

Model City 2011: the 22nd International Emme Users' Conference

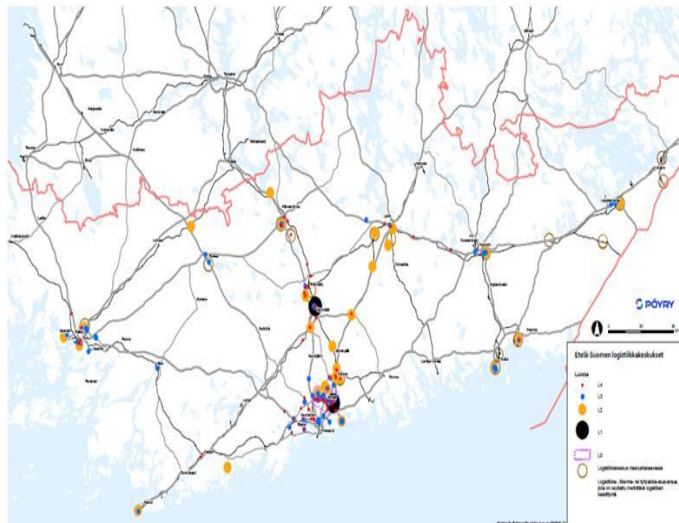
Optimal location of logistics centers

Abstract

We have studied the optimal locations, specialization and the economic significance of potential logistics centers in the Southern part of Finland. The study covered the unitized freight in Finnish export and import (containers and trailers). The work has been extended to the whole Finland now.

The study was based on existing data and models as much as possible: the global FRISBEE model on STAN software. The model consists of 13 commodities and 10 modes with rather sophisticated cost functions.

The evaluation method was based on matrix convolution tool implemented in STAN (as in Emme, too). There were ca. 20 potential logistics center sites or areas to consider. The basic freight transport from main export/import harbours or areas abroad was in containers to the logistics centers and the distribution was by trucks. The task was to find the best locations considering the transport costs.



Logistics centers can be independent, compete or complement each other. That is why we increased the logistics center network stepwise. When a “best” location was found, it was added to the base network and the evaluation rounds were renewed till there were no locations to be added.

There seems to be five economically feasible logistics center sites in the Southern part of Finland, they will generate ca. 90% possible benefits in costs. The location is not the only and decisive factor when considering logistics, one has to consider also the demand, functioning infrastructure, availability of land and workforce,