SIMULTRA PROJECT

2017-1-IT01-KA202-006140

SIMULATION OF LOGISTICS AND TRANSPORT PROCESSES

REPORT ON COMPETENCE AND EDUCATIONAL STANDARDS

30/09/2019

[All partners]

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1. INTRODUCTION

The SIMULTRA project represent a complementary tool for the schools and training institutions providing courses related to transport and logistics professional qualifications. The developed simulators, in fact, can be combined with training courses in order to complete the theory with the experience of practical and operational activities that characterize the detected job profiles aiming to ensure the coverage of the last "step" of a training course and the effective inclusion into the workplace by the learners.

The correspondent job profiles to each simulation module are following indicated:

n.	SIMULATION MODULE	JOB PROFILE
O2	Supply Chain	Supply Chain Designer / Planner
O3	Intermodal platform	Inland Terminal Clerk
O4	Road Transport	Transport Clerk
O5	Port Operations	Container Terminal Resource Planner
O6	WMS	Warehouse Technician/Employee
O7	Customs Practices	Customs Practices Clerk

More precisely, the term “simulation module” doesn’t only refer to the simulation software but refers to a simulation “toolkit” that includes the software and its specific supporting documents (i.e. the “User manual” and the “Learning materials document”).

According to this foreword, this document consists in the definition of Competence and Educational Standards, which are information enabling trainers to organize efficiently the use of simulation tools developed within the SIMULTRA project and their inclusion into teaching programs.

The Standards of Competence are here defined according to the principles of ECVET framework, the methodology for understanding and use of the standards by instructors, students and training managers in order to ensure recognition and transparency of the skills acquired on a European level, and ensure the possibility of proper inclusion and use of the tools within new and existing initiatives.

In addition to the Standards of Competence, some concise parameters related to the Educational Standards related to the tools are also defined (as the level of qualification required, the length of the training period, the theoretical content related to the correct use of the tools, etc.).

In conclusion, the target groups of this output are all the subjects interested in the use of the work-based learning tools developed within the project, thus:

- Training organisations;
- Schools;
- VET centres;
- Companies;
- Trainees;
- Teachers.

2. WHAT "COMPETENCE STANDARDS" ARE

The methodology chosen for the definition of the Competence Standard within the SIMULTRA Project is the one proposed by ECVET, the official EU Credit system for Vocational Education and Training.

ECVET consists in a technical framework for the transfer, recognition and accumulation of individuals' learning outcomes for the achievement of a qualification, where Learning Outcomes (LOs) are statements of what a learner knows, understands and is able to do after having gone through a specific learning process. Indeed, ECVET is intended to facilitate the recognition of learning outcomes in accordance with national legislation for the purpose of achieving a qualification.

Drafting the Competence Standards according to the ECVET method will ensure the recognition and transferability of skills acquired through learning based on simulated work, and therefore will also act as proof of what the user can do, even in the real world, once he or she has completed the procedures corresponding to the professional profile reproduced by SIMULTRA simulation tools.

How to define the Learning Outcomes?

According to EQF (European Qualification Framework), Learning Outcomes are defined in terms of knowledge and skills, regarding a specific level of competence and can be achieved in formal, non-formal and/or informal learning contexts and situations. Indeed, each Learning Outcome identified will be characterised by the "KSC" descriptors, defined by CEDEFOP (European Centre for the Development of Vocational Training) as follows:

- **Knowledge**: The outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of study or work. In the context of EQF, knowledge is described as theoretical and/or factual.
- **Skill**: The ability to apply knowledge and use know-how to perform tasks and solve problems. In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).
- **Competence**: The ability to apply learning outcomes adequately in a defined context (education, work, personal or professional development). Competence means the proven ability to use knowledge, skills and personal, social and methodological abilities in work or study situations and in professional and/or personal development. In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy."

The learning outcomes are grouped into modules or units with different characteristics in different educational systems. The various units determine the overall knowledge and competences (KSC), which must be acquired to achieve a certain qualification. More specifically, "module" are substructures of vocational training programs who differ from each other, e.g. they must be monitored and assessed separately. "Units", instead, are component of a qualification, consisting of a coherent set of knowledge, skills and competence that can be assessed and validated with a number of associated ECVET points.

The units that constitutes a qualification are:

- described in legible and understandable terms by referring to the knowledge, skills and competences contained in them,
- constructed and organised in a coherent way within the overall qualification,
- constructed in a way that enables discrete assessment and validation of learning outcomes contained in the unit.

The specifications for a unit include:

- the generic title of the unit,
- the generic title of the qualification (or qualifications) to which the unit relates, where applicable,
- the reference of the qualification according to the EQF level and, where appropriate, the national qualifications framework (NQF) level, with the ECVET credit points associated with the qualification
- the learning outcomes contained in the unit,
- the procedures and criteria for assessment of these learning outcomes,
- the ECVET points associated with the unit,
- the validity in time of the unit, where relevant.

3. WHAT "EDUCATIONAL STANDARDS" ARE

The Educational Standards are indicated for each individual simulation module with the aim of providing further information and practically allow the inclusion of the simulation modules in existing technical and professional training courses.

The defined elements include, in detail:

Curriculum
The inventory of activities implemented to design, organize and plan an education or training action, including the definition of learning objectives, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers.

Learning Content
The topics and activities which make up what is learned by an individual or group of learners during a learning process;

Selection of Trainers
The competence and the expertise of the trainers are explicated, together with their language;

Training Materials
It is a list of tools (simulators, software) that can be used during the training, as well as a list of books, articles or power point presentations (if public) can be indicated and suggested.

Assessment and Validation
Here the tool scoring methodology and the survey elaborated should be described;

Training Unit/Module e Sub-Units

Here the content of the module, and its units, must be described in order to clarify what is going to be taught.

Duration/Training Hours
For each Simulation Module and therefore for each training Unit the duration must be indicated in order to clarify how long the training will be as well as to clarify *how many ECVET points will be possible to get during the training of Unit/Module.*

Training Methods
It is necessary to specify if the training will be carried out only through frontal lectures and simulators or even with other methods (laboratories, practical experiences, internship, e-learning, role games, company visits, case studies by companies or by a mix of such methods);

Entry Requirements - Selection of Learners
Which is the minimum level of Education and Training for attending the training modules? Is it necessary to speak English? What is the minimum age?

4. O2 Supply Chain game

4.1 O2 - Competence standards

Learning Outcome Unit 1

Simulation Module O2 – Supply Chain	**Job profile** Supply Chain Manager	**Weight**
Name of the Learning Outcome Unit LO Unit 1: Developing a sourcing plan		
Autonomy/Responsibilities		
▪ he/she works in a team and relates with all the actors involved. He/she manages the documentation related to the sourcing options. He/she is autonomous in planning and organizing the assigned tasks. He/she has project management skills. He/she has analytical skills (working with lots of data).		
Skills	**Knowledge**	
▪ Use the information of a sourcing plan	▪ Different sourcing options: frequency of sourcing, scope of sourcing (local vs global), contract lengths	
Assessment criteria		
▪ Survey for the Supply Chain Simulator ▪ Simulation Module (Toolkit)		

Learning Outcome Unit 2

Simulation Module O2 – Supply Chain	**Job profile** Supply Chain Manager	**Weight**
Name of the Learning Outcome Unit LO Unit 2: Analysing carrier portfolio, rating structure and performance management		
Autonomy/Responsibilities		
▪ he/she works in a team and relates with all the actors involved. He/she manages the documentation related to the carriers. He/she is autonomous in planning and organizing the assigned tasks. He/she has project management skills. He/she has analytical skills (working with lots of data).		
Skills	**Knowledge**	
▪ Use the information related to a set of carriers	▪ Carrier portfolio ▪ Rate structures ▪ Carrier performance management	
Assessment criteria		
▪ Survey for the Supply Chain Simulator ▪ Simulation Module (Toolkit)		

Learning Outcome Unit 3

Simulation Module O2 – Supply Chain	**Job profile** Supply Chain Manager	**Weight**
Name of the Learning Outcome Unit LO Unit 3: Managing chain capacity		
Autonomy/Responsibilities		
▪ he/she works in a team and relates with all the actors involved. He/she manages the documentation related to the chain characteristics. He/she is autonomous in planning and organizing the assigned tasks. He/she has project management skills. He/she has analytical skills (working with lots of data).		
Skills	**Knowledge**	
▪ Use the information related to a set of chain characteristics	▪ How to manage the overall capacity of a chain.	
Assessment criteria		
▪ Survey for the Supply Chain Simulator ▪ Simulation Module (Toolkit)		

Learning Outcome Unit 4

Simulation Module O2 – Supply Chain	**Job profile** Supply Chain Manager	**Weight**
Name of the Learning Outcome Unit LO Unit 4: Booking, tracking & tracing		
Autonomy/Responsibilities		
▪ he/she works in a team and relates with all the actors involved. He/she manages the documentation related to the chain operational characteristics. He/she is autonomous in planning and organizing the assigned tasks. He/she has project management skills. He/she has analytical skills (working with lots of data). He/she has communication skills (internal / external). He/she has good negotiation skills (with the providers).		
Skills	**Knowledge**	
▪ Arrange the most suitable booking, and set up a suitable track & trace system	▪ How to do the best booking ▪ How to organize tracking and tracing	
Assessment criteria		
▪ Survey for the Supply Chain Simulator ▪ Simulation Module (Toolkit)		

4.2 O3 Educational standards

Simulation Module O2 – Supply Chain
Entry Requirements
Superior: headquarter manager (global) Subordinates: Executing staff
Language
English
Learning content
▪ Sourcing plan (frequency of sourcing, scope of sourcing (local vs global), contract lengths) ▪ Rate structure ▪ Carrier portfolio ▪ Carrier performance management ▪ TMS / System solution for segment (booking, track & trace) ▪ Capacity management
Level of qualification
Superior: University professors Subordinates: University college staff
Training materials
Supply Chain Simulator + Manual
Assessment and Validation
The Supply Chain Survey
Duration Training Hours
30
Training Methods/Tools
frontal lectures + simulators Eventually, a later stage: e-learning

5. O3 Intermodal Platform Game

5.1 O3 Competence standards

Learning Outcome 1

<table>
<tr><td>Name of the “Simulation Module”
Intermodal Platform</td><td>Job profile
Intermodal Clerk/Manager</td><td>Weight
50%</td></tr>
<tr><td colspan="3">Name of the Learning Outcome Unit
LO Unit 1: Management of terminal operations</td></tr>
<tr><td colspan="3">Autonomy/Responsibilities</td></tr>
<tr><td colspan="3">▪ He/she plans the scheduling of the terminal
▪ He/she manages the trains/trucks arriving or departing from the rail-road terminal
▪ He/she monitor the activities of the terminal
▪ He/she is responsible for the terminal activities</td></tr>
<tr><td colspan="2">Skills</td><td>Knowledge</td></tr>
<tr><td colspan="2">She/he is able to:
▪ schedule activities of goods arrival/departure according to specific documents (train list, rail plan)
▪ supervise terminal operations (e.g. load, unload, …)
▪ understand KPI (MAD, HIL) and action for complying with them - complying with safety rules
▪ preparation of documents and use Microsoft Office suite or Management Software
▪ relate with external actors and platform employees</td><td>▪ Terminology related to Intermodal, Rail Transport and Road Transport
▪ Characteristics and layouts of the Intermodal Terminal
▪ Safety Rules for Rail and Road Transport
▪ Intermodal Transport Documentation
▪ Use of ICT Tools and Platform Management Software</td></tr>
<tr><td colspan="3">Assessment criteria</td></tr>
<tr><td colspan="3">▪ Survey for the Intermodal Transport Simulator
▪ Intermodal Transport Simulator Game – “EXPLORE” MODE
▪ Intermodal Transport Simulator Game – “START” MODE</td></tr>
</table>

Learning Outcome 2

<table>
<tr><td>Name of the “Simulation Module”
Intermodal Platform</td><td>Job profile
Intermodal Clerk</td><td>Weight
50%</td></tr>
<tr><td colspan="3">Name of the Learning Outcome Unit
LO Unit 2: Coordination and execution of loading/unloading operations</td></tr>
<tr><td colspan="3">Autonomy/Responsibilities</td></tr>
<tr><td colspan="3">▪ He/she coordinate the operations within the intermodal terminal
▪ He/she coordinate the storage of containers in the Intermodal Platform
▪ He/she understands the overall intermodal process of the platform</td></tr>
<tr><td colspan="2">Skills</td><td>Knowledge</td></tr>
</table>

She/he is able to: ▪ Implement the activities according to the scheduled activities according to specific documents (train list, rail plan) ▪ address incoming trains to the right track ▪ He/she coordinates the loading and unloading of a train/truck ▪ address incoming containers to the correct spots (yards, warehouses) ▪ address incoming trucks to the correct storage area ▪ address outgoing containers to the correct rail track ▪ verify handling units availability ▪ understand the overall intermodal process of the platform ▪ relate effectively with the team of platform operators ▪ relates with external actors (customers, freight forwarders, rail or transport operators) ▪ Consultation of documents and use Microsoft Office suite or Management Software	▪ Terminology related to Intermodal, Rail Transport and Road Transport ▪ Terminology related to Loading Units ▪ Characteristics and usability of rolling stock (trains/wagons) ▪ Characteristics and usability of Loading Units ▪ Characteristics and usability of Handling units ▪ Characteristics and Layout of the Intermodal Terminal ▪ Safety Rules for Rail and Road Transport ▪ Intermodal Transport Documentation ▪ Use of ICT Tools and Platform Management Software
Assessment criteria	
▪ Survey for the Intermodal Transport Simulator ▪ Intermodal Transport Simulator Game – "EXPLORE" MODE ▪ Intermodal Transport Simulator Game – "START" MODE	

5.2 O3 Educational standards

Learning Content - **Intermodal Platform layout** (Railway area, Road area, Storage areas: A3 Warehouse/yard (temporary storage), Warehouse/yard A4 (permanent storage)); - **Intermodal Terminal equipment** (Rolling stock, Cargo Units, Handling units); - **Documentation;** - **Terminology;** - **Process and operations**.
Selection of Trainers The targeted trainers are VET teachers or professionals who master the theoretical and practical knowledge of transport and logistics. Trainers must be able to use and explain to learners the elements presented by the tool. They will even be able to deepen the elements covered with respect to the provided manuals and learning materials.

Teachers/Trainers will also be able to identify the elements to which students had difficulty responding and adapt their class regarding it.
Training Materials The toolkit provided (game simulator, manual, learning materials), plus the following list of books, articles indicated and suggested below or eventually suggested by the trainer itself. The “EXPLORE” + “START” modes of the game can be also used for teaching the terminology and the equipment of an intermodal platform.
Assessment and Validation Teachers can assess the degree of learning of the students by: - Providing them with the questionnaire pre and post-test regarding the Intermodal Platform simulator. This questionnaire considers the student's knowledge before and after using the tool. - Score from completing the “LEARNING” mode of the game; - Score from completing the “START” mode of the game;
Training Unit/Module e Sub-Units According to the Competence standards. Sub-units may be planned by teachers also according to the teaching program.
Duration/Training Hours - Theoretical class: LOs Unit 1 (4hours) - Theoretical class: LOs Unit 2 (4hours) with the use of “EXPLORE” + “LEARNING” modes of the simulator (1hr) - Presentation of the simulator (introduction) + Use of the simulator: 1h30
Training Methods - frontal lectures for the theoretical parts; - frontal lectures for introducing the game simulator; - interactive use of the simulators in schools’ laboratories/internships; Other transdisciplinary uses of the game simulator are possible: - teachers can use it in English language to let students learn and discuss the technical glossary in the worldwide used language; - English teacher can use the tool with students to make them familiar with the language.
Entry Requirements - Selection of Learners The tool can be addressed to the following students’ groups: - Students from EQF level 4, in particular to acquire knowledge in school training, to use as a review before the final exams or before the internships; - Students from EQF level 5, in particular to review knowledge already acquired, to test student’s knowledge or before the internships; Other uses: Even if the tool is mainly intended for higher EQF levels, it is possible to use it with students from EQF level 3 as a tool for introducing them to vocational training/transport&logistics field.
Minimum set of knowledge and competence: The user must be familiar with the knowledge relating to: - Basics, "general" information on intermodal transport and freight transport; - Even if the toolkit is used in another language, it is recommended to have a basic knowledge of English.
Minimum age Regarding the level entry recommended, the minimum age is 14/15 years old.

6. O4 Road Freight Transport Game

6.1 O4 Competence standards

Learning Outcome Unit 1

<table>
<tr><td colspan="2">Simulation module
O4 – Road freight transport</td><td>Job profile
Traffic officer</td><td>Weight:
50 %</td></tr>
<tr><td colspan="4">Name of the learning outcome unit
LO Unit 1: Setting up transport operations</td></tr>
<tr><td colspan="4">Autonomy/Responsibilities
▪ He/she works autonomously on assessing and preparing the transport mission.
▪ He/she interacts internally when needed (for ex. regarding price negotiations) and externally in the proper way and according to the actor.</td></tr>
<tr><td colspan="2">Skills</td><td colspan="2">Knowledge</td></tr>
<tr><td colspan="2">He/she is able to:
Develop a transport plan:
▪ Determine the scope of transport tasks
▪ Identify client’s needs. Recognise the demand and supply on the transport services market
▪ Determinate and select the appropriate means of transport
▪ Apply procedures for transport services
▪ Develop transport routes Use the optimal allocation methods to elaborate a transport plan
▪ Prepare the transport document</td><td colspan="2" rowspan="3">▪ The organisation of the transport/logistic company
▪ Modes and techniques of transports
▪ The transports offering
▪ Transport geography
▪ Nature of goods
▪ Regulations applicable to the transports of goods (national and international)
▪ Route, destination, delivery and collection schedules
▪ Company rates, prices and profitability of the transport operation</td></tr>
<tr><td colspan="2">Calculating costs of a transport mission and profitability:
▪ Set a price based on company rates
▪ Apply company margin politics
▪ Apply taxes and tariffs linked to transport
▪ Calculate cost for transport services</td></tr>
<tr><td colspan="2">Use legal regulations
▪ Understand and use social European regulation
▪ Verify transport documents according to established protocols</td></tr>
<tr><td colspan="4">Assessment criteria
▪ Survey for the road freight transport simulator: comparison between pre and post test
▪ Simulation module (Toolkit): Completion of the simulation module (minimum of 50 points over 100 points)
▪ Respect of procedures for transport services
▪ Respect of company rates
▪ Correct verification of transports documents</td></tr>
</table>

▪ A well-developed efficient and profitable transport plan with calculated prices and use of the right resources/ The transport plan corresponds to clients' needs, company's rates, transport documents etc.

Learning Outcome Unit 2

<table>
<tr><td colspan="2">Simulation module
O4 – Road freight transport</td><td>Job profile
Traffic officer</td><td>Weight:
35%</td></tr>
<tr><td colspan="4">Name of the learning outcome unit
LO Unit 2: Monitoring a transport mission</td></tr>
<tr><td colspan="4">Autonomy/Responsibilities</td></tr>
<tr><td colspan="4">▪ Ensure the accuracy of data transmitted.
▪ Comply with protocols and procedures.
▪ Reporting to a branch, operations or customer service manager who determines the degree of autonomy.</td></tr>
<tr><td colspan="2">Skills</td><td colspan="2">Knowledge</td></tr>
<tr><td colspan="2">He/she is able to:
Monitor the transport operations
▪ Identify the systems for monitoring and registering means of transport cargo
▪ Supervise the course of the transport process with the use of monitoring systems and record of means of transport and cargo
▪ Gather and follow up on documents and feedback</td><td colspan="2" rowspan="4">▪ Transport file
▪ Some hazards associated with transport (e.g.: Traffic jam …)
▪ Billing documents
▪ Systems for monitoring and registering means of transport and cargo
▪ Communication with the customers and manager</td></tr>
<tr><td colspan="2">Ensure traceability of goods</td></tr>
<tr><td colspan="2">Deal with hazards, incidents
▪ Report the source of hazards
▪ Transmit relevant information to the customer and to the persons concerned
▪ Manage drivers</td></tr>
<tr><td colspan="2">Record, maintain and close transport files and records of expenses
▪ Identify billing documents
▪ transmit information necessary for invoicing
▪ Recognise transport documents
▪ Archive the transport file</td></tr>
<tr><td colspan="4">Assessment criteria</td></tr>
<tr><td colspan="4">Survey for the road freight transport simulator: comparison between pre and post test
▪ Simulation Module (Toolkit): completion of the simulation module (minimum of 50 points over 100 points)
▪ Traceability of the goods is ensured</td></tr>
</table>

▪ Ensure the report and closure of the transport file

Learning Outcome Unit 3: Communication activities

Simulation module O4 – Road freight transport	**Job profile** Traffic officer	**Weight:** **15%**
Name of the learning outcome unit LO Unit 3: Communication activities		
Autonomy/Responsibilities		
▪ Use of constructive communication methods. Complying with rules and standards for professional writing and oral communication and adjustment of oral and written communication to the contact person(s). Projection of a positive and professional image of the company.		
Skills	**Knowledge**	
He/she is able to: **Communicate with partners and customers** ▪ Speak and write correctly with the customer in a professional context ▪ Identify the communication targets	▪ Principles of professional communication ▪ Oral communication ▪ Written professional communication ▪ Functionalities of logistics software (TMS) ▪ Communication with the customers and manager	
Identify the needs of the customer ▪ Collect data/information ▪ Identify the customer's need ▪ Transfer data/information		
Use communication systems ▪ Use the communication systems of the company ▪ Manage the tracking – tracing tools and communicate		
Participate in monitoring the effective cooperation of persons and institutions involved in logistics chains ▪ Identify the documentation used in correspondence with contractors		
Assessment criteria		
▪ Survey for the road freight transport simulator: comparison between pre and post test ▪ Simulation module (Toolkit): completion of the simulation module (minimum of 50 points over 100 points) ▪ Use of basic communication techniques		

6.2 O4 Educational standards

Simulation module O4 – Road freight transport
Entry Requirements
The tool can be addressed to several students' audiences:

- **Students from EQF level 4**, in particular to acquire knowledge in school training, to use as a review before the final exams or before the internships
- **Students from EQF level 5,** in particular to review knowledge already acquired, to test student's knowledge or before the internships

Other uses:

Even if the tool is mainly intended for students from EQF level 4 and 5, it is possible to use it with students from EQF level 3. In fact, it can be useful to inform and orient student seeking vocational training.

Minimum set of knowledge and competence:

The user must be familiar with the knowledge relating to:

- Technical standards of vehicles
- Geography
- "General" standard contract
- European social regulations
- Calculate the price of a transport service

Speaking English is not mandatory, but it is recommended to have basic knowledge in English.

Minimum age: Regarding the level entry recommended, the minimum age is 14/15 years old.

Language

The tool is available in 5 different languages: English, French, Spanish, Italian and Dutch However, we recommend the use in English (Image, navigation elements in English).

Learning content

- **Road Freight transport in Europe:** European social regulations, International transport contract: CMR.
- **Setting up a transport operation:** Planning and development of transport routes, Determinate and select the appropriate means of transport, Calculating costs of a Transport Mission and profitability, Negotiation.
- **Monitoring a transport mission:** Transport follow up, dealing with hazards, communication with the customers and manager, Gather and follow up on documents.
- **Communication activities:** Communication with customers, identification of the customer's needs, use of TMS software.
- **Environment:** Awareness among carbon footprint.

Selection of trainers

The targeted trainers are teachers or pedagogical professionals who master the theoretical and practical knowledge of transport and logistics.

Trainers must be able to use and explain to learners the elements presented by the tool. They will even be able to deepen the elements covered. For example, mention hazards when planning the route. (constraints such as loading problems, traffic jams and therefore erroneous calculated travel time, etc.).

Teachers/Trainers will also be able to identify the elements to which students had difficulty responding and adapt their class regarding it.

However, another transdisciplinary use is possible for certain stages of the game.

For example, an English teacher can use the tool with her students to discuss the technical vocabulary in the classroom.

In mathematics, the teacher can take over the elaboration of a quotation and the calculations of the tool.

Guidance professionals could also use the tool to introduce the profession of freight transport operator. In this case, it is necessary for these professionals to be familiar with the role and missions of the road transport operator.

Level of qualification

EQF Level 4 and EQF Level 5

Training materials

Each professor/trainer will use his/her material, therefore.

- Learning material provided with the tool;
- User manual;
- Reference books:

In French:

- Errouqui, C., Aïdi,M. (2018). *Le transport routier de marchandises*. Chambéry : Le Génie Editeurs
- Miani,P. Venturelli,N. (2017*). Transport Logistique*. Chambéry : Le Génie Editeurs.
- Saint-Eloi, JP. (2014). *Pratique du transport routier de marchandises*. Paris : Editions Celse.
- Venturelli,N. & Venturelli,W. (2018). *Le Transport routier, Toutes les techniques d'exploitation en transport routier de marchandises.* Chambéry: Le Génie Editeurs

In English:

- Lowe, D., Pidgeon C. (2018*). Lowe's Transport Manager's & Operator's Handbook*, London: Kogan Page.
  - Myerson, P. (2015). *Supply Chain and Logistics Management Made Easy: Methods and Applications for Planning, Operations, Integration, Control and Improvement, and Network Design Hardcover*. Ed.: Pearson ft press
- Pidgeon, C. (2016). *A Study Guide for the Operator Certificate of Professional Competence (CPC) in Road Freight 2018: A Complete Self-Study Course for OCR and CILT Examinations*, London, Kogan Page
- Porée, N. (2019). *Management of road freight transport*. Ed: Independently published
- Social regulations: Regulation CE561/2006
- Todorova,M. & Dzhaleva-Chonkova.A. (2017) knowledge, skills and competencies needed for european road transport managers. https://www.vtu.bg/wpcontent/uploads/2017/04/studia_MTodorova_Dzhaleva.pdf

Assessment and validation

Concerning the different learning units, each unit has assessment criteria (see details above) including, for every unit, the questionnaire pre and post-test regarding the road freight transport simulator. This questionnaire enables the student's knowledge to be compared before and after using the tool.
Teachers will also be able to test their students through practice use cases or knowledge tests.
The feedback from internships in companies will also allow teachers as well to assess whether the student has acquired the necessary knowledge.

Duration training hours:

- Presentation of the simulator (introduction) + Use of the simulator: 1h30
- Theoretical class: LOs Unit 1 Setting up transport operations: 115h
- Theoretical class: LOs Unit 2 Monitoring a transport mission: 80h
- Theoretical class: LOs Unit 3 Communication activities: 35h

Training Methods/Tools
The training will be carried out though the simulator, theoretical class, practical experiences (use cases).

7. O5 Port Operations Game

7.1 O5 Competence standards

Learning Outcome 1

Simulation Module O5 – Port Terminal Management	**Job profile** Port Terminal Manager	**Weight**
Name of the Learning Outcome Unit LO Unit 1: Planning vessels		
Autonomy/Responsibilities ▪ he/she works in a team and relates with all the actors involved. ▪ He/she manages the documentation related to the planning of vessel handling. ▪ He/she is autonomous in planning and organizing the assigned tasks. ▪ He/she has the ability to work under stress.		
Skills	**Knowledge**	
▪ Use the information of a terminal planning system	▪ How to plan vessel handling: how many cranes are planned (plus dockworkers and straddle carriers) on which vessel. This is done either for 24 hours (short term plan) or for 5-7 days.	
Assessment criteria ▪ Survey for the Port Terminal Simulator ▪ Simulation Module (Toolkit)		

Learning Outcome 2

Simulation Module O5 – Port Terminal Management	**Job profile** Port Terminal Manager	**Weight**
Name of the Learning Outcome Unit LO Unit 2: Handling Execution		
Autonomy/Responsibilities ▪ he/she works in a team and relates with all the actors involved. ▪ He/she manages the documentation related to the execution of vessel handling. ▪ He/she is autonomous in planning and organizing the assigned tasks. ▪ He/she has the ability to work under stress. ▪ He/she has good communication skills (talking with dockers)		
Skills	**Knowledge**	
▪ Execute the vessel handling	▪ How to execute the planning for vessel handling	
Assessment criteria ▪ Survey for the Port Terminal Simulator ▪ Simulation Module (Toolkit)		

Learning Outcome 3

Simulation Module O5 – Port Terminal Management	**Job profile** Port Terminal Manager	**Weight**
Name of the Learning Outcome Unit LOs Unit 3: Checking handling safety		
Autonomy/Responsibilities		
▪ he/she works in a team and relates with all the actors involved. ▪ He/she manages the documentation related to checking the safety of the handling operations. ▪ He/she is autonomous in planning and organizing the assigned tasks.		
Skills	**Knowledge**	
▪ Check the safety of terminal handling operations	▪ How to check the safety of terminal handling operations.	
Assessment criteria		
▪ Survey for the Port Terminal Simulator ▪ Simulation Module (Toolkit)		

7.2 O5 Educational standards

Simulation Module O5 – Port Terminal Management
Entry Requirements
Superior: Terminal Manager, Director Manager Subordinates: Planning Manager, Blue collar workers
Language
English
Learning content
Berth planning ▪ Analyse the berthing options: arrival, operations and departure ▪ Analyse the operations options: cargo volumes, type of operations, BBK discharge/loading, type of vessel, unlashing/lashing requirements **Resource planning** ▪ Analyse upcoming operations and determine the necessary blue-collar resources (how much, when, where) ▪ Order necessary resources through the rostering department **Follow up of the ongoing operations** • Monitor productivity - KPI's • Manage unexpected operational changes and challenges: volume increases/decreases, equipment failures • Manage incidents
Level of qualification
Superior: University professors Subordinates: University college staff

Training materials
Port Terminal Simulator + Manual
Assessment and Validation
The Port Terminal Survey
Duration Training Hours
30
Training Methods/Tools
frontal lectures + simulators Eventually, a later stage: e-learning

8. O6 Logistics Warehouse (WMS) Game

8.1 O6 Competence standards

Learning outcome 1

Simulation Module O4 – Logistics Warehouse Simulation Module	**Job profile** Warehouse Technician/ Employee	**Weight**
Name of the Learning Outcome Unit LO Unit 1: Warehouse organization		
Autonomy/Responsibilities		
To organize and control the operations and flows of merchandise of the warehouse, in accordance with established procedures and current regulations, and ensuring the quality and optimization of the network of warehouses and / or logistics chain. ▪ Organize the human and technical resources of the warehouse according to the type and volume of activity to be carried out to achieve maximum efficiency, respecting the current safety and hygiene regulations of the warehouse. ▪ Zoning the warehouse using efficiency criteria and optimizing the space available to minimize internal travel and warehouse costs. ▪ Determine the times and standards of the operations and internal movements of the warehouse to improve the efficiency and effectiveness of the service. ▪ Prepare and control the warehouse budget taking into account the costs to identify deviations and propose corrective measures. ▪ Supervise the processes and activities of the warehouse applying the procedures and quality systems established by the organization for continuous improvement and detection of warehouse service needs. ▪ Organize preventive maintenance programs for facilities and equipment optimizing the operation of the warehouse. ▪ Direct the warehouse team by facilitating their involvement and motivation through leadership and conflict resolution techniques		
Skills	**Knowledge**	
▪ Analyze methods and techniques for optimizing space and time in the organization of warehouses, complying with current regulations. ▪ Determine the appropriate equipment and facilities for different types of warehouses and merchandise. ▪ Prepare maintenance plans for equipment and installations of different types of warehouses, according to the regulations and recommendations of the	▪ Determination of human and technical resources needs. ▪ Selection of equipment means and tools of the warehouse. ▪ Storage methods and techniques. Internal merchandise distribution plans. ▪ Calculations of utilization coefficients and capacity indices. ▪ Reports and protocols related to storage operations. ▪ Warehouse budget. ▪ Economic and time standards of the warehouse. ▪ Monitoring of cost deviations.	

manufacturer, without interfering with its usual activities. ▪ Prepare budgets of expenses and cost of the warehouse service using computer applications and spreadsheets. ▪ Develop quality systems for continuous improvement of the storage service. ▪ Calculate indicators and time standards for the improvement of the quality of the warehouse service and the optimization of time and human and technical resources.	▪ Programming of maintenance activities. ▪ Training needs detection. ▪ Conflict resolution in the environment and equipment of the warehouse. ▪ Team evaluation plan. ▪ Report on the results of the team evaluation.

Assessment criteria

- Specify the parameters, variables and criteria that are applied generically in the structural and functional design of a warehouse based on the product, customer, and operations inherent to the activity.
- Explain the activities and subprocesses that affect the operation of the warehouse in relation to spatial distribution, information and merchandise flows, as well as its interrelation with the supply logistics chain.
- From a warehouse with characteristics and distribution of defined spaces, interpret the risk prevention regulations and standardization recommendations related to the activities of the warehouse.
- Establish the advantages and disadvantages of the different operational management models in relation to the gaps and the warehouse space between the different types of warehouses and location management models.
- Design a “lay-out” or zoning of the warehouse, specifying the different areas and their technical characteristics, as well as the foundation and objective of them.
- Define the diagram of physical flows and information of a type warehouse.
- Analyze the conditions and modalities of the different storage systems according to the type of merchandise, customers, production planning and the characteristics of the company's supply chain.
- Identify the equipment and utilities commonly used in different types of warehouses, assigning according to the operations inherent to the activity.
- From a conveniently characterized case of storage, activity and type of products with a limited budget, simulate the search and selection of different types of equipment and proper installation evaluating their cost-quality ratio.
- Explain the need to prepare a maintenance plan for the equipment and facilities of the warehouse based on their technical specifications, applicable regulations, planned work plan and activities in the warehouse.
- Identify the elements of cost of maintenance or infrastructure of the warehouse within the efficient management of the warehouse.
- Describe the procedures for monitoring and controlling a maintenance plan, defining alternatives in case of unforeseen events.

- Based on the information contained in the technical manuals of an assumption of maintenance equipment in a warehouse:
    - Determine equipment maintenance costs
    - Prepare the maintenance plan, indicating the periodicity with which the specific operations should be carried out and without interfering with the usual activities of the same.
    - Specify the profile of the personnel responsible for its implementation or monitoring.
- Explain the items and concepts that must be taken into account to prepare an estimated budget for the warehouse service.
- Describe the variables that determine the cost of storage: administrative costs, space utilization, operational, obsolescence and deterioration, financial, and others.
- Decompose the warehouse activities for measurement and valuation into work units and time using spreadsheets.
- In an environment of continuous improvement of the warehouse, assess new acquisitions and innovations of material, handling equipment, merchandise tracking systems, comparing the costs and benefits of different options based on the consultation of catalogues and databases.
- Specify the acquisition price and operating cost criteria for the storage and handling elements.
- Calculate the costs of the storage service.
- Explain the fundamental concepts related to:
    - Quality of warehouse service.
    - Customers and suppliers internal and external to the warehouse.
    - Development of protocols regarding procedures and documentation.
    - Training needs and improvement of warehouse personnel.
- Analyse the elements and protocols necessary for the effective implementation of a quality system in a warehouse.
- Given a practical assumption, properly characterized, of warehouse management: calculate the indicators that measure the quality of the storage and distribution service, deviations in the forecasts, percentage of errors, percentage of returns, loss of goods, index of obsolescence of goods in the warehouse, among others.
- From an assumption of historical data on incidents or habitual claims produced in a warehouse service:
    - Draw conclusions.
    - Explain the measures that could be applied to improve the quality of the service.
- In a practical assumption of warehouse services, describe systems and techniques to assess the level of customer satisfaction.
- Describe the methods commonly used in the study and measurement of times of the warehouse service processes.
- Define the processes to be measured and ratios to be used that allow comparisons to be established and calibrate the efficiency in the operation.
- Arguing the importance of time analysis and making proposals to improve management that allows the elimination of bottlenecks, waiting times between processes, queues, delays among others.

- Determine the methods, variables and indicators that allow monitoring and evaluation of warehouse staff performance.
- From a warehouse assumption in which loading and unloading operations proper to the warehouse are conveniently characterized:
    - Calculate the times of the activities carried out.
    - Propose and define the necessary modifications in order to increase the levels of efficiency, productivity and work ratios.

Learning Outcome Unit 2

Simulation Module O4 – Logistics Warehouse Simulation Module	**Job profile** Warehouse Technician/ Employee	**Weight**
Name of the Learning Outcome Unit LOs Unit 2: Manage and coordinate warehouse operations		
Autonomy/Responsibilities ▪ Organize daily the operations and merchandise flows of the warehouse guaranteeing the quality of the warehouse service. ▪ Coordinate the daily entry and location of goods in the warehouse following the specifications received and optimizing the storage process. ▪ Manage daily the outbound flows of goods from the warehouse, supervising the application of order preparation techniques suitable for shipping. ▪ Control the stock of the warehouse, supervising the procedure and the established norms to identify deviations from the inventory and propose corrective measures. ▪ Manage the daily activities of the warehouse staff in accordance with the work plan and the specifications received to ensure the effective and effective development of the warehouse activities.		
Skills ▪ Apply techniques for organizing activities of different types of warehouses, optimizing the available resources. ▪ Manage the order preparation processes of the different warehouse operations guaranteeing their integrity to their destination and respecting the specifications received. ▪ Prepare inventories applying stock control techniques detecting failures, errors or periodic losses of the warehouse stock. ▪ Apply correction procedures for the incidents of the merchandise storage process. ▪ Use appropriately warehouse management systems and applications.	**Knowledge** ▪ Planning and control of warehouse operations and activities. ▪ Receipt and verification of goods receipts and exits. ▪ Organization of merchandise flows. ▪ Stock control reports and results: security stock, average stock, movement ratios, deviations, stock breaks among others. ▪ Control of order preparation. ▪ Work orders. ▪ Checking the labeling and signaling of the goods. ▪ Coordination of teamwork in the warehouse. ▪ Suggestions and contributions of training and information needs.	

Assessment criteria

- Describe the activities and work in the reception, movements and exits of goods from the warehouse
- Given certain operations and activities in a warehouse, use computer applications for task management or work organization schedules.
- Based on the characterization of a warehouse and certain inputs and outputs of goods with different products:
  - Describe the resources and systems necessary for loading / unloading and movements of goods in the warehouse subject to the rules and recommendations recognized by the organization.
  - Represent in a diagram the operations and flows of goods in the warehouse.
  - Prepare work orders for the warehouse team.
- Identify the most frequent norms on priorities of entry and exit of goods from a warehouse.
- Assess the implication of the implementation of the quality system in the warehouse.
- Identify information on the merchandise that enters the warehouse, coding and smart tags, for its registration in the database and tracking of its traceability.
- Based on the characterization of an assumption of goods receipts in a warehouse:
  - Assess the identification of the goods to ensure the traceability of the goods.
  - Describe the steps to follow to verify the adequacy of the merchandise with the information available in the warehouse, delivery note, among others
  - Describe the possible incidents and measures to be taken if you are not satisfied with the delivery.
  - Interpret merchandise information about the handling and conservation standards contained in the label
- Distinguish the different types of order preparation in production, commercial and service companies, explaining the most used classification criteria.
- Interpret order orders and merchandise preparation for shipment to destination.
- Describe the forms of preparation of orders differentiating the methods of extraction, by order, sector, multiple, among others.
- Identify the documentation that must accompany the merchandise in the expedition as well as the one that must remain in the warehouse.
- Interpret the current signage and labeling regulations and define the relevant data that must appear on a label so that the merchandise is easily identifiable, and its characteristics are taken into account during handling.
- Identify the main norms and recommendations that regulate the characteristics, composition, dimensions and systems of packaging.
- Describe the different forms and means of grouping packages that are currently used and that facilitate the handling of the goods.
- Identifying the variables involved in the calculation and the speed of rotation to stock control.
- Explain the interpretation of the concepts of maximum, average, maneuver, safety and minimum optimal stock.
- Differentiate and explain the purpose of the different types of inventories and the different valuation methods: FIFO, PMP, LIFO, among others.
- From a conveniently characterized case, prepare an inventory simulating the physical accounting of stocks and detecting existing errors and losses.

- Describe the most common incidents that may occur in the warehouse and their impact on the cost and quality of service.
- Characterize the different measures to be taken in case of breakdown of equipment or facilities in the warehouse.
- Describe the general procedure that must be followed in the return of merchandise from the client or the supplier, explaining the repercussions generated in the process regarding its registration, treatment, cost and level of quality of service.
- Describe the functions that integrate the different applications that can be used in a warehouse management system (WMS).
- Register the information of the warehouse management software program by registering, deleting and modifying the master and operational files, inputs and outputs, permanently updating the database.
- Given some data related to the management of a warehouse use the computer application to:
    - Prepare the database that allows the monitoring of stock management.
    - Calculate the own management ratios of the warehouse: stock level, safety stock, turnover index, coverage index, stock break index, obsolescence index, utilization coefficient of the gap and the entire space among others.
- From the information existing in the different computer programs, integrate data, text and graphics so that the information treated is presented in an appropriate manner.
- Use specific computer applications for material identification, order management, extraction and logging of warehouse exits.
- Assess the implementation of new technologies for warehouse management, such as radio frequency identification (RFID) systems, laser-guided vehicles, and other technological innovations that occur in the automation and computerization of the warehouse.
- Explain the necessary elements to ensure the traceability of goods at the product level and associated information, complying with the regulations related to it using warehouse management systems.

Learning Outcome Unit 3

Simulation Module O4 – Logistics Warehouse Simulation Module	**Job profile** Warehouse Technician/ Employee	**Weight**
Name of the Learning Outcome Unit LO Unit 3: Collaborate in the optimization of the logistics chain		
Autonomy/Responsibilities		
▪ Coordinate activities within the logistics chain by monitoring the merchandise to ensure traceability and quality of logistics operations. ▪ Prepare the budget for the logistics chain, making the necessary calculations and considering all the costs associated with the operation, to control possible deviations. ▪ Manage operations subject to reverse logistics, determining the treatment to be given to returned goods, to improve the efficiency of the logistics chain. ▪ Manage information flows with customers and suppliers proposing corrective actions to improve the quality and efficiency of the logistics chain.		

▪ Resolve unforeseen events, incidents and claims that occur in the logistics chain, according to the company's quality plan to ensure the satisfaction of internal and external customers.	
Skills	**Knowledge**
▪ Define the phases and operations to be carried out within the logistics chain according to the levels of service and quality established to track the goods. ▪ Calculate logistics costs based on the variables involved in the execution of the distribution service, to prepare a budget for the logistics service. ▪ Analyze the most common incidents in the logistics chain, proposing appropriate procedures to solve them. ▪ Use the appropriate information and communication systems for the management and attention of relations with the client / supplier of a logistics chain.	▪ Organization of merchandise flows within the logistics chain. ▪ Tracking the goods. ▪ Logistics management costs. ▪ Cost budget. ▪ Corrective measures on costs. ▪ Proposals to improve the efficiency of the logistics chain. ▪ Quality and efficiency indicators of the logistics chain (KPI). ▪ Report of conclusions, improvements and corrective actions. ▪ Resolution of incidents and claims of customers and suppliers. ▪ Plan for alternative contingency resolution actions.
Assessment criteria	
• Describe the basic characteristics of the logistics chain identifying the activities, phases and agents involved (suppliers, production centres, primary transport, transit areas, warehouses, warehouses, purchasing and distribution centres, carriers, points of sale, customer) and the relationships between them. • Represent by diagrams the physical, information and economic flows in the different phases of the logistics chain, calculating the total duration of the process and the critical path. • Differentiate the objectives and advantages of the logistics chain management as an integrating process of suppliers and customers. • On the basis of a duly characterized case study, establish the basic elements of the database that collects the information necessary to track the merchandise throughout the logistics chain, • Assess the management of reverse logistics operations for the optimization and closure of the logistics chain. • Describe the causes for implementing reverse logistics systems, regulation, return policy, seasonality, load units among others. • Describe the direct and indirect, fixed and variable logistic costs, considering all the elements of a type logistics operation, from its origin to its destination. • Assess the different alternatives in the different models or strategies of merchandise distribution: own logistics network, distribution centres, network of own or leased warehouses, direct shipments, among others. • Calculate the unit cost of a logistics operation based on the established conditions • List the situations in which unforeseen costs may occur and analyse the possibility of passing it on to the client. • Prepare the cost scandal of an operation based on the conditions established by applying the valuation standards proposed internationally (incoterms, among others).	

- Propose measures for the minimization of logistics costs and maximization of profitability, valuing corporate responsibility in the management of waste, waste, expired returns and packaging among others.
- Identify the expenses and responsibilities attributable to each of the agents in the logistics chain.
- Based on a duly characterized case study, apply cost allocation criteria between suppliers and customers depending on the means of transport and the way of contracting the service.
- Explain the concept of incidents and unforeseen events in the provision of a distribution service.
- List the factors that may cause incidents in the logistics chain: loading and unloading, transport and delivery of goods among others.
- Describe the most common incidents that may occur in the logistics chain and the ratios and quality indicators of the KPI process (Key process indicators).
- Define systems for tracking and tracking merchandise through satellite, radio frequency and GPS communications, among others, to control and guarantee merchandise location and assignment of responsibilities.
- Explain depending on the type of incident, the place and the phase of the chain in which it occurs, to whom it is attributable and what solution is given.
- Describe a system for controlling and recording incidents (documented) in which at least concepts such as: type of incident, customer, supplier, transport and product are contemplated.
- Describe the main utilities of information and communication systems in the logistics chain.
- In different practical cases, use information and communication systems with the agents involved in the chain as specified.
- Before a verbal, oral or written communication, interpreting the information and orders received.
- Interpret and analyse written information in the field of merchandise storage.

8.2 O6 Educational standards

Simulation Module O4 – Logistics Warehouse Simulation Module
Entry Requirements
• 16 years or older • A minimum level of English is not necessary • Be in possession of a level 1 professional certificate of the same family and professional area for level 2 or a level 2 professional certificate of the same family and professional area for level • Have sufficient training or professional knowledge to enable training to take advantage.
Language
The tool is available in 5 different languages: English, French, Spanish, Italian and Dutch.
Learning content
TRAINING MODULE 1 DESIGN AND ORGANIZATION OF WAREHOUSES - Warehouse design - Warehouse organization

- Maintenance, equipment and facilities of the warehouse
- Cost and budget of the warehouse
- Quality for the improvement of the service in the warehouse

TRAINING MODULE 2 MANAGEMENT OF STORAGE OPERATIONS

- Stock and warehouse management
- Order management and preparation
- Inventory management and preparation
- Application of warehouse management computer systems

TRAINING MODULE 3 OPTIMIZATION OF THE LOGISTICS CHAIN

- Phases and operations in the logistics chain
- Reverse logistics
- Optimization and logistics costs
- Distribution networks
- Management of contingencies and incidents in the logistics chain
- Information, communication and supply chain

MODULE OF NON-LABOR PROFESSIONAL PRACTICES OF ORGANIZATION AND MANAGEMENT OF WAREHOUSES

- Methods for optimizing space and time in warehouse organization
- Estimate of cost and budget of operation of the warehouse
- Maintenance of equipment and installations
- Management of the daily work of the warehouse.
- Distribution and delivery of orders
- Information and communication systems applied to the warehouse.
- Integration and communication in the workplace

Selection of Trainers

- Bachelor, engineer, architect or corresponding degree or Professional Certificates of level 3 of the professional area of commercial logistics and transport management
- Professional experience required in the field of competence units

Training materials

- Personal computers in local network with Internet connection.
- Teleprocessing stations fax, telephone, PDA.
- Radio frequency systems (RFID).
- Computer applications: word processors, spreadsheets, databases,
- Specific warehouse organization and management programs,
- Applications for task management and information and communication systems,
- Intranet and email.
- Peripheral computer elements for information output and input.
- Telematic installations, supports and archival materials.
- Electronic agenda and office supplies.
- Applications for monitoring and control of the equipment.

Assessment and Validation

- **Evaluation of acquired learning:** formative, continuous and global. Based on the qualification criteria defined by the trainer embodied in the teaching program. The qualification criteria will include written exams and real practices using the WMS simulator.
- **Evaluation of the learning process:** in the same way that the learning acquired by the student is evaluated, the learning process itself will be evaluated where the trainer is included.

Duration Training Hours

- **Unit 1 Organization of the warehouse** (110 hours) 6 ECVET Credits
- **Unit 2 Management and coordination of warehouse operations** (140 hours) 8 ECVET credits
- **Unit 3 Collaboration in the optimization of the logistics chain** (90 hours) 5 ECVET credits

Training Methods/Tools

The learning will be mixed, being able in the first stage the exclusive use of the simulator in the game mode and in the last place when the students' abilities and knowledge have been developed. In a second stage the game is extrapolated to a real situation in real warehouses.
Finally, learning is completed with training in work centres.
The competences that must be developed in these practices in business are:

- Use the appropriate computer systems and applications for warehouse management.
- Apply maintenance plans for equipment and facilities following the regulations and recommendations of the manufacturer.
- Use resolution and negotiation strategies in various conflict situations in the warehouse group
- Perform order preparation and conditioning guaranteeing integrity, speed and quality of service
- Perform inventory control by applying efficient techniques and means to detect errors and losses.
- Propose corrective measures to minimize the negative impact of the most frequent incidents, after detecting them.
- Participate in the work processes of the company, following the rules and instructions established in the workplace.

The tools that will be used are here listed:

- WMS software
- Internal access to documents about quality, procedures, instructions, safety and hygiene standards, etc.
- Access to calculator
- Access to basic office tools (word processing, etc.)
- Communication with printer to print documentation and labels.
- Communication with barcode reader.

9. O7 Customs Practices Game

9.1 O7 Competence standards

Learning Outcome Unit 1

Name of the "Simulation Module" Customs practices	**Job profile** Customs clerk	**Weight** 100%
Name of the Learning Outcome Unit LO Unit 1: Coordination of the customs clearance process		
Autonomy/Responsibilities ▪ Following and implementing the customs operations, in particular of the customs clearance operations; ▪ management of the exchange of documents produced by the actors of the process: ▪ relationships with external actors and the with Sales Department (Transport Services) of the MTOs/Transport Operators.		
Skills	**Knowledge**	
She/he is able to: ▪ understand the timeline of the process; ▪ apply customs regulations; ▪ read and understand customs documentation; ▪ manage documentation of the customs clearance process; ▪ relate with the other actors of the process; ▪ relate with the supervisor of the customs office.	He/She knows: ▪ the procedures of the customs clearance process ▪ the actors who are involved in the customs clearance process ▪ the Transport Laws and the Customs regulations, ▪ Incoterms, Customs and Transport Documents, Transport Modes and means	
Assessment criteria ▪ Survey for the Customs Practices Simulator; ▪ Simulation Module (Toolkit);		

9.2 O7 Educational standards

Learning Content - **THE CUSTOMS PROCESS** (Export/Import procedures) - **THE REQUIRED DOCUMENTS** (Intermodal transport document, commercial invoice, Packing List, Bill of Lading B/L, DAT/T1, CMR, customs bill for the introduction of goods in Warehouse A3/4, customs bill for the complete extraction of goods from A4/A3); - **DESCRIPTION OF THE SIMULATED PROCESS**
Selection of Trainers The targeted trainers are VET teachers or professionals who master the theoretical and practical knowledge of transport and logistics.

Trainers must be able to use and explain to learners the elements presented by the tool. They will even be able to deepen the elements covered with respect to the provided manuals and learning materials.
Teachers/Trainers will also be able to identify the elements to which students had difficulty responding and adapt their class regarding it.

Training Materials

The toolkit provided (game simulator, manual, learning materials), plus the following list of books, articles indicated and suggested below or eventually suggested by the trainer itself.

Assessment and Validation

Teachers can assess the degree of learning of the students by:

- Providing them with the questionnaire pre and post-test regarding the Customs Practices simulator. This questionnaire considers the student's knowledge before and after using the tool.
- Score from completing each part of the simulator game;

Training Unit/Module e Sub-Units

According to the Competence standards. Sub-units may be planned by teachers also according to the teaching program.

Duration/Training Hours

- Theoretical class: LOs Unit 1 (6hours)
- Presentation of the simulator (introduction) + Use of the simulator: 2h00

Training Methods

- frontal lectures for the theoretical parts;
- frontal lectures for introducing the game simulator;
- interactive use of the simulators in schools' laboratories/internships;

Other transdisciplinary uses of the game simulator are possible:

- teachers can use it in English language to let students learn and discuss the technical glossary in the worldwide used language;
- English teachers can use the tool with students to make them familiar with the language.

Entry Requirements - Selection of Learners

The tool can be addressed to the following students' groups:

- Students from EQF level 4, in particular to acquire knowledge in school training, to use as a review before the final exams or before the internships;
- Students from EQF level 5, in particular to review knowledge already acquired, to test student's knowledge or before the internships;

Other uses:

Even if the tool is mainly intended for higher EQF levels, it is possible to use it with students from EQF level 3 as a tool for introducing them to vocational training/transport&logistics field.

Minimum set of knowledge and competence:

The user must be familiar with the knowledge relating to:

- Basics, "general" information on supply chain processes, intermodal freight transport;
- Even if the toolkit is used in another language, it is recommended to have a basic knowledge of English.

Minimum age

Regarding the level entry recommended, the minimum age is 14/15 years old.