DAFNI Executive board – 20/01/2021

Champion update

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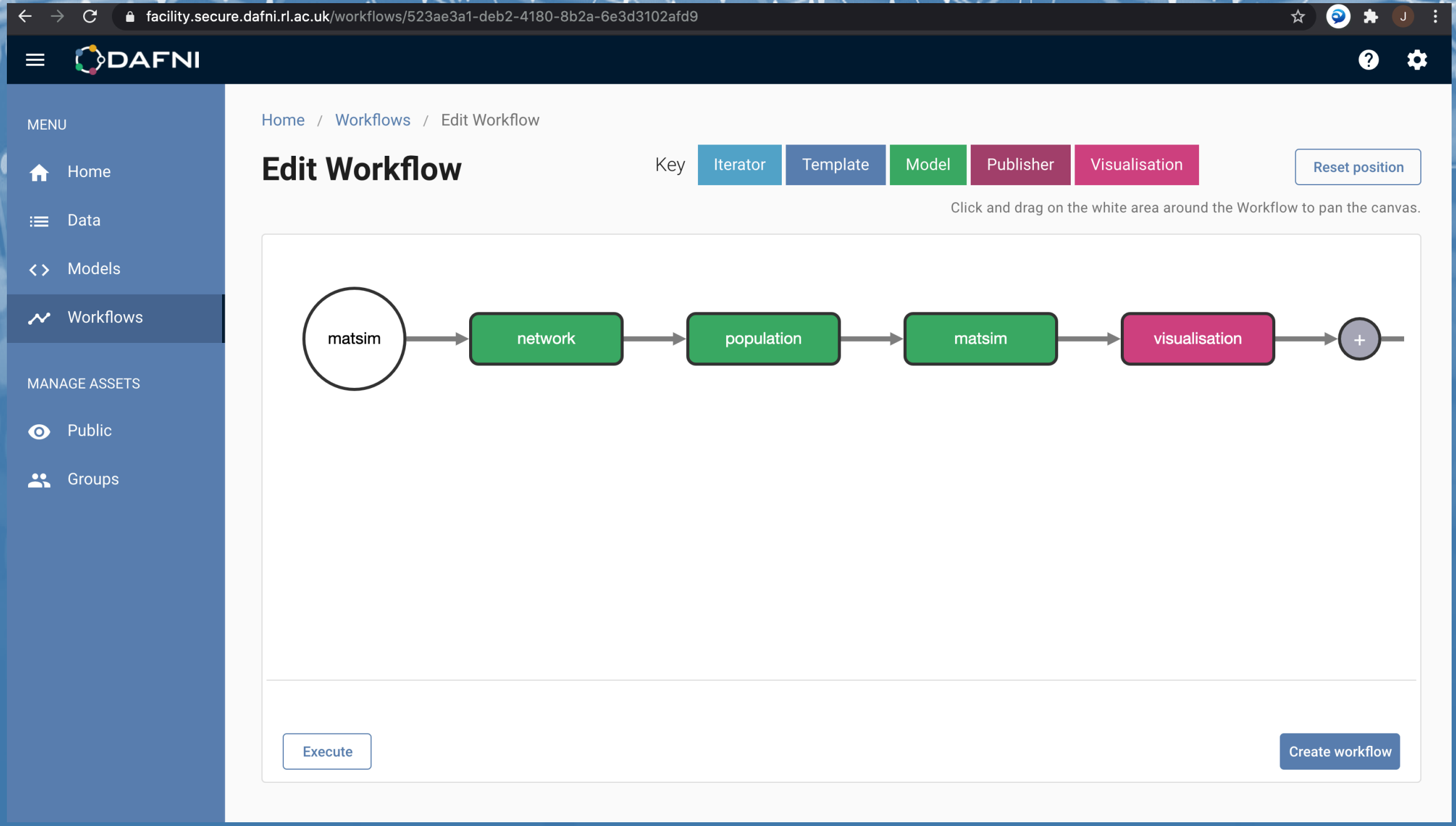
Current work update

- 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, trip statistics, congestion)

Multimodal data

- Test of the MATsim extension to convert GTFS data into MATsim schedule files
- Test of *eqasim* pipeline (python) and library (java) for OSM/GTFS data preparation (implemented for Paris)
- Package UK2GTFS (developed at Leeds) to collect and harmonize data

Dissemination

- Conferences
  - Extended abstract accepted at the Applied Urban Modeling conference (28/01/2021)
  - Submitted extended abstract to the EWGT2021 conference (full paper in March)
- Roadshow event
  - Demonstration of MATSim integration into DAFNI, seminar on transportation models
  - Planned in March