


DESTINY
DEPLOYment of STANDARDS for INTERmodal efficiency
www.destiny-project.eu

Gate-Automation mit OCR-Technologien

Gate-automation with OCR Technologies

Workshop-Conclusions in English

Mannheim / Ludwigshafen, 17.10. 2013


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2013-10-17
Chart 1


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Conclusions 1/5

Adapted after the meeting

- Increasing number of intermodal participants, operators and railway undertakings as "customers" of the intermodal terminals
- Require and efficient interface management at the terminal-gates
- Access control for security of terminal
- In addition legally mandatory for operation units regulated in the dangerous goods legislation (who is inside the terminal?)
- Change of liability on loading units at road, rail or inland waterway entrance or exit
- Documentation of entry or exit of vehicles (trucks, chassis, rail wagon), loading units and persons
- Recognition of wagon numbers (with an increasing rate of recognition despite dirt, damage, or adverse mounting)
- Comparison with announcement (wagon / loading unit numbers)
- Acceptance of "photo" documentation as a acknowledgement of receipt by (almost) all railway undertakings


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Chart 2



Conclusions 2/5

Adapted after the meeting

- Documentation of (physical) condition at entrance
 - Faster and more objective compared to paper log sheet,
 - Prevent from unjustified indemnification,
 - Reduce the number of "tried" claims
- and at exit, too,
 - own errors could be recognised, corrected and customers can be informed proactively
- Recognition of loading units (container, swap bodies, semi-trailers)
- Recognition of loading unit identity (owner) via BIC or ILU-Code respectively with very high rate of recognition
- Recognition of labels (placards) possible
- In addition legally mandatory for transports of dangerous cargoes where the terminal (operator) becomes the "shipper" and is responsible for labelling
- Recognition of the presence of seals at the doors of container (not the seal number!) possible



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Chart 3



Conclusions 3/5

Adapted after the meeting

- „Automated" gates, that means high recognition rates of the OCR-system and manual post-processing at the video monitor (magnifier, alternative perspective, e.g. opposite camera, roof) and only single inspection at the track or at the gate
- Operation as „stand-alone"-system, with and without access control, as well as in particular integration into terminal operation systems
- Assigning to a business case (terminal operation system)
- Make available "pictures" for customers or on request
- Accelerated processes by support of own personnel
- Independent from weather conditions and day/night time
- Wide acceptance by customers and terminal coworkers
- Gate on terminal own area or in the public (rail) infrastructure (acceptance of e.g. DB Netz, authorisation by e.g. German rail regulator EBA obtained)
- Camera with „Line Scan"-technology and LED-illumination (energy saving) are state-of-the-art and practices many times (sea ports, RoRo-ports, intermodal terminal sin the inland)



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Chart 4



Conclusions 4/5

Adapted after the meeting

- Two suppliers (Camco and LMT/Visy) dominating the market that means competition
- Basically similar technologies with differences in the technical features in details:
 - Full solution including structural works vs. focus on intelligent systems
 - Software independent from camera vs. own software for specific camera
 - Number of terminal operation systems already interfaced with
 - Additional camera recognition of condition of chassis and trailer possible
 - Also (very) large distances between gate and operation center possible (80km!)
 - Validation of throughput of a selected configuration possible by simulation
 - Design of menu and "kiosk"-solution, customer support, price depending on single case
 - Inauguration also possible in terminals with smaller throughput (< 100.000 LE p.a.) possible
- A solution for the barge side is under development (Camco announced it for end of 2nd quarter 2014)
- An OCR-system for cranes is under development as well
- Implementation is a full business-process-re-engineering project and not only the installation of technology, that means the infrastructure, the processes and the technical solution must fit to each other



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Chart 5



Conclusions 5/5

Adapted after the meeting

- System from air and aerospace industry as well as rail infrastructure inspection (Mermec) operate a higher speed could be adapted to intermodal terminals as well
- Loading profile control, currently done before the entrance of longer railway tunnels, could be installed for a final check at the exit of an intermodal terminal
- Weigh in motion per wheel/wheel-set could recognise an incorrect loading of a rail wagon
- Condition of wagon and its railway operation components (wheel disk, brake, and other) could be recognized while driving through in order to avoid idle times in the terminal
- Gate-Systems on the basis of a camera portal and OCR technology have become an established component of a modern intermodal terminals also in the inland and enable an efficient interface management and rapid throughput.
- The planned implementation of the ILU-Code supports this development and should be chased with respect to the further industrialization of intermodal transport



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Chart 6

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