simcon

**Analysis, Simulations & Solutions
for Transportation and Logistic Systems**

Profile

Simcon is a company offering an analysis and solutions for problems connected with the design, rationalization and optimization of transportation and logistic processes. These problems are solved for any logistic center with predominant transportation and manipulation processes. The company has developed its own tools and methodologies, which makes it a leader especially in the area of the rationalization of logistic centers with a predominance of railway transportation (e.g. marshalling yards, passenger stations, factory sidings). Using the same advanced know-how, Simcon is able to rationalize transportation processes within the operation of different types of factories, airports, container terminals, postal centers, etc.

In addition to our outstanding consulting services, we also offer development of specialized made-to-order software products, particularly in the field of simulation.

The company employs top specialists with long-term experience in transport, computer simulation, information systems development, operation research, logistics and computer graphics. The key workers of Simcon are also employees of the University of Žilina and its Centre of Excellence, which is supported by the European Union. This allows Simcon to integrate its practical experience with the theoretical research conducted on European and international level, both scientifically and professionally.

Simcon uses simulation as the primary method for finding answers to a customer's questions and problems, utilizing its unique, in-house, widely accepted and widely approved software tools.

Villon[1] is a simulation tool that provides the customer with unambiguous arguments for the design or reconstruction/reengineering of logistic and transportation systems, bringing and justifying surprisingly-high financial savings. Simcon builds a dynamic, animated, interactive, and valid model of a customer's logistic system, whether that system is already existent or only planned. Experiments with this simulation model make it possible to analyze processes, as well as to propose and verify solutions without intervening in the real system.

Ablaufberg is a software tool for the precise examination of wagon motion dynamics during the train sorting process on a hump. The simulation of dynamics serves to investigate the proper dimensions of a hump, the proper number and position of retarders, as well as to determination the optimal sorting speed on a hump. Ablaufberg is truly an invaluable tool for designing humps in the marshalling yards.

SimForm is a software tool for optimizing the simultaneous formation of group trains. Properly managed, simultaneous train formation can drastically improve the time and resource efficiency of the process of secondary sorting and of the creation of outbound group trains in marshalling yards.

[1] Villon is the new, advanced successor of the simulation tool VirtuOS, which has been extended to support the modeling of a broad range of logistic systems.

Solutions

What are the bottlenecks in the system?
We find the bottlenecks within the infrastructure (as well as within other service resources) and suggest ways to eliminate them.

How to treat changed circumstances?
We analyze the consequences of changes, such as changes in the amount and structure of production in a factory; transportation flow; technical failures; etc. We suggest optimal solutions, while considering infrastructure and other resources.

How to decrease costs spent on service resources?
We propose an optimal number and structure of transport vehicles and human resources.

How to rationalize the technological processes?
We suggest and verify new technological procedures that are performed inside the system, in order to increase the effectiveness of the system and to save resources.

How to regulate operation during various maintenance stages?
We propose and verify operation changes resulting from planned maintenance, and suggest a suitable maintenance work-schedule.

How to reconstruct and modernize the infrastructure?
We verify the efficiency of reconstruction alternatives and propose optimal operation during the individual stages of the reconstruction.

How to improve the strategies for on-line control?
We verify the efficiency of various control and decision-making strategies. A visual interactive simulation of your system can be used for training personnel in control and decision-making skills.

How to modernize the technical equipment of the node?
We investigate different variants of technical equipment and their efficiency in operation, and find solutions that will best suit your needs.

Projects

Marshalling yard **Linz VBf Ost**
Austria, 1998-1999,
Austrian Railways (ÖBB Wien)

Marshalling yard **Wien ZVBf**
Austria, 2000-2001,
Austrian Railways (ÖBB Wien)

Marshalling yard **Basel SBB RB I**
Switzerland, 2002-2003,
Swiss Railways (SBB Basel)

Marshalling yard **Mudanjiang**
China, 2001-2002,
Chinese Railways, TDJ Research Center Harbin

Marshalling yard **Hamburg Alte Süderelbe**
Germany, 1998,
City of Hamburg, DB Cargo, Haas Consult Berlin

Marshalling yard **Žilina-Teplička**
Slovakia, 2001,
Slovak Railways (ŽSR Bratislava)

Marshalling yards **Oberhausen & Osterfeld**
Germany, 2001,
Siemens AG Braunschweig, DB Cargo

Industrial sidings **VOEST Alpine Linz**
Austria, 2003,
LogServ GmbH, VOEST Alpine AG, Linz

Industrial sidings **SCA Laakirchen**
Austria, 2002,
Rail Cargo Austria, SCA Laakirchen

Industrial sidings **BASF Ludwigshafen**
Germany, 2001, 2003,
BASF Ludwigshafen

Internal factory traffic **VW Bratislava**
Slovakia, 2001,
Volkswagen Slovakia Bratislava

Passenger station **Žilina**
Slovakia, 2000,
Slovak Railways (ŽSR Bratislava)