5. Analyse and interpret defects in refrigeration systems.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: UK
 - Weekly: Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands, Poland
 - Of major/some importance: UK
- 6. Repair malfunctioning refrigeration systems.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: UK
 - Weekly: Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands
 - Of major/some importance: UK
 - Of some importance: Poland
- 7. Control and test whether defects are adequately repaired.
 - Frequency:

- Daily: Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: UK
 - Weekly: Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands, Poland
 - Of major/some importance: UK
8. Put refrigeration systems into operation (e.g. charge with refrigerant, adjust the thermostat and pressure control).
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: UK
 - Monthly: Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands
 - Of major/some importance: UK
 - Of some importance: Poland
9. Dismantle (parts of) refrigeration systems.
- Frequency:
 - Daily: Spain, France, Germany, Netherlands
 - Daily/monthly: UK
 - Yearly: Poland
 - Never: Belgium
 - Importance:
 - Of major importance: Spain, France, Germany, Netherlands
 - Of major/some importance: UK
 - Of some importance: Poland
10. Register relevant information, for example by completing a log book or forms.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Importance:
 - Of major importance: Belgium, France, Germany, Netherlands
 - Of some importance: UK, Spain, Poland

With respect to the frequency and importance of tasks of the refrigeration of airconditioning equipment mechanic, the countries are very similar. There are some differences between the countries with respect to the task 'dismantle (parts of) refrigeration systems'. This is a daily task in Spain, France, Germany, Netherlands, while it is a yearly task in Poland and never occurs in Belgium.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

In Germany, the national experts indicate that this occupation does not exist in their country. Rather, the occupations *refrigeration or airconditioning equipment erector* and *refrigeration or airconditioning equipment mechanic* together form one, broader occupation in Germany, namely *Mechatroniker - klimatechnik*. On the other hand, in the UK, the occupational structure for this type of work appears to be more refined. There, the occupation of *refrigeration or airconditioning equipment mechanic* actually comprises two different occupations, namely refrigeration service engineer and airconditioning fitter. This implies that the occupational structure for this type of work differs between the countries.

Required educational entry level

The required educational level of the refrigeration of airconditioning equipment mechanic is the same (ISCED 3) in the different countries:

- ISCED 3: Germany, France, Netherlands, UK

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): no countries
- Certification (training / course): UK (established/laid down in branch or industry), Germany, Netherlands, Poland
- Working according to a professional code or protocol: France (established/laid down in law or legal requirement), Poland
- Other formal or legal requirements: UK, Belgium (established/laid down in law or legal requirement)

Competencies

The following competencies are of major importance for the refrigeration of airconditioning equipment mechanic in the following countries (only major importance reported):

- Initiating action: Belgium, France, Germany, Netherlands, Poland
- Instructing co-workers: Germany, Poland
- Supervising: Germany, Poland
- Co-operating with colleagues: Germany, Poland
- Communicating: Belgium, Germany, Netherlands
- Relating and networking: no countries
- Negotiating: Germany
- Reporting: Belgium, France, Germany, Netherlands, Poland

- Applying know-how, professional expertise: UK, Belgium, France, Germany, Netherlands
- Problem solving: UK, Belgium, France, Germany, Netherlands, Poland
- Developing new procedures and working methods: France, Poland
- Forming strategies: no countries
- Planning and organising: France, Germany, Poland
- Following instructions and procedures: UK, Belgium, France, Germany, Poland
- Dealing with contingencies: UK, Belgium, France, Germany, Netherlands, Poland
- Coping with stressful situations: Germany, Netherlands, Poland
- Commercial thinking: Germany

Competencies that are of major importance in almost all countries are: initiating action, reporting, applying know-how, professional expertise, problem solving, following instructions and procedures and dealing with contingencies.

Trends in size of occupations

Expected trends in the size of the occupation refrigeration of airconditioning equipment mechanic differ somewhat between the countries:

- Increasing occupation size: Belgium, Spain, France, Germany
- Declining/increasing occupation size: UK

3.22 Occupation Roofer bitumous operator

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks roofer bitumous operator: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the roofer bitumous operator in the different countries are reported below:

1. Read and interpret drawings and specifications.
 - Frequency:
 - Daily: Belgium, Spain, Germany, Netherlands, Poland
 - Weekly/monthly: UK
 - Importance:

- Of major importance: UK, Belgium, Spain, Germany, Netherlands, Poland
 - Of some importance: France
2. Inspect materials and equipment.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Daily/never: UK
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain
3. Take necessary safety measures, for instance using scaffolding and traffic barricades.
- Frequency:
 - Daily: Belgium, France, Germany, Netherlands, Poland
 - Daily/weekly: UK
 - Weekly: Spain
 - Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain
4. Clear roof and inspect for irregularities and damage.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Poland
 - Daily/weekly: UK, Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Netherlands, Poland
 - Of major/some importance: Germany
5. Remove or demolish (parts of) the roof construction, such as existing covering and old layers.
- Frequency:
 - Daily: Belgium, Spain, France, Germany
 - Daily/weekly: UK, Netherlands
 - Weekly: Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands
 - Of some importance: UK, Poland
6. Repair (parts of) the roof construction.
- Frequency:
 - Daily: Belgium, Spain, France, Germany
 - Daily/weekly: UK
 - Weekly: Netherlands, Poland
 - Importance:

- Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
7. Apply layers of insulation and damp-proofing to the roof surface.
- Frequency:
 - Daily: Belgium, Spain, France, Germany
 - Daily/weekly: UK, Netherlands
 - Weekly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
8. Apply bitumen, hot asphalt, synthetic materials or related materials to the roof surface using techniques such as burning, blowing, gluing and spreading.
- Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands
 - Daily/weekly: UK
 - Weekly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
9. Install roof details, such as roof windows and pipes.
- Frequency:
 - Daily: Belgium, Spain, France, Germany
 - Daily/weekly: UK, Netherlands
 - Weekly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
10. Finish off the roof, e.g. by applying a ballast layer of gravel or pebbles.
- Frequency:
 - Daily: Belgium, Spain, France, Germany
 - Daily/weekly: Netherlands
 - Weekly: UK
 - Never: Poland
 - Importance:
 - Of major importance: Belgium, Spain, France, Germany, Netherlands
 - Of major/some importance: UK
11. Conduct periodic maintenance of flat roofs.
- Frequency:
 - Daily: Belgium, France, Germany

- Weekly: Netherlands, Poland
- Monthly: Spain
- Yearly: UK
- Importance:
 - Of major importance: UK, Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain

The frequency and importance of tasks of the roofer bitumous operator are very similar across the different countries. There are some interesting differences:

- The task 'finish off the roof' occurs daily/weekly in the different countries, except for Poland. In Poland, this task never occurs.
- The frequency of the task 'conduct periodic maintenance of flat roofs' varies from yearly in the UK to daily in Belgium, France and Germany.

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the roofer bitumous operator differs between the countries:

- ISCED 1: UK
- ISCED 1/3: Netherlands
- ISCED 2/3: France
- ISCED 3: Germany

There also is some disagreement about the minimum required educational level between experts in the Netherlands and France.

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): no countries
- Certification (training / course): Germany, Netherlands, Poland
- Working according to a professional code or protocol: UK, Poland (established/laid down in branch or industry)
- Other formal or legal requirements: UK, Germany (established/laid down in branch or industry)

Competencies

The following competencies are of major importance for the roofer bitumous operator in the following countries (only major importance reported):

- Initiating action: Germany
- Instructing co-workers: UK, Germany, Poland
- Supervising: UK, Germany, Poland
- Co-operating with colleagues: Belgium, Germany, Netherlands, Poland
- Communicating: UK, Germany, Netherlands
- Relating and networking: Germany
- Negotiating: Germany
- Reporting: UK, Germany
- Applying know-how, professional expertise: UK, Belgium, France, Germany, Netherlands, Poland
- Problem solving: UK, Belgium, Germany
- Developing new procedures and working methods: Germany
- Forming strategies: Germany
- Planning and organising: Germany
- Following instructions and procedures: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Dealing with contingencies: UK, Belgium, France, Germany
- Coping with stressful situations: Germany
- Commercial thinking: Germany

Competencies that are considered of major importance in almost all countries are applying know-how, professional expertise and following instructions and procedures. Surprisingly, in Germany all competencies are considered of major importance.

Trends in size of occupations

Expected trends in the size of the occupation roofer bitumous operator differ between the countries:

- Stable/increasing occupation size: UK
- Stable occupation size: Spain, Germany, Netherlands, Poland

3.23 Occupation Roofer

Data are available for the following countries:

- UK
- Belgium
- Spain
- France
- Germany
- Netherlands
- Poland

Tasks roofer: frequency and importance of competent performance

The frequency and importance of competent performance of all tasks of the roofer in the different countries are reported below:

1. Prepare drawings and specifications of the roof.
 - Frequency:
 - Daily: Spain, France, Germany
 - Weekly/monthly: Poland
 - Never: UK, Belgium, Netherlands
 - Importance:
 - Of major importance: Spain, France, Germany
 - Of major/some importance: Poland
2. Read and interpret drawings and specifications.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Monthly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
3. Inspect materials and equipment.
 - Frequency:
 - Daily: Belgium, France, Germany, Netherlands
 - Daily/weekly: Poland
 - Weekly: Spain
 - Never: UK
 - Importance:
 - Of major importance: Belgium, France, Germany, Netherlands, Poland
 - Of some importance: Spain
4. Take necessary safety measures, for instance using scaffolding and traffic barricades.
 - Frequency:
 - Daily: UK, Belgium, Spain, France, Germany, Netherlands
 - Weekly: Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
5. Remove roof materials such as tiles or slates and demolish (parts of) the roof construction.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Poland

- Weekly: UK Netherlands
 - Importance:
 - Of major importance: Belgium, Germany, Poland
 - Of major/some importance: Netherlands
 - Of some importance: UK, Spain, France
- 6. Repair (parts of) the roof construction.
 - Frequency:
 - Daily: Belgium, Spain, Germany, Poland
 - Daily/monthly: France
 - Weekly: UK
 - Monthly: Netherlands
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 7. Prepare the roof for tiling by applying roof insulation, roof rafters, lead etc.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 8. Cover roof with tiles, slates or related materials using various techniques.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 9. Measure and cut roofing materials to fit, e.g. around vents, chimney edges and the hips and valleys of the roof.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands, Poland
 - Weekly: UK
 - Importance:
 - Of major importance: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- 10. Install roof fittings, such as gutters, pipes and roof windows.
 - Frequency:
 - Daily: Belgium, Spain, France, Germany, Netherlands

- Weekly: UK Poland
 - Importance:
 - Of major importance: UK, Belgium, Spain, Germany, Netherlands
 - Of major/some importance: Poland
 - Of some importance: France
11. Conduct periodic maintenance of sloped roofs.
- Frequency:
 - Daily: Belgium
 - Daily/weekly: Germany
 - Daily/yearly: France
 - Monthly: Spain, Netherlands, Poland
 - Yearly: UK
 - Importance:
 - Of major importance: UK, Belgium, France, Netherlands, Poland
 - Of major/some importance: Germany
 - Of some importance: Spain

The frequency and importance of tasks of the roofer are very similar across the different countries.

There are some interesting differences:

- The task 'prepare drawings and specifications of the roof' is a daily task in Spain, France, Germany, a weekly/monthly task Poland and never occurs in the UK, Belgium and the Netherlands.
- The task 'inspect materials and equipment' is a daily/weekly task in all countries except the UK. In the UK, this is never a task of the roofer.
- The frequency of the task 'conduct periodic maintenance of sloped roofs' varies between the countries. It is a task of major or some importance in all countries, although it does not occur very frequently in all countries (monthly in Spain, the Netherlands, Poland, yearly in the UK).

Suggested changes to the task list

The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Required educational entry level

The required educational level of the roofer is the same in the different countries, except the UK (lower level):

- ISCED 1: UK
- ISCED 3: Germany, France, Netherlands

Additional formal or legal requirements

In some countries, there are additional formal or legal requirements for this occupation:

- Diploma (full educational programme): France, Netherlands (established/laid down in branch or industry)
- Certification (training / course): Germany, Netherlands, Poland (established/laid down in law or legal requirement)
- Working according to a professional code or protocol: Germany (established/laid down in law or legal requirement), Poland (established/laid down in branch or industry)
- Other formal or legal requirements: UK

Competencies

The following competencies are of major importance for the roofer in the following countries (only major importance reported):

- Initiating action: France, Germany, Netherlands
- Instructing co-workers: Germany, Netherlands, Poland
- Supervising: France, Germany, Netherlands, Poland
- Co-operating with colleagues: Belgium, France, Germany, Netherlands, Poland
- Communicating: France, Germany, Netherlands, Poland
- Relating and networking: Netherlands
- Negotiating: Germany, Netherlands
- Reporting: France, Germany, Netherlands
- Applying know-how, professional expertise: UK, Belgium, Spain, France, Germany, Netherlands, Poland
- Problem solving: Spain, France, Germany, Netherlands, Poland
- Developing new procedures and working methods: France, Germany, Netherlands, Poland
- Forming strategies: Germany, Netherlands
- Planning and organising: France, Germany, Netherlands, Poland
- Following instructions and procedures: UK, Belgium, France, Germany, Netherlands, Poland
- Dealing with contingencies: France, Germany, Netherlands, Poland
- Coping with stressful situations: France, Germany, Netherlands, Poland
- Commercial thinking: Germany, Netherlands

Competencies that are considered of major importance in almost all countries are applying know-how, professional expertise and following instructions and procedures.

Trends in size of occupations

Expected trends in the size of the occupation roofer differ between the countries:

- Increasing occupation size: UK France Netherlands
- Stable/declining occupation size: Poland
- Stable/increasing occupation size: Germany



- Stable occupation size: Spain

3.24 Occupation Mechanical engineering technician

Data are available for the following countries:

- Spain
- Netherlands
- Poland

The mechanical engineering technician is one of the additional key occupations, for which the EurOccupations partners did not actively recruit experts. Therefore, information is lacking for several countries.

For the tables presenting the frequencies of the occupation characteristics from the expert research, we refer to the EurOccupations website

(<http://www.euroccupations.org/main/researchlab/deliverables>).

4. Revisions of the EurOccupations task descriptions

For most key occupations in this cluster of occupations, the input of various experts in the web enquiry does not result in changes in the EurOccupations standardised task descriptions. For all key occupations, nonetheless, *country-specific* tasks are added. These additional, country-specific tasks are included in the EurOccupations key occupations database. For some key occupations, the expert enquiry did however result in changes in the available task descriptions (see section 4.1) or additional tasks that should be added to the EurOccupations standardised task description (see section 4.2). Finally, experts have provided language-related comments to several tasks descriptions that are discussed in section 4.3.

4.1 Suggested changes in the EurOccupations standardised task descriptions

Electrical engineer:

The following tasks of the EurOccupations standardised task list should be changed based on the comments of experts in 5 countries:

- Task 3 should be changed: 3. Design and improve electrical circuits, components, systems, equipment etc. → 3. Design, develop and improve electrical circuits, components, systems, equipment etc.
- Task 4 should be changed: 4. Prepare estimates for time and materials costs. → 4. Draw up plans for projects, prepare estimated for time and material costs.
- Task 6 should be changed: 6. Develop standards (e.g., installation, maintenance and operating standards) and specifications for electrical systems, equipment or products. → 6. Determine manufacturing methods of electrical products and systems, develop standards (e.g., installation, maintenance and operating standards) and specifications.
- Task 7 should be changed: 7. Implement and maintain electrical circuits, components, systems, equipment etc. → 7. Manage the implementation, operation and maintenance of electrical products and systems.

4.2 Additional tasks that should be added to the EurOccupations standardised task list

Electrical engineer:

The following tasks should be added to the EurOccupations standardised task list based on the comments of experts in 5 countries:

- Undertake research into the electrotechnical behaviour of systems.
- Supervise the safe use of systems and components.

Car mechanic:

The following tasks should be added to the EurOccupations standardised task list based on the comments of experts in various countries:

- Fit and service accessories like radios and alarms.
- Diagnose electrical and mechanical faults and determine solutions.

Construction bricklayer:

The following task should be added to the EurOccupations standardised task list based on the comments of experts in various countries:

- Place different kinds of vaults.

Interior decorator:

The following task should be added to the EurOccupations standardised task list based on the comments of experts in various countries:

- Direct, order and monitor the realisation of the design and advise.

4.3 Language related comments on the task descriptions

Electrical engineer:

- In the Polish task description the words 'obieg elektryczny' should be replaced by 'obwód elektryczny'.

Climatologist, meteorologist:

- In the Netherlands, the word 'voorspellingen' should be replaced by 'verwachtingen'.

Interior decorator:

- In the Netherlands, in task 9, the word 'woningdecoratie' should be replaced by 'accessoires'.

Rofer bitumous operator:

- In the UK, several tasks should be altered due to an incorrect use of words, namely task 7 and 8. The correct task descriptions are:
 - 7. Apply layers of insulation and waterproofing / waterproofing systems to the roof surface.
 - 8. Apply reinforced bitumen membranes (RBMs) in hot bitumen, lay hot mastic asphalt, synthetic membranes or related materials to the roof surface using techniques including bonding, torching, spreading, and sealing of laps'.

Concrete steel worker:

- In the UK, several tasks should be altered due to an incorrect use of words, namely task 3 and 4. The correct task descriptions are:
 - 3. Cut and saw steel bars as detail requires.
 - 4. Bend steel bars as detail requires.

Road paviour, jack hammer operator:

- In the Netherlands, several tasks should be altered due to an incorrect use of words, namely task 7 and 8. The correct task descriptions are:
 - 7. Bestraat met tegels en stenen, maakt daarbij gebruik van verschillende technieken en gereedschappen (bijv. hand- en mechanisch gereedschap).
 - 8. Trilt of stampt de bestrating zodat het gelijkmatig verdicht is, bijv. met behulp van een trilmachine.

Car mechanic:

- In the Netherlands, task 5 should be altered due to an incorrect use of words: 'plant werkzaamheden' → 'plant eigen werkzaamheden'.



5. Required national educational levels

To be written by the cluster coordinator. The Dutch team will provide the analyses.

6. Problematic occupations

Civil engineering technician:

Based on the comments and suggestions as provided by the experts, this key occupation appears to be quite problematic. The experts are confused to what this occupational title and the standardised task description apply. For example, in Germany, only tasks 5 and 6 of the standardised task description appear to apply for this occupation, while in other countries, more tasks are considered to be relevant, even though there is quite some variation between the countries concerning the frequency and importance of the tasks. Among the experts, there appears to be confusion and discussion concerning the occupational boundaries between the following occupations: civil engineering technician, civil engineer and architect. It should be investigated more thoroughly what the correct occupations and occupational titles in this field of work are and which task descriptions are appropriate.

Carpenter:

An interesting finding for the occupation of carpenter is that it is not problematic in the majority of the countries, with the exception of Germany. German experts indicate that due to e.g. technological change and the use of new materials in the occupation, the EurOccupations task list is not sufficiently up-to-date and that the task list should be revised. This should be investigated in more detail, see for example www.EVH.eu (the European Federation of Timber Construction).

Refrigeration or airconditioning equipment erector:

This occupation is problematic because the occupational structure for this type of work appears to differ between Germany, the UK and the other countries. In Germany, the national experts indicate that this occupation does not exist in their country. Rather, the occupations *refrigeration or airconditioning equipment erector* and *refrigeration or airconditioning equipment mechanic* together form one, broader occupation in Germany, namely *Mechatroniker - klimatechnik*. On the other hand, in the UK, the occupational structure for this type of work appears to be more refined. There, the occupation of *refrigeration or airconditioning equipment erector* actually comprises two different occupations, namely refrigeration installation engineer and airconditioning installer.

Refrigeration or airconditioning equipment mechanic:

This occupation is problematic because the occupational structure for this type of work appears to differ between Germany, the UK and the other countries. In Germany, the national experts indicate that this occupation does not exist in their country. Rather, the occupations *refrigeration or airconditioning equipment erector* and *refrigeration or airconditioning equipment mechanic* together form one, broader occupation in Germany, namely *Mechatroniker - klimatechnik*. On the other hand, in the UK, the occupational structure for this type of work appears to be more refined. There, the occupation of *refrigeration or airconditioning equipment mechanic* actually comprises two different

occupations, namely refrigeration service engineer and airconditioning fitter. This implies that the occupational structure for this type of work differs between the countries.

House painter:

Interesting to note is that both German and Dutch experts indicate that the occupation of *house painter* comprises several specialisations. This does not directly result in proposed changes in the EurOccupations key and extended list of occupations.

Plumber:

In Germany, there appears to be confusion about the correct occupational title for this occupation: either 'Anlagenmechaniker/in für Sanitär-, Heizungs- und Klimatechnik' or 'Klempner/in'. For the German case, the task list appears to be out of date. This should be investigated more thoroughly.

Road paviour:

Even though the tasks that are included in the EurOccupations standard task list are considered to be important and part of the duties of a road paviour in all countries under study, several experts mention that the EurOccupations standardised task list does not do justice to the occupation of road paviour and should be further developed. Therefore, this task description should be revised. How the task description should be revised has to be investigated more thoroughly, since the various experts from the different countries give quite varying suggestions.

7. Proposed revisions for the EurOccupations extended list of occupations

7.1 Changes in occupational structure in the extended and key list

Refrigeration or airconditioning equipment erector:

- In the UK, this occupation should be separated into 2 occupations/occupational titles, namely 'refrigeration installation engineer' and 'airconditioning installer'.
- In Germany, this occupation should be merged with the occupation of 'refrigeration or airconditioning equipment mechanic' into 1 occupation/occupational title, namely 'Mechatroniker – klimatechnik'.

Refrigeration or airconditioning equipment mechanic:

- In the UK, this occupation should be separated into 2 occupations/occupational titles, namely 'refrigeration service engineer' and 'airconditioning fitter'.
- In Germany, this occupation should be merged with the occupation of 'refrigeration or airconditioning equipment erector' into 1 occupation/occupational title, namely 'Mechatroniker – klimatechnik'.

7.2 Adjustments in occupational titles in the extended and key list:

Garage supervisor:

- NL adjust occupational title: chef werkplaats → chef werkplaats motorvoertuigen

Electrical engineer:

- UK adjust occupational title: electrical engineer → electrical engineer (professional)
- DE adjust occupational title: Elektroingenieur/in → Ingenieur/in Elektrotechnik (allgemeine Elektrotechnik)
- NL adjust occupational title: Elektrisch ingenieur → electrotechnisch ingenieur

Building structure engineer:

- UK adjust occupational title: building structure engineer → structural engineer

Car mechanic:

- UK adjust occupational title: car mechanic → vehicle technician

First line supervisor of mechanics, installers, or repairers:

- UK adjust occupational title: first line supervisor of mechanics, installers, or repairers → engineering maintenance supervisor

Climatologist/metereologist:

- DE adjust occupational title: Klimaforscher/in → Meteorologe/Meteorologin

Building architect:

- UK adjust occupational title: building architect → architect
- NL adjust occupational title: architect → bouwkundig architect

Building construction helper:

- UK adjust occupational title: building construction helper → Construction operative

Construction bricklayer:

- UK adjust occupational title: Construction bricklayer → bricklayer

Refrigeration or airconditioning equipment erector:

- UK adjust occupational title: refrigeration or airconditioning equipment erector → refrigeration installation engineer
- DE adjust occupational title: Kälte- und Klimaanlage-monteur/in → Mechatroniker - climatechnik

Refrigeration or airconditioning equipment mechanic:

- UK adjust occupational title: refrigeration or airconditioning equipment mechanic → refrigeration service engineer
- DE adjust occupational title: Kälte- und Klimaanlage-mechaniker/in → Mechatroniker - climatechnik

House painter:

- DE adjust occupational title: Maler/in → Maler/in und Lackiererin Fachrichtung Gestaltung und Instandhaltung

Interior decorator:

- UK adjust occupational title: interior decorator → interior designer
- DE adjust occupational title: Raumgestalter/in → Raumausstatter/in

Tile setter/tile layer:

- UK adjust occupational title: tile setter/tile layer → tile layer

Plumber:

- DE adjust occupational title: Klempner/in → Anlagenmechaniker/in für Sanitär-, Heizungs- und Klimatechnik

Roofer bitumous operator:

- UK adjust occupational title: Roofer bitumous operator → felt roofer

Concrete steel worker:

- UK adjust occupational title: concrete steel worker → steel fixer
- DE adjust occupational title: Stahlbetonbauer/in → Beton- und Stahlbetonbauer/in

Road paviour, jack hammer operator:

- UK adjust occupational title: road paviour, jack hammer operator → road paviour
- DE adjust occupational title: Strassenbauer/in → Pflasterer/in.

8. Conclusions and discussion

This chapter describes the main conclusion from the EurOccupations expert research for the cluster 'construction & cars'. First, some general findings are discussed. Second, a brief summary of the findings per key occupation in the cluster 'construction & cars' is presented.

8.1 General findings

EurOccupations task descriptions

In general, the EurOccupations task descriptions of the key occupations in the cluster 'construction & cars' are recognised by the experts. For most key occupations, a majority of tasks occurs on a frequent basis and is important for competent performance. There are some differences between countries, but it never occurs that tasks do not occur in any of the countries.

Required educational entry level

Only for a limited number of countries (usually 4 or 5 countries per occupation), data is available about the minimum required educational entry level for the key occupations. These levels do seem to vary across countries quite often. E.g., occupations (e.g. garage supervisor, electrical mechanic or fitter, construction bricklayer, carpenter, house painter) are often ISCED level 1 in the UK, while they are ISCED level 3 in other countries. Also, there sometimes appears to be disagreement between experts of the same country concerning required education entry level. This indicates that for experts, it is quite difficult to assess occupations concerning educational entry levels. It might be better to provide estimates of actual educational levels of occupational workers in the occupation.

Formal or legal requirements

Additional formal or legal requirements for key occupations in construction and cars are quite frequent in the Netherlands, Germany and Poland. The other countries demand fewer requirements for these occupations.

Competencies

- Applying know-how, professional expertise is considered a competency of major importance for almost all key occupations in almost all countries in the construction and cars cluster (except for Spain).
- Following instructions and procedures is an important competency for many key occupations in the construction and cars cluster (mainly the 'operational' occupations of ISCED-level 3 or lower).
- In Poland and Germany, several competencies are important for quite some occupations in constructions and cars that are not important in other countries, e.g. instructing co-workers,

communicating, relating and networking, developing new procedures and working methods, forming strategies.

Trends in size of occupations

There are quite some differences between countries and between experts with respect to expected trends in size of the occupation.

8.2 Summary of results per key occupation

The summary of results focuses mainly on the EurOccupations task descriptions and competencies of the key occupations.

Garage supervisor

- The tasks of the garage supervisor are fairly similar across the different countries. There are some differences with respect to the tasks 'repair, maintain and service vehicles' (occurs daily/weekly in most countries, never in Poland), 'make sure the vehicle is returned to the owner in a clean and decent state' (occurs daily in most countries, never in the Netherlands), and 'provide information for staff about the latest developments, technical specifications of new cars, garage merchandise' (daily task in France, Germany and Poland, monthly task in the UK and the Netherlands).
- An interesting result is that in Poland, several competencies are very important that are not important in other countries, namely: reporting, forming strategies and dealing with contingencies.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Electrical mechanic or fitter

- The tasks of the electrical mechanic or fitter are fairly similar across the 7 countries. Most tasks are of major importance in the different countries, and are performed on a daily or weekly basis. The Belgian experts, however, do not seem to agree about the frequency of some tasks: e.g., one expert indicates that the task 'Perform scheduled preventative maintenance tasks' occurs monthly, while the other indicates this task never occurs. With respect to the task 'Repair and adjust equipment, machines etc.', one expert indicates this task occurs weekly, while the other indicates it occurs monthly.
- An interesting result is that in Poland and Germany, several competencies are very important that are not important in other countries, namely: instructing co-workers, communicating, relating and networking, developing new procedures and working methods, forming strategies.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list.

Civil engineering technician

- An interesting finding with respect to the tasks of the civil engineering technician is that the frequency differs quite substantially between countries. In addition, there is not much agreement among experts from a particular country with respect to the frequency of tasks (e.g., for some tasks, one expert from a country indicates never while the other expert indicates daily). This may indicate that the occupation may in fact comprise more occupations with different sets of tasks. However, experts do seem to agree that competent performance of all tasks is important for the civil engineering technician – although the tasks do not all occur frequently.
- Based on the comments and suggestions as provided by the experts, this key occupation appears to be quite problematic. The experts are confused to what this occupational title and the standardised task description apply. For example, in Germany, only tasks 5 and 6 of the standardised task description appear to apply for this occupation, while in other countries, more tasks are considered to be relevant, even though there is quite some variation between the countries concerning the frequency and importance of the tasks. Among the experts, there appears to be confusion and discussion concerning the occupational boundaries between the following occupations: civil engineering technician, civil engineer and architect. It should be investigated more thoroughly what the correct occupations and occupational titles in this field of work are and which task descriptions are appropriate.
- Especially in Poland, there are additional formal or legal requirements for this occupation.
- Interestingly, certain competencies (e.g. developing new procedures and working methods, forming strategies) are only important for the civil engineering technician in Poland.

Car mechanic

- The tasks of the car mechanic are fairly similar across the different countries. With respect to the task 'carry out minor body and trim repairs', there are differences between countries and some more disagreement between experts within a country.
- The following tasks should be added to the EurOccupations standardised task list based on the comments of experts in various countries:
 - Fit and service accessories like radios and alarms.
 - Diagnose electrical and mechanical faults and determine solutions.
- Some competencies are only important in one or a few countries (e.g., commercial thinking, planning and organising), while others are important in almost all countries (e.g. applying know-how, professional expertise). Especially Germany seems to deviate from other countries with respect to the relevant competencies (several competencies are only important in Germany).

Construction bricklayer

- In general, the frequency and importance of tasks is similar in the different countries. However, Spain diverges from the other countries: most tasks are performed on a monthly basis in Spain,

while they are performed on a daily/weekly basis in the other countries. With respect to some tasks, there are substantial differences between countries: e.g., erecting scaffolding occurs daily in Germany and Poland, while it occurs weekly or monthly in the Netherlands, France, Belgium and Spain, and even never in the UK.

- Following instructions and procedures is a very important competency in all countries. Some other competencies are only relevant in one country, e.g. developing new procedures and working methods in France and relating and networking in Poland. Interestingly, co-operating with colleagues is not important in Spain and France, while it is of major importance in the other countries.
- The comments and suggestions as provided by the experts in the various countries results in a minor change in the EurOccupations standardised task list. One task is added to this task list. For some specific countries, country-specific tasks are included in the national task list additionally. The following task should be added to the EurOccupations standardised task list based on the comments of experts in various countries:
 - Place different kinds of vaults.

Carpenter

- The tasks of the carpenter are very similar across the different countries: in almost all countries, all tasks occur daily and are of major importance.
- The comments and suggestions as provided by the experts in the various countries do not directly result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list. Specifically, German experts indicate that due to e.g. technological change and the use of new materials in the occupation, the EurOccupations task list is not sufficiently up-to-date and that the task list should be revised. This should be investigated in more detail, see for example www.EVH.eu (the European Federation of Timber Construction).
- There are some interesting differences between countries with respect to the competencies: e.g. only in Poland, supervising and instructing co-workers is a competency of major importance. Especially in the UK, Germany and the Netherlands, the same competencies are important.

House painter

- The tasks of the house painter are very similar across the different countries with respect to frequency and importance of competent performance. Interestingly, erecting scaffolding, supports, ladders etc. is never a task in UK, while it is a daily/weekly task in the other countries. We found the same difference for the occupation construction bricklayer.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

- Interestingly, certain competencies revolving around communicating, instructing and co-operating are only of major importance in Germany, the Netherlands and Poland.
- Both German and Dutch experts indicate that the occupation of *house painter* comprises several specialisations.

Tile setter, tile layer

- Almost all tasks occur daily and are of major importance in all countries. Interestingly, carrying out specialised tiling work (e.g. stairs, mosaic, patterns) is only a daily task in Spain, Germany, Poland. Also, conducting repair and renovation work on tiling only is a daily task in Spain and Germany. Competent performance of these two tasks is considered to be of major importance in all countries (except specialised tiling work, which is of some importance in France): only the frequency varies.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- Interestingly, competencies such as co-operating, communicating and instructing are only of major importance in Germany and Poland.

Plumber

- The tasks of the plumber are very similar across the different countries. With respect to keeping records and producing work reports, there are some differences in frequency (daily task in Belgium, France, Germany, weekly task in UK, Spain, Netherlands, Poland).
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- Interestingly, competencies such as co-operating, communicating and instructing are only of major importance in Germany, the Netherlands and Poland.
- In Germany, there appears to be confusion about the correct occupational title for this occupation: either 'Anlagenmechaniker/in für Sanitär-, Heizungs- und Klimatechnik' or 'Klempner/in'. For the German case, the task list appears to be out of date. This should be investigated more thoroughly.

Road paviour

- The tasks of the road paviour are very similar in the different countries. There is some variation with respect to the task determining and supplying base materials, which is never a task in the UK and a daily task in Germany. In the Netherlands, experts disagree whether it is a daily task or never a task of the road paviour. There is also disagreement in the Netherlands with respect to the task 'determine the paver layout pattern and create markings', which is a daily task according to 3 experts yet never a task according to 3 other experts. In Germany, there is disagreement about the importance of all tasks.

- Several experts mention that the EurOccupations standardised task list does not do justice to the occupation of road paviour and should be developed further. Therefore, this task description should be revised. How the task description should be revised has to be investigated more thoroughly, since the various experts from the different countries give quite varying suggestions.
- All competencies are considered of major importance in Poland. In the other countries, applying know-how, professional expertise and co-operating with colleagues are the most important competencies.

Building structure engineer

- Almost all tasks are considered important in the different countries (except for a few tasks in Poland, which never occur in this country). Interestingly, there is much variation between countries and disagreement between experts within countries about the frequency of tasks. This could indicate that the frequency of tasks varies in daily practice.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Building architect

- Almost all tasks are considered important in the different countries. Interestingly, there is much variation between countries and disagreement between experts within countries about the frequency of tasks. This could indicate that the frequency of tasks varies in daily practice. Two tasks concerning construction projects never occur in the Netherlands: 'prepare a work planning for construction projects' and 'coordinate and administer construction projects'. In Germany, designing landscape near buildings is considered not important and occurs never or yearly.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Building construction helper

- The importance of tasks of the building construction helper is fairly similar across countries. However, the frequency of these tasks vary within and between countries, because building construction helpers may perform different tasks depending on the type of construction project they are working on. There is some disagreement about the task 'guide equipment operators by giving signals': in France, Poland and the Netherlands, some experts say this task never occurs, while other experts indicate this task occurs daily or weekly. In the Netherlands, there is some disagreement between experts about the frequency of the different tasks.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Climatologist, meteorologist

- Most tasks occur daily and are of major importance for competent performance of the climatologist/meteorologist. There is more variation with respect to frequency and importance between the countries with respect to the following tasks:
 - Apply meteorological knowledge to problems in areas including environment, agriculture, pollution control, and water management.
 - Conduct basic or applied meteorological research into the processes and determinants of atmospheric phenomena, weather, climate, etc.
 - Design and develop weather forecasting tools (e.g. mathematical and computer models).
 - Maintain equipment and tools used to gather meteorological data.
- Another interesting finding is that the task 'produce weather reports and maps' occurs daily and of major importance in all countries except Poland (weekly and of some importance).
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- There are quite some differences with respect to the competencies that are of major importance for the occupation. Only 'applying know-how, professional expertise' is of major importance in almost all countries.

Concrete steel worker

- The tasks of the concrete steel worker are very similar in the different countries. There are some interesting differences with respect to the tasks 'prepare the concrete, mixing sand, cement and water' and 'Pour concrete in the concrete form'. These tasks occur on a daily basis in Spain, France, Germany and Poland, but are no part of the occupation in the UK, Belgium and the Netherlands.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.

Electrical engineer

- The importance of the tasks of the electrical engineer is fairly similar among the different countries: in all countries, the tasks are of major or some importance. Only one task does not occur in the UK: 'implement and maintain electrical circuits, components etc.'. The countries do differ with respect to the frequency of the different tasks, varying mostly from daily in some countries and monthly in other countries.

- The comments and suggestions as provided by the experts in the various countries result in some changes in the EurOccupations standardised task list. The following tasks of the EurOccupations standardised task list should be changed based on the comments of experts in 5 countries:
- 9. Task 3 should be changed: 3. Design and improve electrical circuits, components, systems, equipment etc. → 3. Design, develop and improve electrical circuits, components, systems, equipment etc.
- 10. Task 4 should be changed: 4. Prepare estimates for time and materials costs. → 4. Draw up plans for projects, prepare estimated for time and material costs.
- 11. Task 6 should be changed: 6. Develop standards (e.g., installation, maintenance and operating standards) and specifications for electrical systems, equipment or products. → 6. Determine manufacturing methods of electrical products and systems, develop standards (e.g., installation, maintenance and operating standards) and specifications.
- 12. Task 7 should be changed: 7. Implement and maintain electrical circuits, components, systems, equipment etc. → 7. Manage the implementation, operation and maintenance of electrical products and systems.

The following tasks should be added to the EurOccupations standardised task list based on the comments of experts in 5 countries:

- Undertake research into the electrotechnical behaviour of systems.
- Supervise the safe use of systems and components.

First line supervisor, mechanics, installers or repairers

- The tasks are very similar among the different countries with respect to frequency and importance. There is some variation with respect to the frequency for the following tasks:
 - Compute estimates and actual costs, for instance of materials, labour and outside contractors: this is a daily or weekly task in Germany and Spain, and a monthly task in the UK and the Netherlands.
 - Participate in budget preparation and administration, e.g. by monitoring departmental expenditures and coordinating purchasing: there is quite some variation between the countries with respect to frequency and experts disagree about the frequency in Germany and the Netherlands.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- Most competencies are important in the UK, Spain, Germany, the Netherlands, Poland. In France, only a few competencies are considered to be of major importance. Another interesting results is that reporting, negotiating, forming strategies and commercial thinking are only of major importance in a few countries.

Interior decorator

- The tasks of the interior decorator are very similar in the different countries: most tasks occur on a frequent basis and are of major or some importance. There are some interesting differences:
 - The task 'sell furnishings and furniture to clients' is only important in Spain, the Netherlands and the UK.
 - The task 'coordinate the installation and arrangement of furnishings and furniture' is of no importance and occurs on a yearly basis in Poland.
- The comments and suggestions as provided by the experts in the various countries results in a minor change in the EurOccupations standardised task list. One task is added to this task list. For some specific countries, country-specific tasks are included in the national task list additionally. The following task should be added to the EurOccupations standardised task list based on the comments of experts in various countries:
 - Direct, order and monitor the realisation of the design and advise.

Master technician cars

- Almost all tasks of the master technician cars occur daily or weekly and are of major or some importance in all countries. Some interesting differences:
 - In the Netherlands, there is some disagreement among experts with respect to the frequency of the task 'discuss with clients about the work to be performed and (where applicable) future repair requirements'.
 - The task 'perform routine and scheduled maintenance services' is not a task of the master technician cars in Belgium and France, while it is a daily task in the other countries. Interestingly, the experts in the Netherlands disagree about the frequency of this task (weekly/monthly/never).
 - With respect to the task 'assist the garage supervisor in recruiting qualified service technicians', there is some variation between the countries with respect to frequency. It is only considered a task of major importance in Germany.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- Applying know-how, professional expertise is a competency of major importance of the master technician cars in all countries. There are some interesting differences. E.g., communicating and supervising are only of major importance in Belgium, France and Poland. Also, forming strategies, negotiating and coping with stressful situations are only of major importance in France and Poland.

Refrigeration or airconditioning equipment erector

- The tasks of the refrigeration or airconditioning equipment erector are fairly similar across the different countries. There are some interesting differences with respect to the following tasks:

- Put refrigeration systems into operation (e.g. charge with refrigerant, adjust the thermostat and pressure control). This task is a daily/weekly and important task in all countries, except Belgium. In Belgium, this task never occurs.
- Observe and test system operation using relevant tools and instruments. This task is a daily/weekly and important task in all countries, except Belgium. In Belgium, this task never occurs.
- Register relevant information, for example by completing a log book or forms. There are some differences with respect to frequency and importance between the countries.
- The comments and suggestions as provided by the experts in the various countries do not directly result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- The competencies 'applying know-how, professional expertise' and 'following instructions and procedures' are of major importance in all countries. Most other competencies are only considered of major importance in Germany and Poland.
- In Germany, the national experts indicate that this occupation does not exist in their country. Rather, the occupations refrigeration or airconditioning equipment erector and refrigeration or airconditioning equipment mechanic together form one, broader occupation in Germany, namely Mechatroniker - klimatechnik. On the other hand, in the UK, the occupational structure for this type of work appears to be more refined. There, the occupation of refrigeration or airconditioning equipment erector actually comprises two different occupations, namely refrigeration installation engineer and airconditioning installer. This implies that the occupational structure for this type of work differs between the countries.

Refrigeration of airconditioning equipment mechanic

- With respect to the frequency and importance of tasks of the refrigeration of airconditioning equipment mechanic, the countries are very similar. There are some differences between the countries with respect to the task 'dismantle (parts of) refrigeration systems'. This is a daily task in Spain, France, Germany, Netherlands, while it is a yearly task in Poland and never occurs in Belgium.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- Competencies that are of major importance in almost all countries are: initiating action, reporting, applying know-how, professional expertise, problem solving, following instructions and procedures and dealing with contingencies.
- In Germany, the national experts indicate that this occupation does not exist in their country. Rather, the occupations *refrigeration or airconditioning equipment erector* and *refrigeration or airconditioning equipment mechanic* together form one, broader occupation in Germany, namely *Mechatroniker - klimatechnik*. On the other hand, in the UK, the occupational structure for this

type of work appears to be more refined. There, the occupation of *refrigeration or airconditioning equipment mechanic* actually comprises two different occupations, namely refrigeration service engineer and airconditioning fitter. This implies that the occupational structure for this type of work differs between the countries.

Roofer bitumous operator

- The frequency and importance of tasks of the roofer bitumous operator are very similar across the different countries. There are some interesting differences:
 - The task 'finish off the roof' occurs daily/weekly in the different countries, except for Poland. In Poland, this task never occurs.
 - The frequency of the task 'conduct periodic maintenance of flat roofs' varies from yearly in the UK to daily in Belgium, France and Germany.
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- Competencies that are considered of major importance in almost all countries are applying know-how, professional expertise and following instructions and procedures. Surprisingly, in Germany all competencies are considered of major importance.

Roofer

- The frequency and importance of tasks of the roofer are very similar across the different countries. There are some interesting differences:
 - The task 'prepare drawings and specifications of the roof' is a daily task in Spain, France, Germany, a weekly/monthly task Poland and never occurs in the UK, Belgium and the Netherlands.
 - The task 'inspect materials and equipment' is a daily/weekly task in all countries except the UK. In the UK, this is never a task of the roofer.
 - The frequency of the task 'conduct periodic maintenance of sloped roofs' varies between the countries. It is a task of major or some importance in all countries, although it does not occur very frequently in all countries (monthly in Spain, the Netherlands, Poland, yearly in the UK).
- The comments and suggestions as provided by the experts in the various countries do not result in changes in the EurOccupations standardised task list. For some specific countries, country-specific tasks are included in the national task list.
- Competencies that are considered of major importance in almost all countries are applying know-how, professional expertise and following instructions and procedures.



Appendix A Additional analyses EurOccupations data 'construction & cars'

NB all available information from part 2 of the expert questionnaire has to be reported on in this appendix on an aggregate level (area of work and country-level), as provided by Yves de Weerd. Also include relevant information from the open text boxes of the different countries.



Appendix B Occupation questionnaire for experts

EXPERT QUESTIONNAIRE KEY OCCUPATION [OCCUPATIONAL TITLE]

This questionnaire includes questions on the content of the occupation [insert occupational title]. Some questions might be difficult to answer. If you do not know the answer to certain questions, you can mark the box 'I don't know'.

Short description of the occupation

[Insert short description]

1. Do you currently work in this occupation?

- Yes
 No

2. If any, what alternative job titles are used in your country for [insert occupational title] (max. of 3 job titles, please include those most frequently used)?

- 1.....
 2.....
 3.....

Below, the main tasks of this occupation are suggested. Please note that these task descriptions are preliminary. They are based on international deskresearch. You are more than welcome to provide comments and suggestions to revise the task list.

Suggested tasks:

1. [Insert task 1]
 2. [Insert task 2]
 3. [Insert task 3]
 4. [Insert task 4]
 5. [Insert task 5]
 6. [Insert task 6]
 7. [Insert task 7]
 8. [Insert task 8]
 9. [Insert task 9]
 10. [Insert task 10]
 11. [Insert task 11]
 12. [Insert task 12]

3. Are any key tasks missing in the task list?

- 1.....
 2.....
 3.....

Room for comments on the task list

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

4. Could you indicate for each of the tasks how frequently the task is performed (never or on a daily, weekly, monthly or yearly basis)?

	Never	Yearly	Monthly	Weekly	Daily	I don't know
1. [Insert task 1]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. [Insert task 2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. [Insert task 3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. [Insert task 4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. [Insert task 5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. [Insert task 6]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. [Insert task 7]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. [Insert task 8]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. [Insert task 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. [Insert task 10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. [Insert task 11]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. [Insert task 12]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. How important is competent performance of this task in this occupation?

	Not at all important	Of some importance	Of major importance	I don't know
1. [Insert task 1]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. [Insert task 2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. [Insert task 3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. [Insert task 4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. [Insert task 5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. [Insert task 6]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. [Insert task 7]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. [Insert task 8]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. [Insert task 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. [Insert task 10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. [Insert task 11]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. [Insert task 12]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. What is the required educational entry level for this occupation in your country? Please note that the required educational entry level may differ from the average educational level of the people working in an occupation. We ask you to tick the required educational entry level. You can mark more than 1 box.

<input type="checkbox"/> [insert country-specific education categories]
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

7a. Are there additional formal or legal requirements for this occupation?

- Yes, namely:
- diploma (full educational programme) → *question 7b*
 - certification (training / course) → *question 7c*
 - working according to a professional code or protocol → *question 7d*
 - other, please specify → *question 7e*
- No → *question 8*
- I don't know

7b. How are the additional diploma requirements established/laid down?

- collective labour agreement
- law/legal requirement
- federal government
- branch of industry
- other, please specify.....
- I don't know

7c. How are the additional certification (training/course) requirements established/laid down?

- collective labour agreement
- law/legal requirement
- federal government
- branch of industry
- other, please specify.....
- I don't know

7d. How are the additional professional code or protocol requirements established/laid down?

- collective labour agreement
- law/legal requirement
- federal government
- branch of industry
- other, please specify.....
- I don't know

7e. How are the additional other requirements established/laid down?

- collective labour agreement
- law/legal requirement
- federal government
- branch of industry
- other, please specify.....
- I don't know

8. We want to know more about the transferability of skills. Therefore, we would like to know the relevance of the competencies mentioned below for this occupation.⁸

	Not at all important	Of some importance	Of major importance	I don't know
A Initiating action	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Instructing co-workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Supervising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Co-operating with colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Communicating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Relating and networking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Negotiating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Reporting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Applying know-how, professional expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Problem solving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Developing new procedures and working methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Forming strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Planning and organising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N Following instructions and procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O Dealing with contingencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P Coping with stressful situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q Commercial thinking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Do you expect the size of this occupation (how many people are working in the occupation) to decline, increase or remain stable in the next 5 years?

<input type="checkbox"/> Declining occupation size <input type="checkbox"/> Stable occupation size <input type="checkbox"/> Increasing occupation size <input type="checkbox"/> I don't know

⁸ The list of competencies is based on the SHL Competency Framework (Bartram, D. (2005). The great eight competencies: A criterion-centric approach to validation. *Journal of Applied Psychology*, 90 (6): 1185-1203).

PART 2 EXPERT QUESTIONNAIRE (OPTIONAL)

11. How many subordinates do people working in this occupation, in general, formally supervise (*EXCLUDING* the coaching of less experienced co-workers, students or trainees)?

- none
- 1 – 10 employees
- 11 – 100 employees
- > 100 employees
- I don't know

12. How often does the work involve coaching or training of less experienced co-workers, students or trainees (*EXCLUDING* the subordinates that are formally supervised)?

- Regularly
- Occasionally
- Never
- It varies
- I don't know

13. How much physical effort is generally required in this occupation?

- Not at all
- Some
- Much
- I don't know

14. How much mental effort is generally required in this occupation?

- Not at all
- Some
- Much
- I don't know

15. Is organising part of the work in this occupation?

- Yes, it involves the organisation of personnel/staff
- Yes, it involves the organisation of equipment/material
- Yes, it involves the organisation of both personnel/staff and equipment/material
- No
- I don't know

16. Which of these categories best describes the use of computers required in this occupation?

- Not at all
- Routine (e.g., word processing, spreadsheets and/or e-mail)
- Complex (e.g., for gathering/analysing information, design)
- Advanced (e.g., programming, IT development)
- I don't know

17. When can people start working in this occupation?

- Immediately after completing formal education
- Via in-company dual-learning trajectories after completing formal education
- Via apprenticeships
- Other, namely.....
- I don't know

18. How long does it generally take, after completing the required formal education, to become competent in this occupation?

- | | |
|---|--|
| <input type="checkbox"/> Up to 1 week | <input type="checkbox"/> 6 months – 1 year |
| <input type="checkbox"/> 1 week – 1 month | <input type="checkbox"/> 1 – 5 years |
| <input type="checkbox"/> 1 – 3 months | <input type="checkbox"/> ≥ 5 years |
| <input type="checkbox"/> 3 – 6 months | <input type="checkbox"/> I don't know |

19. How often do people working in this occupation have to update their knowledge and skills?

- Never
- Yearly
- Monthly
- Weekly
- Daily
- I don't know

20. Are you familiar with the European Qualification Framework?

- Yes → go to question 21
- No → go to question 24

21. Which of the following descriptions characterises the level of knowledge of this occupation best?⁹ Tick one box only. *If you do not know the answer to this question, you can select the box 'I don't know'.*

This occupation requires:

- ... basic general knowledge
- ... basic factual knowledge of a field of work
- ... knowledge of facts, principles, processes and general concepts, in a field of work
- ... factual and theoretical knowledge in broad contexts within a field of work
- ... comprehensive, specialised, factual and theoretical knowledge within a field of work and an awareness of the boundaries of that knowledge
- ... advanced knowledge of a field of work, involving a critical understanding of theories and principles
- ... highly specialised knowledge of a field of work and critical awareness of knowledge issues in a field and at the interface between different fields
- ... knowledge at the most advanced frontier of a field of work and at the interface between fields
- I don't know

22. Which of the following descriptions characterises the skill level of this occupation best?¹⁰ Tick one box only. *If you do not know the answer to this question, you can select the box 'I don't know'.*

Definition:

Cognitive skills: use of logical, intuitive and creative thinking

Practical skills: involving manual dexterity and the use of methods, materials, tools and instruments

This occupation requires:

- ... basic skills required to carry out simple tasks
- ... basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools
- ... a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information
- ... a range of cognitive and practical skills required to generate solutions to specific problems in a field of work
- ... a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems
- ... advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work
- ... specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields
- ... the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice

⁹ This question is based on the European Qualification Framework.

¹⁰ This question is based on the European Qualification Framework.

I don't know

23. Which of the following descriptions characterises the level of responsibility and autonomy of this occupation best?¹¹ Tick one box only. If you do not know the answer to this question, you can select the box 'I don't know'.

This occupation involves:

- ... working under direct supervision in a structured context
- ... working under supervision with some autonomy
- ... taking responsibility for completion of tasks and adapting own behaviour to circumstances in solving problems
- ... exercising self-management within the guidelines of work contexts that are usually predictable, but are subject to change and supervising the routine work of others, taking some responsibility for the evaluation and improvement of work activities
- ... exercising management and supervision in work contexts where there is unpredictable change and review and develop performance of self and others
- ... managing complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work contexts and taking responsibility for managing professional development of individuals and groups
- ... managing and transforming work contexts that are complex, unpredictable and require new strategic approaches and taking responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
- ... demonstrating substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work contexts including research
- I don't know

We now want to ask some questions about expected changes and developments in the occupation.

24. Do you expect the content of this occupation to change within the next 5 years?

- Yes, in the following way:.....
.....
- No
- I don't know

25. Do you expect the educational requirements for this occupation to change within the next 5 years?

- Yes, in the following way:
.....
- No
- I don't know

¹¹ This question is based on the European Qualification Framework.



Appendix C Education questionnaire for experts

EXPERT QUESTIONNAIRE EDUCATIONAL REQUIREMENTS

This questionnaire includes question on the educational requirements of occupations. Earlier, you have indicated your areas of expertise.

1. For how many occupations in your area(s) of expertise are you willing to indicate the required educational entry level?

- 5
- 10
- 15
- 20
- 25

Experts will answer the question below for a random selection of occupations in their area(s) of work, the number based on their answer to the question above.

2. What is the required educational entry level for these occupations in your country? Please note that the required educational entry level may differ from the average educational level of the people working in an occupation. We ask you to tick the required educational entry level.

COUNTRY SPECIFIC CODING SHEET

Thanks very much for your time and effort!!!



Appendix D Occupational workers questionnaire

QUESTIONNAIRE '[occupational title]' FOR OCCUPATIONAL WORKERS

YOUR OCCUPATION [OCCUPATIONAL TITLE]

Below, a number of tasks of your occupation is suggested. Please note that these task descriptions are preliminary. They are based on international deskresearch. You are more than welcome to provide comments and suggestions to revise the task list.

Suggested tasks:

Insert task 1 Insert task 2 Insert task 3 Insert task 4 Insert task 5 Insert task 6 Insert task 7 Insert task 8 Insert task 9 Insert task 10

1. Are any key tasks missing in the task list?

1..... 2..... 3..... If respondents add tasks in this question, these tasks will automatically be included in questions 2, 3 and 4.
--

Room for comments on the task list

.....

2. Could you indicate for each of the tasks how frequently the task is performed (never or on a daily, weekly, monthly or yearly basis)?

	Never	Yearly	Monthly	Weekly	Daily	I don't know
16. [Insert task 1]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. [Insert task 2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. [Insert task 3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. [Insert task 4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. [Insert task 5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. [Insert task 6]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. [Insert task 7]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. [Insert task 8]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. [Insert task 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. [Insert task 10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. [Insert task 11]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. [Insert task 12]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. How important is competent performance of this task in this occupation?

	Not at all important	Of some importance	Of major importance	I don't know
16. [Insert task 1]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. [Insert task 2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. [Insert task 3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. [Insert task 4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. [Insert task 5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. [Insert task 6]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. [Insert task 7]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. [Insert task 8]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. [Insert task 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. [Insert task 10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. [Insert task 11]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. [Insert task 12]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

.....				
-------	--	--	--	--

4. Is the task mainly performed under direct supervision of others or autonomous?

	Mainly under direct supervision	Mainly <i>not</i> under direct supervision	I don't know
1. [Insert task 1]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. [Insert task 2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. [Insert task 3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. [Insert task 4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. [Insert task 5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. [Insert task 6]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. [Insert task 7]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. [Insert task 8]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. [Insert task 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. [Insert task 10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. [Insert task 11]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. [Insert task 12]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. What is your educational level?

<input type="checkbox"/> COUNTRY SPECIFIC CODING SHEET (NB DIFFERENT CODING SHEET THAN EXPERT WEBSURVEY!!)
--

6. Does your education level match the required education level?

<input type="checkbox"/> Yes → go to question 9
<input type="checkbox"/> No → go to question 7
<input type="checkbox"/> I don't know → go to question 8

7. What is the required educational entry level for this occupation in this country? You can mark more than 1 box.

COUNTRY SPECIFIC CODING SHEET REQUIRED EDUCATION (NB SAME CODING SHEET AS EXPERT WEBSURVEY!!)

8. Do you consider yourself under- or overqualified for the job?

<input type="checkbox"/> I am underqualified for the job
<input type="checkbox"/> I am overqualified for the job

I don't know

9. How important is labour experience for adequate performance of your job?

- Not at all important
- Of some importance
- Of major importance
- I don't know

10. Do you expect the content of this occupation to change within the next 5 years?

- Yes, in the following way:.....
- No
- I don't know

YOUR CAREER

11. What year did you start your first job?

..... (year)

12. How many times have you changed your employer since (including temporary jobs and self-employment)?

- Never
- 1-2 times
- 3-4 times
- 5-6 times
- 7 times or more
- I don't know

13. In which year did you join your current employer or did you start your business? If the name of your company has changed, please include the period of time you spent with the company also when its name was different.

..... (year)

We are interested in your working conditions and the nature of your employment relationship. Therefore, we would like to ask you the following questions.

14. In your job, do you mainly work in a team or mainly individually?

- Mainly in a team
- Mainly individually
- It varies

15. Are you an employee or self-employed?

- Employee
- Self-employed

16. How are you paid?

- Monthly salary plus performance
- Monthly salary only
- Weekly wage
- Hourly paid
- Piecework
- Other, namely.....

17. Do you have a pay scale with increments, either automatic or performance related?

- Yes
- No
- I don't know

18. If you want to quit your job, how much notice do you have?

- None
- Less than 1 week
- 1 week or over but less than 1 month
- 1 month or more but less than 3 months
- 3 months or more
- I don't know

19. Who decides what time you start and leave work?

- My supervisor decides
- I decide without limitations
- I decide with limitations

20. Do you have opportunities for promotion or career developments either within your organisation or by changing employer?

- Yes
- No
- I don't know

GENERAL

21. What is your year of birth?

19.....

22. What is your gender?



<input type="checkbox"/> Male <input type="checkbox"/> Female
--

23. Do you have any additional comments?

.....

24. A number of prizes is offered in a drawing among the participants of this survey. Do you want to be enrolled in this drawing?

<input type="checkbox"/> Yes, e-mail address:..... <input type="checkbox"/> No

Thanks very much for your time and effort!!!



Appendix E Partner occupation questionnaire

PARTNER QUESTIONNAIRE KEY OCCUPATION [OCCUPATIONAL TITLE]

This questionnaire includes questions on the content of the occupation [insert occupational title]. Some questions might be difficult to answer. If you do not know the answer to certain questions, you can mark the box 'I don't know'.

Short description of the occupation

[Insert short description]

1. If any, what alternative job titles are used in your country for [insert occupational title] (max. of 3 job titles, please include those most frequently used)?

- 1.....
 2.....
 3.....

Below, the main tasks of this occupation are suggested. Please note that these task descriptions are preliminary. They are based on international deskresearch. You are more than welcome to provide comments and suggestions to revise the task list.

Suggested tasks:

13. [Insert task 1]
 14. [Insert task 2]
 15. [Insert task 3]
 16. [Insert task 4]
 17. [Insert task 5]
 18. [Insert task 6]
 19. [Insert task 7]
 20. [Insert task 8]
 21. [Insert task 9]
 22. [Insert task 10]
 23. [Insert task 11]
 24. [Insert task 12]

2. Are any key tasks missing in the task list?

- 1.....
 2.....
 3.....

Room for comments on the task list

.....

.....
.....
.....
.....

3. Could you indicate for each of the tasks how frequently the task is performed (never or on a daily, weekly, monthly or yearly basis)?

	Never	Yearly	Monthly	Weekly	Daily	I don't know
31. [Insert task 1]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. [Insert task 2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. [Insert task 3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. [Insert task 4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. [Insert task 5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. [Insert task 6]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. [Insert task 7]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. [Insert task 8]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. [Insert task 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. [Insert task 10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. [Insert task 11]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. [Insert task 12]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. How important is competent performance of this task in this occupation?

	Not at all important	Of some importance	Of major importance	I don't know
31. [Insert task 1]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. [Insert task 2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. [Insert task 3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. [Insert task 4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. [Insert task 5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. [Insert task 6]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. [Insert task 7]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. [Insert task 8]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. [Insert task 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. [Insert task 10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

41. [Insert task 11]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. [Insert task 12]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. How many subordinates do people working in this occupation, in general, formally supervise (*EXCLUDING* the coaching of less experienced co-workers, students or trainees)?

- none
- 1 – 10 employees
- 11 – 100 employees
- > 100 employees
- I don't know

6. How often does the work involve coaching or training of less experienced co-workers, students or trainees (*EXCLUDING* the subordinates that are formally supervised)?

- Regularly
- Occasionally
- Never
- It varies
- I don't know

7. How much physical effort is generally required in this occupation?

- Not at all
- Some
- Much
- I don't know

8. How much mental effort is generally required in this occupation?

- Not at all
- Some
- Much
- I don't know

9. Is organising part of the work in this occupation?

- Yes, it involves the organisation of personnel/staff
- Yes, it involves the organisation of equipment/material
- Yes, it involves the organisation of both personnel/staff and equipment/material

- No
- I don't know

10 Which of these categories best describes the use of computers required in this occupation?

- Not at all
- Routine (e.g., word processing, spreadsheets and/or e-mail)
- Complex (e.g., for gathering/analysing information, design)
- Advanced (e.g., programming, IT development)
- I don't know

11 What is the required educational entry level for this occupation in your country? Please note that the required educational entry level may differ from the average educational level of the people working in an occupation. We ask you to tick the required educational entry level. You can mark more than 1 box.

- [insert country-specific education categories]
-
-
-
-
-
-
-
-
-
-

12a Are there additional formal or legal requirements for this occupation?

- Yes, namely:
 - diploma (full educational programme) → question 12b
 - certification (training / course) → question 12c
 - working according to a professional code or protocol → question 12d
 - other, please specify → question 12e
- No → question 13
- I don't know

12b How are the additional diploma requirements established/laid down?

- collective labour agreement
- law/legal requirement
- federal government
- branch of industry
- other, please specify.....
- I don't know

12c How are the additional certification (training/course) requirements established/laid down?

- collective labour agreement
- law/legal requirement
- federal government
- branch of industry
- other, please specify.....
- I don't know

12d How are the additional professional code or protocol requirements established/laid down?

- collective labour agreement
- law/legal requirement
- federal government
- branch of industry
- other, please specify.....
- I don't know

12e How are the additional other requirements established/laid down?

- collective labour agreement
- law/legal requirement
- federal government
- branch of industry
- other, please specify.....
- I don't know

13 When can people start working in this occupation?

- Immediately after completing formal education
- Via in-company dual-learning trajectories after completing formal education
- Via apprenticeships
- Other, namely.....
- I don't know

14 How long does it generally take, after completing the required formal education, to become competent in this occupation?

- | | |
|---|--|
| <input type="checkbox"/> Up to 1 week | <input type="checkbox"/> 6 months – 1 year |
| <input type="checkbox"/> 1 week – 1 month | <input type="checkbox"/> 1 – 5 years |
| <input type="checkbox"/> 1 – 3 months | <input type="checkbox"/> ≥ 5 years |
| <input type="checkbox"/> 3 – 6 months | <input type="checkbox"/> I don't know |

15 How often do people working in this occupation have to update their knowledge and skills?

<input type="checkbox"/> Never
<input type="checkbox"/> Yearly
<input type="checkbox"/> Monthly
<input type="checkbox"/> Weekly
<input type="checkbox"/> Daily
<input type="checkbox"/> I don't know

16 We want to know more about the transferability of skills. Therefore, we would like to know the relevance of the competencies mentioned below for this occupation.¹²

	Not at all important	Of some importance	Of major importance	I don't know
A Initiating action	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Instructing co-workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Supervising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Co-operating with colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Communicating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Relating and networking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Negotiating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Reporting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Applying know-how, professional expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Problem solving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Developing new procedures and working methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Forming strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M Planning and organising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N Following instructions and procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O Dealing with contingencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
P Coping with stressful situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q Commercial thinking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17 Are you familiar with the European Qualification Framework?

<input type="checkbox"/> Yes → go to question 18
<input type="checkbox"/> No → go to question 21

¹² The list of competencies is based on the SHL Competency Framework (Bartram, D. (2005). The great eight competencies: A criterion-centric approach to validation. *Journal of Applied Psychology*, 90 (6): 1185-1203).

18 Which of the following descriptions characterises the level of knowledge of this occupation best?¹³ **Tick one box only.** *If you do not know the answer to this question, you can select the box 'I don't know'.*

This occupation requires:

- ... basic general knowledge
- ... basic factual knowledge of a field of work
- ... knowledge of facts, principles, processes and general concepts, in a field of work
- ... factual and theoretical knowledge in broad contexts within a field of work
- ... comprehensive, specialised, factual and theoretical knowledge within a field of work and an awareness of the boundaries of that knowledge
- ... advanced knowledge of a field of work, involving a critical understanding of theories and principles
- ... highly specialised knowledge of a field of work and critical awareness of knowledge issues in a field and at the interface between different fields
- ... knowledge at the most advanced frontier of a field of work and at the interface between fields
- I don't know

19 Which of the following descriptions characterises the skill level of this occupation best?¹⁴ **Tick one box only.** *If you do not know the answer to this question, you can select the box 'I don't know'.*

Definition:

Cognitive skills: use of logical, intuitive and creative thinking

Practical skills: involving manual dexterity and the use of methods, materials, tools and instruments

This occupation requires:

- ... basic skills required to carry out simple tasks
- ... basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools
- ... a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information
- ... a range of cognitive and practical skills required to generate solutions to specific problems in a field of work
- ... a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems
- ... advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work
- ... specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields
- ... the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice

¹³ This question is based on the European Qualification Framework.

¹⁴ This question is based on the European Qualification Framework.

I don't know

20 Which of the following descriptions characterises the level of responsibility and autonomy of this occupation best?¹⁵ Tick one box only. *If you do not know the answer to this question, you can select the box 'I don't know'.*

This occupation involves:

- ... working under direct supervision in a structured context
- ... working under supervision with some autonomy
- ... taking responsibility for completion of tasks and adapting own behaviour to circumstances in solving problems
- ... exercising self-management within the guidelines of work contexts that are usually predictable, but are subject to change and supervising the routine work of others, taking some responsibility for the evaluation and improvement of work activities
- ... exercising management and supervision in work contexts where there is unpredictable change and review and develop performance of self and others
- ... managing complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work contexts and taking responsibility for managing professional development of individuals and groups
- ... managing and transforming work contexts that are complex, unpredictable and require new strategic approaches and taking responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
- ... demonstrating substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work contexts including research
- I don't know

We now want to ask some questions about expected changes and developments in the occupation.

21 Do you expect the content of this occupation to change within the next 5 years?

- Yes, in the following way:.....
.....
- No
- I don't know

22 Do you expect the educational requirements for this occupation to change within the next 5 years?

- Yes, in the following way:
.....
- No
- I don't know

¹⁵ This question is based on the European Qualification Framework.

