

DISSY



HPCN TTN Network

Get there quicker

Improved transit scheduling with parallel processing

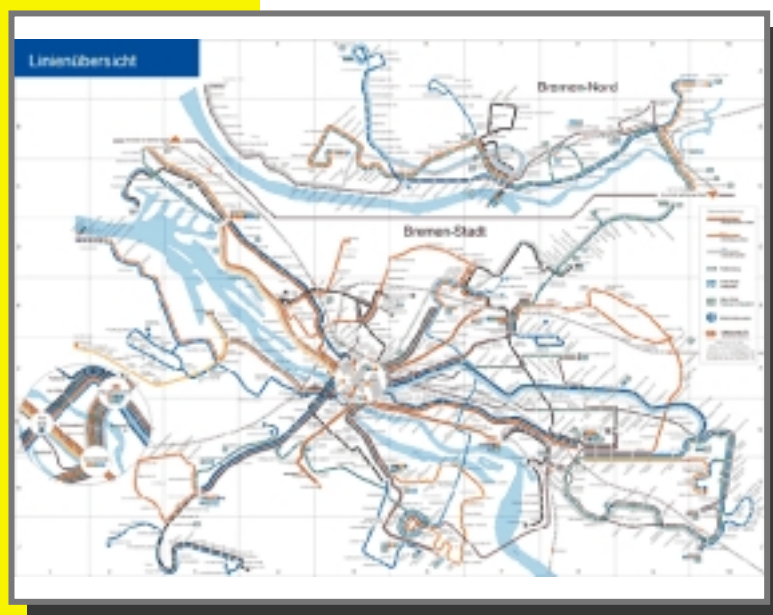
As society becomes more individualised, public transportation scheduling is growing more complex. More flexible lifestyles mean that usage patterns are more varied. At the same time, the liberalisation of the European Market will make improved service a critical competitive factor.

Better duty scheduling is a way to address both issues. Flexible scheduling can respond to daily, weekly and seasonal demand shifts. It can also improve worker satisfaction, which is central to reducing absenteeism, improving service quality and raising productivity. However, duty scheduling of large transportation networks is extremely complex and time-consuming.

Parallel computing power is the answer. DISSY – Driver Scheduling System for Public Transport – uses HPCN technology to parallelise the workload among several PCs, and applies airline scheduling techniques to create schedules quickly. The speed gained allows planners to compare alternatives and find optimum solutions in hours instead of days.

The benefits of DISSY are:

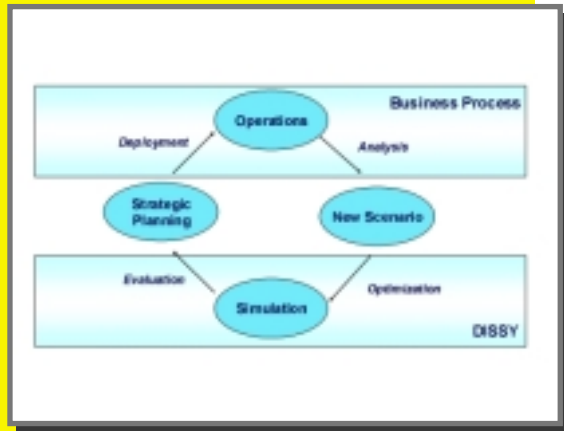
- Greatly improved schedule flexibility and quality
- Reduced scheduling time, enabling users to run simulations of alternative scenarios
- Lower costs and increased staff productivity without sacrificing social standards
- Faster reaction to changes in customer demand
- Better competitive position



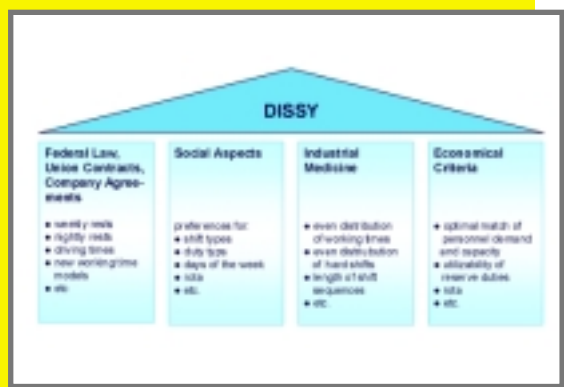
A complex planning task

More than a busman's holiday

DISSY combines state-of-the-art optimisation methods with High Performance Computing to supply high quality scheduling solutions. This multiplies the productivity of the planning department, and produces transparency for management and better working conditions for drivers.



Decision Support via Simulation



Optimisation Criteria in DISSY

DISSY runs on a cluster of ordinary desktop PCs, minimising hardware investment. It can be easily deployed even by smaller operators.

The system has been installed at the BSAG – Bremer Strassenbahn AG (Bremen public transportation system), which must schedule more than 800 daily shift duties and over 1300 drivers. Tests were run with real data from the winter timetable 1998/1999 and from the largest BSAG depot, with about 1600 duties per week. It was found that the time for generating the schedules for a depot was reduced from about 4-6 man days to a few hours. DISSY also dramatically improves scheduling quality. Service more accurately reflects actual needs, while drivers are better rested and can work closer to their preferred hours.

Thus, as the European market becomes more liberalised, DISSY reconciles competitiveness, efficiency, social and labour regulation issues.

High Performance Computing and Networking Programme

The HPCN Programme is an EU initiative to make high-performance computing available to small and medium-sized enterprises. This is supported by a pan-European network of 21 Technology Transfer Nodes (TTNs). Each TTN acts as a resource centre, providing access to the combined know-how of the entire HPCN TTN Network and contacts to firms and experts engaged in other HPCN projects. Currently some 150 projects are underway.



For more information contact <http://www.hpcn-ttn.org> or one of the DISSY project partners:

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