SimConT - Simulation of Inland Container Terminals

Access to transport networks, infrastructure and nodes, Freight consolidation and transhipment, IT-technologies and solutions (for management and administration), Innovative operational solutions, Land use and spatial planning: assessment and siting of transport facilities and infrastructure, Modelling and forecasting

SimConT is a decision-support tool, based on modern simulation techniques, for efficient resource-planning and effective capacity utilization, which helps in planning of operations of inland container terminals (ICT). In the current version the tool takes into consideration all operations of bimodal terminals (road and railway). Further developments will include the extension to trimodal traffic. With the help of the SimConT tool, planned changes in the complex systems of inland terminals can be tested on their strategic, tactical and operational impacts.

SimConT allows the strategic and tactical simulation of inland terminal infrastructure and operations.
SimConT minimizes the risk of bad investments and stranded costs when (re)configurating infrastructure and capacities.
SimConT considers aspects which allow the improvement of the service quality
SimConT enables the integration of more environmental friendly transport modes in supply chains.

Benefits

• Cooperation of the actors involved
• Applied research together with daily operational practice
• Common data definition and availability of data
• Acceptance of simulation results
• Setting of targets in a common process

Success factors

Efficient public spending, Ideal utilisation of infrastructure, Competitive logistics and transport system, Acceptance and influence, Increased efficiency / productivity of logistics processes, Increased profitability, Minimising financial risks, Increased competitiveness, Increased quality, Image, Reduced emissions by optimized infrastructure planning and utilization, The risk of bad investment can be minimized.

Solution

Innovative solutions for intermodal supply chains often failed because of a lack of transparency and the prevalent complexity. Decision making was based on the experience and assessment of long time employees, external consultants and civil engineers. This decision making process always included some degree of uncertainty because of the static assessment of flows. SimConT allowed for the first time the dynamic evaluation of forecasted flows.

In contrast to open sea container terminals, inland container terminals (ICT) face other challenging optimization issues. Open sea container terminals typically handle mainly two types of containers (20 feet and 40 feet). Different container types can be stored in separated storage blocks which can furthermore be separated into import and export blocks. Although ICTs are usually constrained in their storage capacity, they are faced with a bigger container diversity, nearly no predictable delivery and pickup time windows and smaller turnover. Consequently containers have to be stored within mixed yard blocks.

Keeping in mind these characteristics, efficiently planning of extensions and rebuilding of ICTs has to be done very carefully. Therefore dynamic analyses of the maximum storing positions as well as modeling of the inbound and outbound flows are necessary in order to determine the resulting capacity requirements and the infrastructure needed (railways and road infrastructure).
SimConT is not restricted to national standards, conventions or other barriers, since it is a simulation tool tailored to the characteristics of inland terminals, which need more or less the same infrastructure all over the world.

SimConT is tailored to the special needs of inland container terminals (mix of loading units, arrival patterns of trains, focus on train-train transhipment). A qualified implementation in open sea terminals is possible. The transfer to other actors, having the same interest in intermodal infrastructure is possible.

www.simcont.net

h2 projekt.beratung KG
Hans Häuslmayer
hh@h2pro.at
+43 699 115 063 59

SimConT focuses on the support of decision makers and the management of container terminals by calculating, simulating and evaluating the outcome of newly built intermodal terminals or planned modifications in layout, setting or strategy of terminals. It is primarily intended as a decision-support tool, which helps in planning the operations of terminals. SimConT is designed in such a way that it can be applied to nearly any intermodal inland terminal or potential location in Europe and also the rest of the world. The main requirement is the special nature of inland terminals.

More Best Practice cases and information about BESTFACT can be found at: www.bestfact.net