



DAFNI Champion update - 14/01/2021

Champion update

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Current work update

- Running on DAFNI
 - OpenMOLE embedding: sensitivity analysis, calibration
 - Road network preprocessing for MATSim on Functional Urban Areas
 - SPENSER model for synthetic population generation
 - Synthetic population preprocessing for MATSim on Functional Urban Areas
 - One-mode MATSim model coupled with road network and synthetic population processors

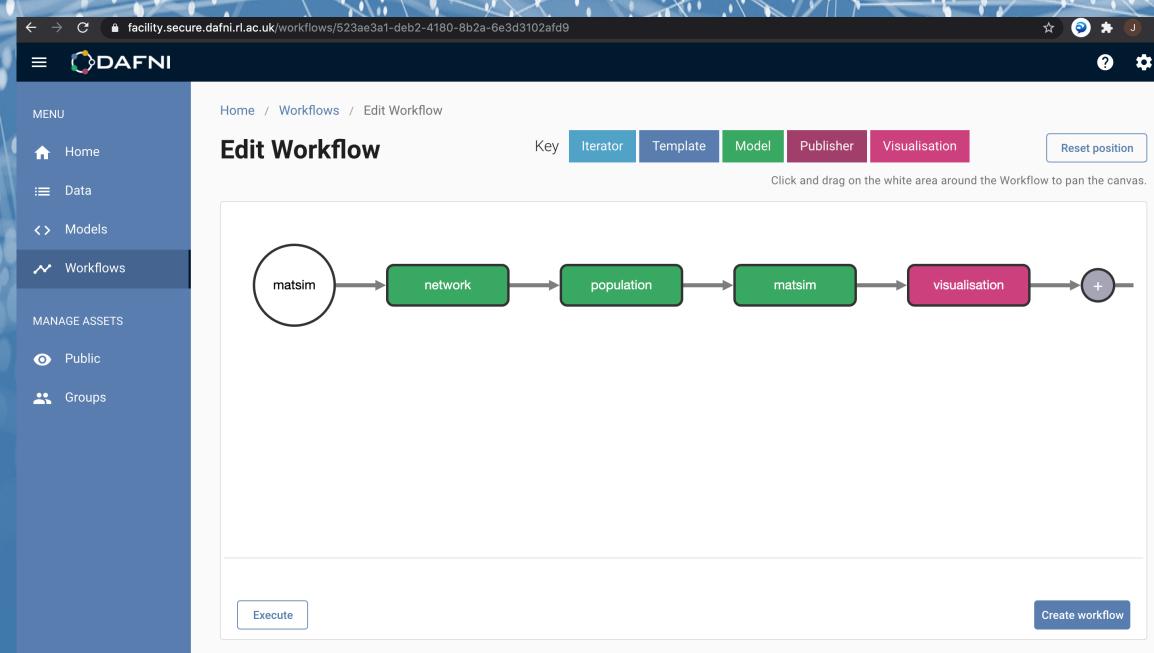
Current work:

- Four-stage model for travel demand: gravity model for O-D flows
- MATSim visualisations and output indicators
- Multimodal data
- Dissemination

Future work:

- Health indicators downstream MATSim
- Sensitivity analysis, calibration and validation using OpenMOLE

Full MATSim workflow on DAFNI







SPENSER synthetic population microscopic distribution

- Synthetic individuals and households at the OA level in 2020 for all UK, integrated in the NID
- Implemented in spatialdata: distribute uniformly within the OA on network nodes; attribute jobs randomly within the FUAs given the OA employment distribution; basic home-work plans with uniform start/end times
- In progress (code): Four-stage transportation model
 - Distribute households within OAs according to population density grid (100m Eurostat or 1km GHSL) and buildings (OpenStreetMap; OSM pbf implemented in spatialdata) individuals already matched in SPENSER data
 - Use QUANT calibrated parameters to estimate potential home-work flows
 - Sample workplace given these flows, accessibility patterns and car ownership





MATSim visualisation and outputs

- Test of the OTFVis tool: conversion of MATSim output events into movie files -> integration into DAFNI Jupyter notebook with python
- Relevant output indicators (mode shares, congestion)

Multimodal data

- Test of the Matsim extension to convert GTFS data into matsim schedule files
- Test of eqisim pipeline for OSM/GTFS data preparation (implemented for Paris)
- Package UK2GTFS (developed at Leeds) to collect and harmonize data





Dissemination

- Conferences
 - Abstract submitted at the Applied Urban Modeling conference
 - EWGT2021 conference: deadline for extended abstracts (full paper in March) tomorrow
- Roadshow event
 - Demonstration of MATSim integration into DAFNI, seminar
 - Mid or end of February?