

# Call for Master Thesis at the Institute for Transport Studies

## Working Title

Re-estimating MARS (Metropolitan Activity Relocation Simulator) model with smaller traffic cells.

## Starting Situation / Framework Conditions

MARS (Metropolitan Activity Relocation Simulator) is a transport-land-use simulation framework which is run in a system dynamic environment (VENSIM), based on causal-loop diagram and represents the relation of cause and effect between the variables in the models.

MARS model has been well implemented in Austria, both at national and city (Vienna) levels, and also in other countries, e.g. Madrid, Jakarta and Beijing.

Whilst the current MARS serves well its purpose, there is a new need to operate MARS at smaller zones, so that we can also measure the impacts of the localized urban and transport infrastructure improvements at the given analysis zone. This is the focus of this thesis.

## Aim of the Master Thesis

- to re-assemble MARS model at smaller traffic zones for a select district in Vienna and estimate the plausible impacts of mobility station (or other select case study of infrastructure improvement which student like to test given the availability of the dataset) deployment at different smaller-zones within the same district.
- identify strategic location for the given case study and provide reflection on the current planning practice on the given case study.

## Methods

- Learn and understand about MARS model is constructed and estimated.
- Select one district as a case study and reconstruct MARS model for the given district with a smaller traffic zone (can use traffic cells that are currently use in planning model like VISUM)
- Select one case study where the demand related information is available. Mobility Station, can be one of possible case study
- Estimate the impact of different deployment location of mobility station within the select analysed district.
- Withdraw conclusion and develop recommendation for the planning practice in relation to the select case study.

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## Notice

Language: English