TOPIC 5 – Horizontal Acitivities

Objectives / Tasks and Results of Horizontal Activities in DESTINY

Structure

I. What are horizontal activities

II. Objectives and milestones

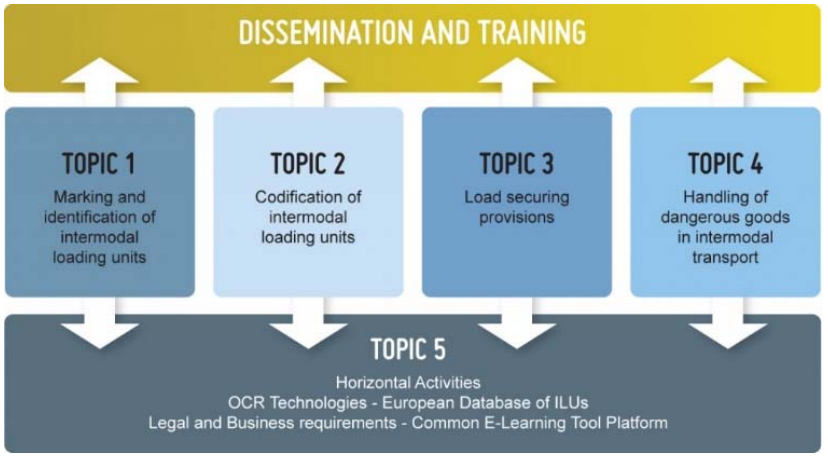
III. Tasks and findings of topic 5

- II.1 OCR technologies
- II.2 European Database for ILU-codes (concept)
- II.3 Legal and business requirements
- II. 4 e-learning tool (platform)

IV. Summary

I. What are horizontal activities?

- Directly or indirectly connected to TOPIC‘s 1 to 4
- Beneficial technologies or concepts that either …
  - … help to improve operations and procedures in CT
  - … help to disseminate knowledge
  - … help to improve transparency of CT
- These „tangent“ activities are
  - OCR technologies
  - Intermodal database
  - Legal / business requirements
  - E-learning



II. Objectives and milestones

OCR technologies (relation to TOPIC 1 – 4)

- Objective: research and summary on the basic functions, advantages and applications of OCR technologies in ports and inland CT terminals
- Milestone: Report on OCR technologies (best practise, example)

European Database (relation to TOPIC 1 – 2)

- Objective: identification of possibilities to implement a European Database, based on the ILU-code, for speeding up processes in terminals
- Milestone: Recommendation (paper) on the implementation of EU ILU-database

II. Objectives and milestones

Legal and business requirements (relation to TOPIC 3 – 4)

- Objective: Identification of responsibilities along the supply chain, with a focus on dangerous goods and load securing (SGKV)
- Milestone: Report on current national and international regulations for CT and their shortcomings (countries TOP 5: G, B, F, I, NL)

eLearning platform (relation to TOPIC 3 – 4)

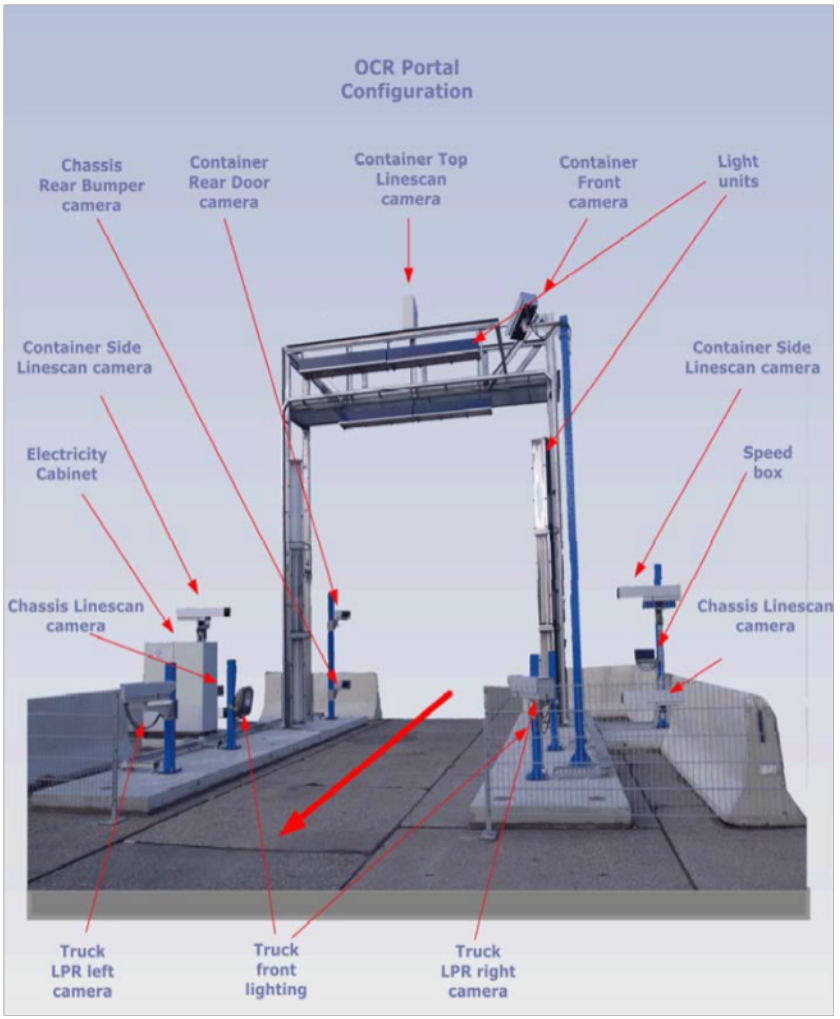
- Objective: concept for an online portal to store information on TOPIC's 3 and 4 as well as giving teaching modules for training seminars
- Milestone: Concept and instalment of eLearning platform

III.1 OCR technologies (definition)

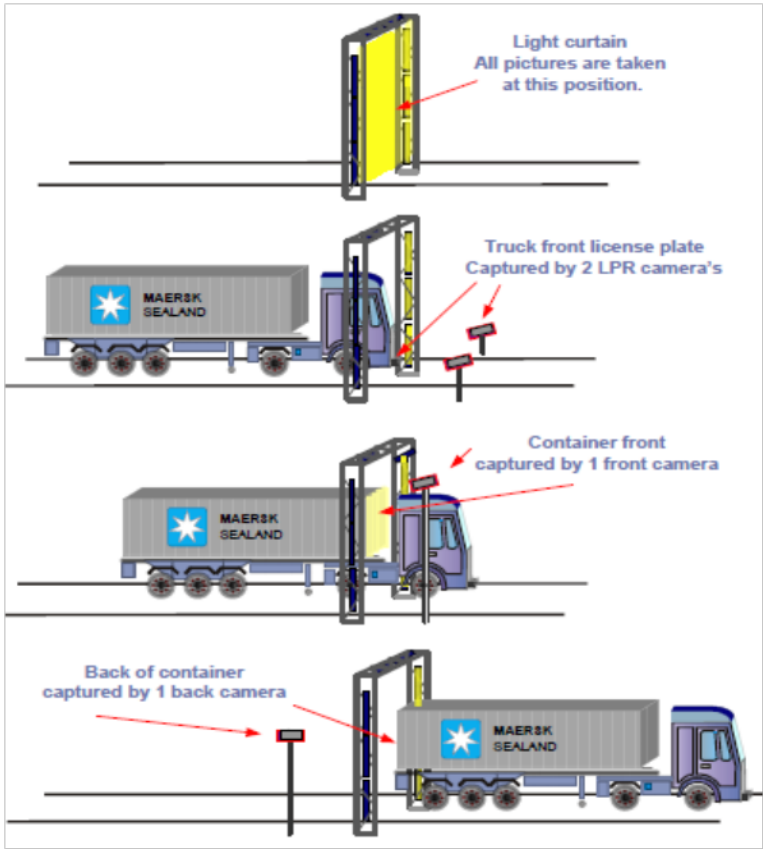
- OCR: optical character recognition
- Technological method of digitizing printed texts and transferring them into editable data for further data processing.
- Realised at a grand scale in terminals to automatically identify and relate data to loading units via BIC code
- Transferrable since the implementation of ILU code in inland ports and terminals
- Functions:
  - presence detection and triggering
  - image capture
  - OCR software algorithms for pattern recognition
  - exception management software applications
  - electronic data integration and communication with other systems

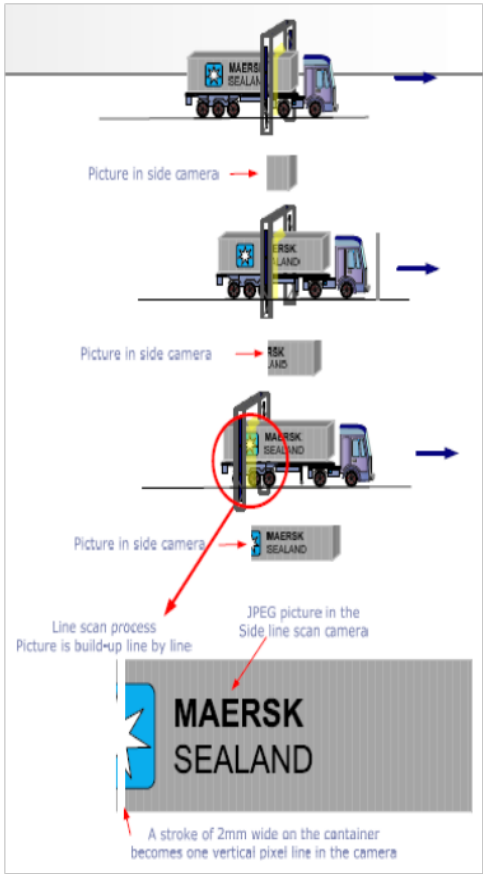
III.1 OCR functions

- Portals for ID of truck or railcar with cameras take „line shots“, so called strokes, at high speed
- Computer assembles the shots
- OCR image software identifies Code of loading unit
- Other features, such as driver images, damages etc. are documented in the database



III.1 OCR processing





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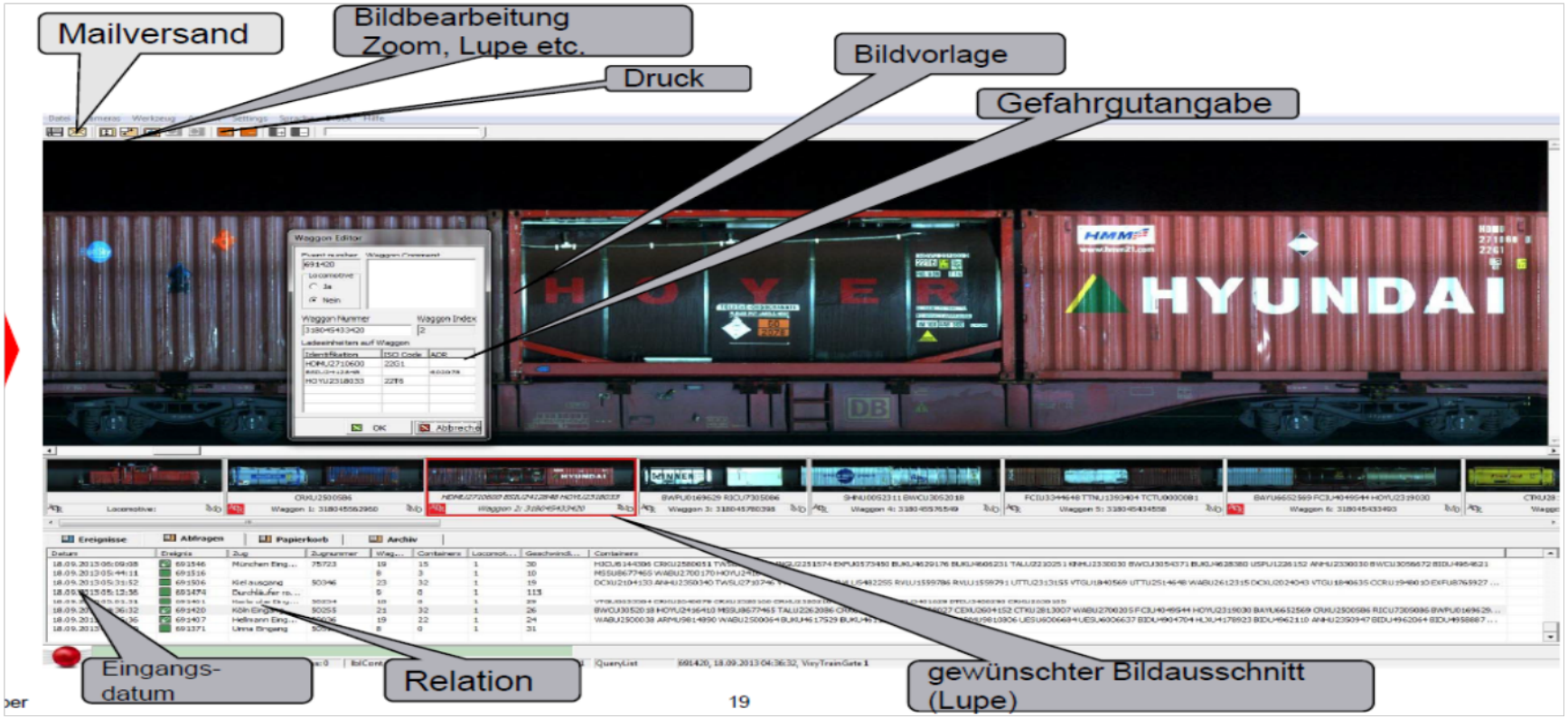
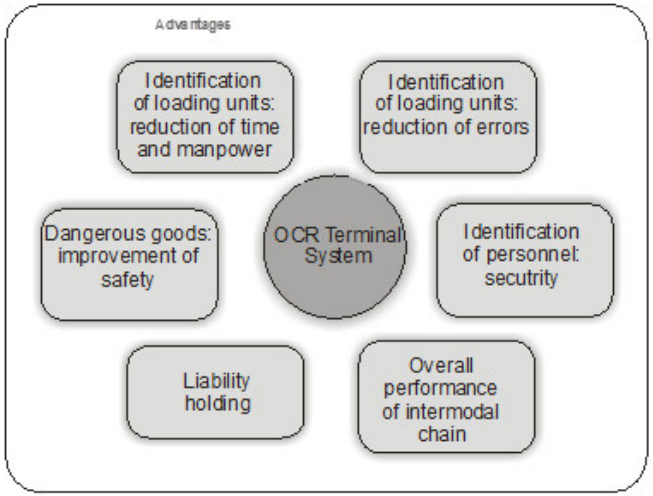


III.1 Advantages

- Identification: Reliability >90 % => reduction of errors
- Significant reduction in liability claims
- Safety (personnel) and security (dangerous goods)
- Costs starting at 125.000 EUR (truck gate)
  + 40.000 EUR implementation
- Overall improvement of performance
  through the reduction of manpower and time



III.1 OCR - results

- Positive effects of an automated entry and exit identification of loading units, drivers and vehicles not only speeds up terminal processes, it also increases security, safety and liability
- The OCR technology, imbedded into the terminal IT-systems, helps to identify and document loading units, using the owner code. Next to the B.I.C. code, the enactment of the EN13044 has made it possible for all loading units to be automatically recognised and documented (swap bodies, semi-trailers)
- To have a broad positive impact on intermodal chains and the planning of such chains, OCR implementation must move away from stand-alone solutions and become integrated in process planning. This also refers to the infrastructure, the processes and the technical solution, which must interact seamlessly. (Funding?)

III.2 Database (EU, ILU-Code)

- Aim: establish a central EU-wide information source for loading units
- Problem: depth of information
- Possible content: owner-ID + LU-ID + codification data
- Usability: ID of owner, ID of ILU, ID of specifications
- User groups:

User group	Owner ID	Loading unit ID	Codification ID
Forwarder	Important	Important, but not necessarily via a centralised database (nice to have)	Not important, nice to have
Terminal operators	Important	Important, but not necessarily via a centralised database (nice to have)	Not important, nice to have
Carriers / rail companies etc.	Important	Important, but not necessarily via a centralised database (nice to have)	Not important, nice to have
Manufacturers	Important	Of little importance (using their own systems)	Of little importance (using their own systems)
Customs / Law	Important	Important	Important
Coding entities	Important	Important	Important
Customers	Important	Not important	Not important

III.2 User specifications

Mandatory features:

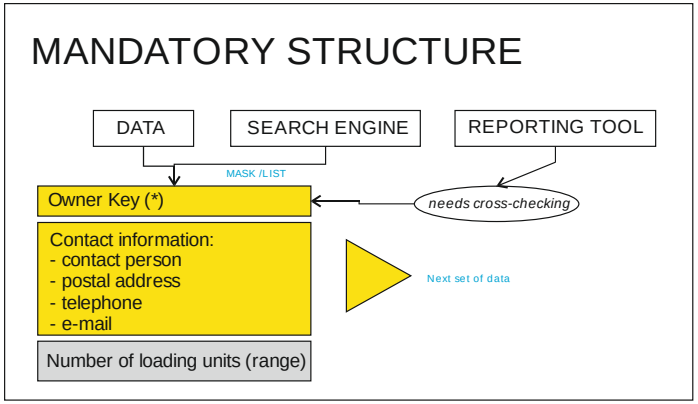
- Information on the owner: the ILU code, with a direct relation to contact data of each owner
- Contact data: the data of the owner of a loading unit
- Search engine: look up codes and identify contact data of the owner
- Reporting tool: get in contact with database management and report false codes, code changes and changes of the range of loading units under one owner code. The information then needs to be checked by database management.

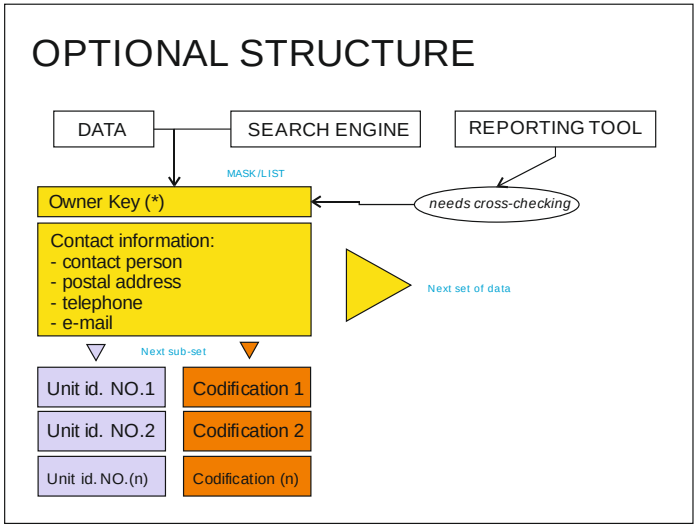
Optional features (may be added at a later stage):

- *Individual ID of loading units: each loading unit will be identified with its unique and complete ILU-code, addressing additional information to the unit, such as type, measurements, entry into service etc.*
- *The codification information on each loading unit: specific parameters and limitations*
- *History of owners: Listing of previous owners and date of acquisition / sell*

III.2 Structure

- Suggested structure represents a construct that does NOT rely on owner data other than registration data
- Modular construction, can be elaborated at a later stage
- Focussing on owner identification
- Direct access to owner contact
- Possibility to report errors
- All facts relevant to CT market





III.3 Legal and business req.

- SGKV: report on current national and international regulations for the intermodal transport and their bottlenecks (related to TOPIC 4)
- Content: legal regulations and issues along the CT supply chain with a focus on dangerous goods (most complex regulations)
- Based on expert interviews in the five countries: GER, FRA, ITA, BEL, NDL
- Report currently in preparation
- National regulations to be obtained in a EU-wide database by ERA:
  https://webgate.ec.europa.eu/risdb/prepareQuickSearchRule.do

III.3 Legal and business req. - Findings

- Based on: Expert interviews (operators)
- Strong regulation of the transport of dangerous goods in the EU, both international ADR, RID (annex to COTIF), IMDG, AND and national level
- National regulations do need more harmonization e.g. maximum storage time for loading units (e.g. Italy), perhaps internationally
- Due to detailed regulation, multi-checks occur along the supply chain. A standardized procedure could help (e.g. certification when handing over loading unit to the next supply chain partner)
- Operational problems are the most frequent problems (e.g. labelling of ILU‘s: costs, markings may get lost, etc.)

III.4 eLearning tool

- A central information service to disseminate knowledge with CT relevance, in this case “load securing”
- Web-based platform with three basic functions:
  - Information centre / knowledge base (download of documents, sheets, relevant data)
  - Sharepoint / communication platform (feedback on documents, articulation of requirements)
  - Training programme (courses for in-house seminars, templates as an aid for exams

- **3 systems: Moodle, Ilias, eFront**

III.4 eLearning tool (user req‘s)

- **Web-based application:** central point of information
- **Web ressources:** minimal requirements, php5 and MySQL as standard
- **Cost effectiveness:** open source, community driven
- **Multimedia content modules:** movies, textfiles, slides and audiofiles with standard formats
- **Multi-language modules:** support of different languages for the menues, at least GE,FR,EN
- **Test / exams:** interactive question/answer module for inhouse seminars
- **Sophisticated user management:** minimal requirements student/teacher/admin with group assignment

=> MOODLE

III.4 Concept

- Development of 4 modules for information dissemination and exams on load securing (TOPIC 3)
- 5 modules with specified content, target users and documents
- Each modules ends with a test, between 5 and 15 questions, while module 5 is a complex exam

Module No. 1	Load Securing – Basic Knowledge			
Objective	*Content*	*Users*	*Output*	*Test Module*
The module will give basic knowledge on load securing on road and rail from a technical point of view.	The module should address the following topics: *Terminology load security / CT* *Legal requirements (general) / Necessity* *Methods* *Applied equipment*	Target groups are: *Customers of Combined Transport, such as forwarders and transport companies* *Terminal crew*	Documents to be deployed by the learning tool. *Ppt(x): Terminology and Necessity* *Doc/pdf: Methods*	Obligatory test for users: *10 Questions (Yes/No/Multiple Choice)* +

Module No. 2	Load Securing – Loading Units		
Objective	*Content*	*Users*	*C*
This module informs about the specific requirements of different loading units and	The module should address the following topics: *Requirements: semi-trailers* *Requirements: swap-bodies* *Requirements: containers*	Target groups are: *Combined Transport, such as forwarders and transport companies* *Terminal operation & crew* *Rail operation*	*D*

Module No. 3	Load Securing – National and Internatio		
Objective	*Content*	*Users*	*C*
The module will give an overview over the most important international standards, explaining the content, as well as selected national standards	The module should address the following topics: *Content of standards such as B-Cargo, BGL, VDI 2700, UIC, EN 12195, CTU* *Procedures described and differences of the standards*	Target groups are: *Customers of Combined Transport, such as forwarders and transport companies* *Terminal operation & crew* *Rail operation* *Carriers*	*D*

Module No. 4	Load Securing – Dangerous Goods			
Objective	*Content*	*Users*	*Output*	*Test Module*
This module addresses the specific requirements for dangerous goods, to establish basic knowledge for the handling of such goods	The module should address the following topics: Classifications / markings, such as UN Number, Class, Packing Group, GEVI Code etc. Handling of dangerous goods on terminals Legal requirements road / rail	Target groups are: *Customers of Combined Transport, such as forwarders and transport companies* *Terminal operation & crew* *Rail operation*	Documents to be deployed by the learning tool. *Pdf/doc(x): Classifications and markings* *Pdf/doc(x): Relevant nat./int. European laws (overview)* *ppt(x): Terminal requirements*	15 Questions (Yes/No/Multiple Choice) module + Possibility to comment the module (email or other means of communications)

Module No. 5	Load Securing – Test / Exam			
Objective	*Content*	*Users*	*Output*	*Relevance*
Modules is designed as a testing module, summing up all four previous modules	The module should address the following topics: *Selected content from previous four modules*	Target groups are: *Terminal operation & crew* *Rail operation* *Carriers*	*No output* *Test certificate*	30 Questions (Yes/No/Multiple Choice / Free answers) + 2 example (calculations) that will test the calculations necessary to secure load according to a selected standard

for calculations, calculation of g-forces and necessary securing measures (script), possible with calculation tool (xlsx)

Possibility to comment the module (email or other means of communications)

IV. Summary

OCR: report drafted, which includes definition, advantages, technology and an example

Database: recommendation given, minimal approach (owner identification) due to possible inconsistency of data, which is required by users, in a more complex model – suggestions and recommendations as a drafted report

IV. Summary

Legal and business requirements : report on legal requirements and gaps of dangerous goods transport in preparation. Drafted in July.

eLearning: suggested programme - Moodle. Content for training course developed (5 training units). Both software and training to be implemented before end of project.

Thank you!