



LOG>IN

# Matrix of professional competencies for digital logistics



## TABLE OF CONTENTS

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<b>1. INTRODUCTION .....</b>	<b>2</b>
<b>2. COMPETENCE MATRIX .....</b>	<b>4</b>
<b>2.1. COMPETENCE I: SOCIAL ATTITUDE .....</b>	<b>6</b>
<b>2.2. COMPETENCE II: KNOWLEDGE .....</b>	<b>7</b>
<b>2.3. COMPETENCE III: SKILLS .....</b>	<b>11</b>

## 1. INTRODUCTION

For the creation of the competence matrix for logistics occupations, the project partners analysed the previous framework plans and the national qualification framework specifications. This was done using a jointly defined structure and was followed by a more concrete analysis of the skills that have been taught in the selected logistics professions in each country.

The following professions were selected as examples:



The selection of the professions is directly related to the expertise of the project partners, who have bundled their knowledge and experience in the areas of transport/warehousing and logistics management (including shipping and air traffic) in the LOG-IN project.

At the same time, the differences in the level assignment of professions in the individual countries (e.g. technician) and the differences in content in the respective framework plans had to be considered.

The matrix focuses on the professional competences for the labour market. It was described which content for each country (DE, HR, NL and PL) has to be linked to the existing framework plans in order to determine which additional competencies have to be included in the future training of logistics professions.

The aim was to identify existing competence gaps. The partners used the ESCO base analysis as a suggestion. ESCO (European Skills, Competences, Qualifications and Occupations) is the European multilingual classification of skills, competences, qualifications and occupations, available in 27 languages (24 EU languages, plus Icelandic, Norwegian and Arabic) and composed of 2 pillars: Occupations & skills/competences. It is also linked to relevant international classifications and frameworks. ESCO is managed by the Commission, who is responsible for updating the classification. It is supported by external stakeholders\*".

Similarities and differences in the individual countries were discussed and the competences for Levels 3 to 5/6 (Bachelor) were defined, supplemented by information for Level 7. The selection was based on the dialogue with logistics companies and the exchange with actors from vocational training centres and high schools. This led to the formulation of common cross-border competences for the internationally shaped logistics sector.

The named **COMPETENCES** were divided into three areas:



They are presented in the **MATRIX** (see below) to give an overview of the range of competences, which were formulated for each area.

The matrix shows both, the competences to be taught so far per country and those to be included. The latter are shown **IN RED** in the matrix in order to define the proposals for possible assignment of levels. They are followed by the description of the specific, job-related competences. The **GREY** fields are not applicable.

The matrix considers high school and university levels.

## 2. COMPETENCE MATRIX

### Explanation on Competence Matrix

Education level	Poland	Germany	Croatia	The Netherlands
3	<b>Warehouse worker</b> (1 <sup>st</sup> degree vocational school) (this is 1st qualification:AU.22) <sup>1</sup>	<b>Stock worker</b>	<b>Warehouse worker</b>	<b>Warehouse manager</b> (low level) Coordinator for port logistics “lashing” Planner for logistics
4	<b>Logistics technician</b> (2 <sup>nd</sup> degree vocational school OR technical school) (this includes two qualifications:AU.22+AU.32) <sup>2</sup>	<b>Warehouse logistics</b> <b>Merchant of expeditions</b>	<b>Technicians</b> (“mix”) Road-traffic-technician	<b>Warehouse manager</b> <b>Manager for port management</b>
5	Studying in an upper secondary school. This type of school does not exist in all EU countries. There is no such level among the partner countries in the project			
6	<b>Logistics engineer</b> Education at first-cycle studies or at Higher Vocational Schools	<b>Industrial Engineer</b> <b>Traffic,</b> Transport and Logistics (Bachelor/Fachhochschule Erfurt)	<b>Logistics engineer</b>	
7	Master of Logistics Second-cycle studies	Master of Logistics (Fachhochschule Münster)	Master of Logistics	Master of Logistics <a href="https://www.bachelorstudies.de/Bachelor/Logistik/Niederlande">https://www.bachelorstudies.de/Bachelor/Logistik/Niederlande</a>

<sup>1</sup> In Poland there are two qualifications, whereas: AU.22 is related with the warehouse management.

<sup>2</sup> In Poland there are two qualifications, whereas: AU.32 is related with the transport organization <https://europa.eu/europass/pl/description-eight-efq-levels>  
kwalifikacje-opis szczegolowy: [https://kwalifikacje.gov.pl/k?id\\_kw=13432](https://kwalifikacje.gov.pl/k?id_kw=13432)

### Preliminary requirements for levels: 5 and 6

Student ...	PL	HR	GER	NED
He can communicate in an appropriate foreign language	x	x	x	x
knows the technical vocabulary of his own discipline in the right foreign language	x	x	x	x
can use modern information exchange methods (internal network, internet, data storage clouds, clouds computing)	x	x	x	x
can conduct a well -organized search on the Internet	x	x	x	x
is able to operate and maintain the functionality of hardware and software				x
is able to seek proper help in case of equipment problems or software	x	x	x	x

## 2.1. COMPETENCE I: SOCIAL ATTITUDE

SOCIAL / ATTITUDE					
ID	The student ...	PL	GER	HR	NED
SA_01	works in a team.	4 / 5	3	4	3 / 4
SA_02	observes secrets and regulations concerning data protection while carrying out vocational tasks.	4 / 5	3	4	4
SA_03	can deal with stress.	4 / 5	3	4	3 / 4
SA_04	demonstrates responsibility, initiative and autonomy.	4 / 5	3	4	4
SA_05	has a flexible approach and is able to adjust.	4 / 5	3	4	3 / 4
SA_06	is aware of the logistics impact on the environment.	4 / 5	3	4	4
SA_07	is ready to continuously learn and develop himself/herself.	4 / 5	3	4	3 / 4
SA_08	is able to communicate (with associates in a company and outside).	4 / 5	3	4	3 / 4
SA_09	acts upon and finds solutions to problems and makes decisions.	4 / 5	3	4	3 / 4
SA_10	as self-disciplined.	4 / 5	3	4	3 / 4
SA_11	carries out vocational tasks according to guidelines applying rules of culture and ethics in logistics.	4 / 5	3	4	3 / 4
SA_12	is ready to help, advise and guide co-workers including managers.	4 / 5	3	4	4
SA_13	is able to negotiate.	4 / 5	3	4	3 / 4
SA_14	realises the need for planning, work organization, time management.	4 / 5	3	4	3 / 4
SA_15	is ready to be a leader and coordinate work of group of co-workers.	4 / 5	3	4	4
SA_16	represents a tech-attitude.	4 / 5	3		4
SA_17	demonstrates an analytical ability and critical thinking.	4 / 5	3		4

## 2.2 COMPETENCE II: KNOWLEDGE

KNOWLEDGE					
ID	General knowledge about ...	PL	GER	HR	NED
GK_01	General management concepts	4 / 5	3	4	4
GK_02	Law basics (in particular labour)	4 / 5	3	4	3 / 4
GK_03	Mathematics and statistics	4 / 5	3	4	4
GK_04	Economy and finance in a company	4 / 5	3	4	4
GK_05	Data security	4 / 5	3	4	4
GK_06	Health and safety rules	4 / 5	3	4	3 / 4
GK_07	Information technology basics (Microsoft Office programs or similar programs for preparing: text document, spreadsheet, presentation, Internet web-searches, computer, fax, scanner)	4 / 5	3	4	3 / 4
GK_08	Environmental management and social responsibility	4 / 5	3	4	4
GK_09	Foreign language	4 / 5	3	4	3 / 4
GK_10	Quality management	4 / 5	3	4	4
GK_11	Waste segregation and recycling	4 / 5	3	4	3 / 4
GK_12	Information flow management (data obtaining, archiving)	4 / 5	3	4	4
GK_13	Modern technologies of information flow, data gathering and communication (RFID, Cloud computing, long distance communication tools like zoom, skype, ms teams, etc)	4 / 5	3	4	3 / 4



## In-depth (expert) KNOWLEDGE ABOUT...

### Warehouse and inventory management (K WIM)

ID		PL	GER	HR	NED
K_WIM_01	Warehouse documents	4	3	4	3, 4
K_WIM_02	Warehouse KPI	4	3	4	4
K_WIM_03	Warehouse equipment (including racks, forklifts and auxiliary devices e.g. scanner, bar code printer, etc) and rules of using it	4	3	4	3
K_WIM_04	Formation of pallet unit loads	4	3	4	3
K_WIM_05	FIFO, LIFO, FEFO	4	3	4	3 / 4
K_WIM_06	Packages and their functions	4	3	4	3, 4
K_WIM_07	Warehouse management system (WMS)	4	3	4	3 / 4
K_WIM_08	Bill of Materials (BOM)	4	3	4	4
K_WIM_09	Material Requirements Planning (MRP)	4	3	4	n/a
K_WIM_10	Lot sizing (batch size calculation)	4	3	4	3
K_WIM_11	Inventory (definition, types)	4	3	4	3 / 4
K_WIM_12	Warehouse (definition, types, activities)	4	3	4	4
K_WIM_13	Inventory management systems (e.g. Reorder point, periodical review system, two bins)	4	3	4	4
K_WIM_14	Inventory measurement (cost analysis, structure of inventory, stock dynamics)	4	3	4	4
K_WIM_15	Quantitative and qualitative goods control (methods, tools, procedure)	4	3	4	3
K_WIM_16	Storage of goods (methods, tools, procedure, special requirements e.g. for hazardous substances)	4	3	4	3 / 4

ID		PL	GER	HR	NED
K_WIM_17	Picking (methods, tools, procedure)	4	3	4	3
K_WIM_18	Forecasting the demand	4	3	4	3, 4
K_WIM_19	New technologies in warehouse (including AVG, robots)		3		4
K_WIM_20	Stock allocation in a warehouse (methods, tools, procedure)	4	3		4

In-depth (expert) KNOWLEDGE ABOUT...					
Transport					
ID		PL	GER	HR	NED
K_T_01	Internal transport modes (types, parameters, rules of use)	4	3	4	4
K_T_02	External transport modes (types, parameters, rules of use)	5	3	4	4
K_T_03	Transport documents (customs clearance, CMR, forwarding order, forwarding contract, SAD, FIATA, documents concerning damage or shortcomings in the transportation process)	5	3	4	3, 4
K_T_04	Transport characteristics (transport sectors, transport infrastructure)	5	3	4	3, 4
K_T_05	National and international law regulations concerning transport activities	5	3	4	3, 4
K_T_06	Packaging and goods securing for transport	5	3	4	3
K_T_07	Transport tracking (methods, tools)	5	3	4	4
K_T_08	Customs (types, procedure)	5	3	4	3, 4
K_T_09	Incoterms	5	3	4	3, 4
K_T_10	Planning and management of transport resources (e.g. route planning methods)	5	3	4	4
K_T_11	Transport Management System (TMS)	5	3	4	4

K_T_12	Transport cost analysis	5	3	4	4
K_T_13	Drivers time analysis	5	3	4	4
K_T_14	new technologies in transport (e.g. drones, autonomous vehicles, It solutions e.g. freight exchange platforms)		3		4
K_T_15	Vehicle maintenance		3		3
K_T_16	Shipping marks/package handling	5	3		3, 4

### In-depth (expert) KNOWLEDGE ABOUT...

#### Logistics service

ID		PL	GER	HR	NED
K_LS_01	Procurement logistics (definition, tasks, used methods)	4	3	4	4
K_LS_02	Distribution logistics (definition, tasks, used methods)	4	3	4	4
K_LS_03	Supplier assessment methods	4 / 5	3	4	4
K_LS_04	Personalised logistics		3	4	4
K_LS_05	Commercial documents (offer query/customer order/offer/invoice, complaint)	4 / 5	3	4	4
K_LS_06	Complaint process	4 / 5	3	4	4
K_LS_07	Relationships between procurement systems, storage systems, production systems, and the distribution of goods	4	3	4	4
K_LS_08	Value added logistics (VAL)		3		3 / 4
K_LS_09	Customer service (definition, key elements, measurement)	4 / 5	3	4	3 / 4

## 2.3 COMPETENCE III: SKILLS

SKILLS					
General skills					
ID	The student ...	PL	GER	HR	NED
GS_01	can manage resources (time, money, people, material).	4 / 5	3	4	3 / 4
GS_02	Follows law regulations concerning logistics activities.	4 / 5	3	4	3 / 4
GS_03	can make calculations.	4 / 5	3	4	4
GS_04	is able to make an economical analysis of a problem.	4 / 5	3	4	4
GS_05	can secure data of business partners and coworkers .	4 / 5	3	4	4
GS_06	follows work health and safety regulations, fire precautions, environment protection rules.	4 / 5	3	4	3 / 4
GS_07	can present data in a tabular, graphic, and descriptive form.	4 / 5	3	4	4
GS_08	can use a foreign language for realizing vocational activities.	4 / 5	3	4	3 / 4
GS_09	respects quality procedures, norms and standards.	4 / 5	3	4	3 / 4
GS_10	secures and segregates waste.	4 / 5	3	4	3 / 4
GS_11	archives documents according to law regulations.	4 / 5	3	4	3 / 4
GS_12	can use modern technologies of information flow, data gathering and communication, including long-distance communication and remote learning (RFID, Cloud computing, long distance communication tools like zoom, skype, ms teams, etc).	4 / 5	3	4	3 / 4
GS_13	Draw up descriptive and evaluation reports relating to its activity	4 / 5	3	4	4
GS_14	can operate office equipment (printer, scanner, fax).	4 / 5	3	4	3 / 4

SKILLS					
Expert skills – Warehous and inventory management (S WIM)					
ID	The student ...	PL	GER	HR	NED
S_WIM_01	uses and can fill in warehouse documentation	4	3	4	3 / 4
S_WIM_02	calculates warehouse KPI's.	4	3	4	4
S_WIM_03	selects warehouse equipment (inlcuding racks, forklifts, auxiliary devices).	4	3	4	4
S_WIM_04	can form a pallet unit load according to requirements and assess its accuracy.	4	3	4	3
S_WIM_05	can accept/issue goods from the warehouse from/to a given location according to specific requirements (rules and priorities).	4	3	4	4
S_WIM_06	can select type of packaging according to order requirements and including the properties of the goods.	4	3	4	3 / 4
S_WIM_07	operates warehouse management system (WMS).	4	3	4	3 / 4
S_WIM_08	can use auxiliary devices to carry out vocational tasks (scanner, bar codes scanner, etc.).	4	3	4	3
S_WIM_09	analyzes the product's BOM for a given item for the purpose of planning the material flow.	4	3	4	4
S_WIM_10	can plan the flow of materials in production (MRP).	4	3	4	3 / 4
S_WIM_11	calculates the batch size and frequency of deliveries.	4	3	4	4
S_WIM_12	distinguishes stock in production processes, storage, distribution and can calculate their level (current stock, safety stock, maximum stock).	4	3	4	4
S_WIM_13	can calculate and analyze stock costs, warehouse services.	4	3	4	4
S_WIM_14	manages stock according to a specific system of renewing stock (system based on information level, periodic inspection, one on one).	4	3	4	4
S_WIM_15	can calculate indicators concerning the structure and stock dynamics (e.g. rotation indicators) and interpret their results.	4	3	4	4
S_WIM_16	performs a quantative and and qualitative receipt of goods.	4	3	4	4
S_WIM_17	can select appropriate parameters of storing and controlling the stock.	4	3	4	4

ID	The student ...	PL	GER	HR	NED
S_WIM_18	picks goods for issuing, uses picking methods (pick by Voice, pick by light, etc.).	4	3	4	3 / 4
S_WIM_19	can forecast the demand.	4	3	4	3 / 4
S_WIM_20	can secure stored goods against damage, shortcomings, theft.	4	3	4	4
S_WIM_21	can place the stock using appropriate methods (e.g. ABC, XYZ).	4	3	4	3 / 4
S_WIM_22	selects a package handling mark.	4	3	4	4
S_WIM_23	uses modern labeling systems (e.g. G1 system).	4	3		3 / 4
S_WIM_24	can operate with (co-) robotization in orderpicking (AVG).				3
S_WIM_25	can guide the process of automatic warehouse positioning.				3

SKILLS					
Expert skills – Transport (T S)					
ID	The student ...	PL	GER	HR	NED
S_T_01	uses short-distance transport devices to relocate stock in the warehouse.	4	3	4	3
S_T_02	can select the type and quantity of transport modes (internal and external) according to requirements (including law, freight characteristics).	5		4	3 / 4
S_T_03	fills in transport documents (customs clearance, CMR, forwarding order, forwarding contract, SAD, FIATA, documents concerning damage or shortcomings in the transportation process).	5	3	4	3 / 4
S_T_04	develops a schedule for transportation process.	5	3	4	4
S_T_05	calculates the driving time and work of the transport modes.	5	3	4	4
S_T_06	selects a way of securing a load onto a mode of transport.	5	3	4	4
S_T_07	can monitor and track transport mode.	5	3	4	4
S_T_08	calculates customs duties.	5	3	4	4

ID	The student ...	PL	GER	HR	NED
S_T_09	selects appropriate Incoterms formula to requirements.	5	3	4	4
S_T_10	sets the best route.	5	3	4	4
S_T_11	can use a Transport Management System (TMS).	5	3	4	4
S_T_12	calculates the costs of transport services.	5	3	4	4
S_T_13	is able to recognize basic vehicle breakdown.		3		
S_T_14	can use maps.	5	3	4	4
S_T_15	is making decisions on safety procedure issues, before and during transport.	5	3	4	4
S_T_16	participates in insurance procedures and contracting.		3	4	4
S_T_17	can use new advancements in transport (digital freight exchange platforms (like teleroute), truck platooning).		3		4

SKILLS Logistics service (S LS)					
ID	The student ...	PL	GER	HR	NED
S_LS_01	plans supplies of materials.	4		4	4
S_LS_02	can design the distribution of goods according to given criteria and objectives.	4		4	4
S_LS_03	can assess and select the best supplier.	4 / 5		4	4
S_LS_04	fills in commercial documents (offer query/customer order/offer/invoice, complaint).	4 / 5		4	3 / 4
S_LS_05	can handle a complaint process.	4 / 5		4	4
S_LS_06	Can advise clients about VAL/personalized options.				4
S_LS_07	is able to establish appropriate and positive relations with partners.	4 / 5			3 / 4



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## Publisher & Project coordination

BGZ Berliner Gesellschaft  
für internationale Zusammenarbeit mbH

[www.bgz-berlin.de](http://www.bgz-berlin.de)

## Project partner

OSZ Logistik, Touristik und Steuern (LOTIS)  
Vocational training centre in Zagreb (SCP)

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Rotterdam (STC-Group)

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