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O&S Consultancy

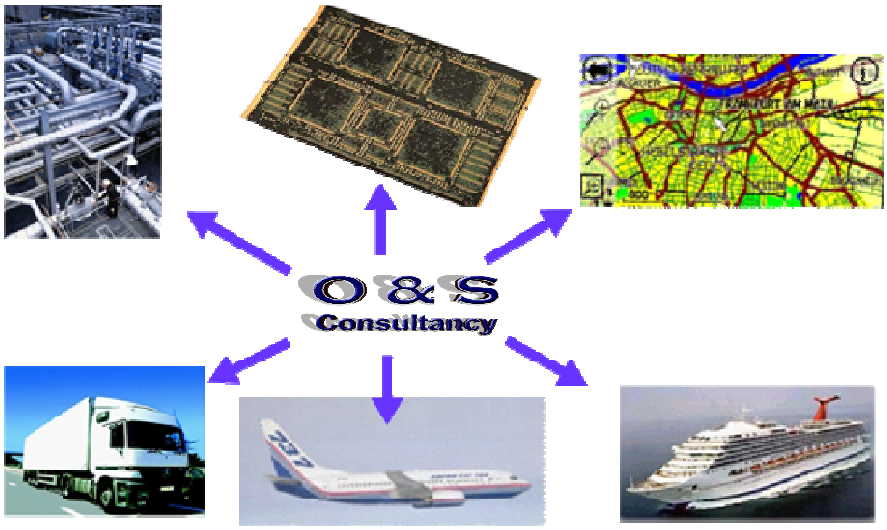
Optimization of General and Specific Connection Structures
for Industry, Traffic, Navigation, Communication

Research

Optimization

Development

Prototyping



O&S Consultancy - Its General Competence	
Find • ***System Components' Optimal Locations*** • ***System's Flow Embedding***	*Minimizing* • ***Routing Cost (length, time, ..)*** • ***Flow Embedding Cost (flow intensity dependant)***
realized by • ***New Deterministic Optimization Strategies !***	*observing* • ***Convenient Cost Bounds*** • ***Near Real Time !***

O&S Consultancy *is involved with efficient solution methods of many relevant problems as to* ***traffic, logistics, net optimization, plant layout, catastrophe management, etc****. It meets therefore the today's special challenge drastically to save resources by the further reduction of the related system's energy consumption (derived from reduction of connection length and connection time) in the interest of business, industry and society, although for most of the problems their exact solutions are exponentially time-dependent from the problem size! Therefore, it arises the urgent demand to develop system solutions for known and new problems that are near-optimal and real-time able and hence ecological sustainable. Is it just this research field in traffic and logistics where current problem solutions are not longer acceptable and where relevant problems even have no efficient solution methods till now. As an example we mention the Asymmetric Multi-Stopover–Path Problem for fleet management, delivery services, taxi drivers, … It considers shortest paths from a start to a target such that each point of a large stopover set is to encounter while observing turn restrictions and different lengths of streets and streets back. This and similar problems have to consider not only routing cost (length, time) but additionally the streets' traffic intensity.*

O&S Consultancy *rises to this challenge and has developed fast and near-optimal deterministic solution algorithms. It focus the present research on further solution methods not commonly spread in practice but relevant for new apps in the future. An example is the Asymmetric Multi-Service-Path Problem (picture below) where a courier has to meet only one of the branches of a set of companies / services on his path to the target in an unknown congestion area. Others are for example:*

- *Bi-criterion traffic flow management with respect routing cost and capacity constrained road charges*
- *New basic algorithms for navigation*
- *Collision avoidance systems*
- *Self-organizing mobile ad-hoc nets*
- *Catastrophe management*
- *Placing and Routing of entities with respect to neighbourhood relationship*
- *Wiring optimization with respect to cable cost and trass cost .*

O&S Consultancy *provides* ***mission oriented research*** *beginning with a problem analysis, developing solution apps and finally ending with a performable prototype.*

Example: Prototyping Efficient Algorithms Solving the (Asymmetric) Multi-Service Path Problem MSVP