

CIM OUT-OF-HOME

November 9, 2017

An introduction

Institutes

The CIM Out-of-Home 2017 study
results from the collaboration between 2 institutes :



Traffic modelling and calibration
(Ghent, Belgium)



Cartography and visibility adjustment
Inventory management software
Exploitation software
(Prague, Czech republic)

Traffic modelling

Based on a hybrid approach integrating various data sources

a. Travel diaries

1. The previous CIM OOH survey
2. Public mobility surveys (Belgian Daily Mobility, Onderzoek Verplaatsingsgedrag Vlaanderen)

b. Travel counts

1. Fleet management data acquired through geolocation (Floating Car Data)
2. Traffic measurements (loop detectors)
3. Public transports statistics



Travel diaries

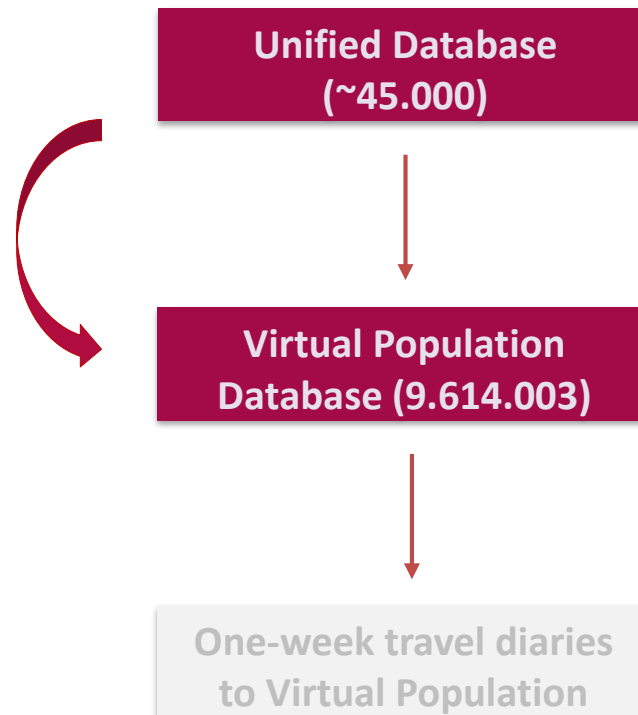
- a. 3 Donor surveys were merged into 1 coherent dataset (UD or Unified Database)
- b. Demographic and travel characteristics were standardized, modelled, calibrated and validated with benchmark data (census data and traffic data)
- c. The UD is a representative sample (~45.000) of Belgians with their :
 1. Demographics : gender, age, living place, education, occupation,...
 2. Travel data over 7 days : day, hour, travel means (car, bus,...) and motive (work, school,...)



Expansion to the universe (1)

Sociodemographic characteristics of the Unified Database are ascribed to 9.614.003 Belgians aged 12 years and over, in a new dataset called Virtual Population Database (VPD)

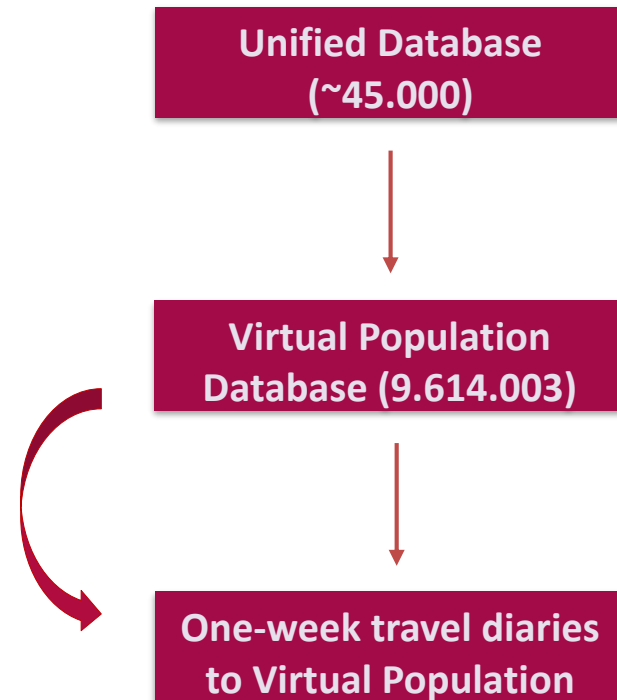
1. Clustering of statistical sectors (neighbourhoods)
2. Ascription of living place to each individual in accordance with their relevant socio-demographics



Expansion to the universe (2)

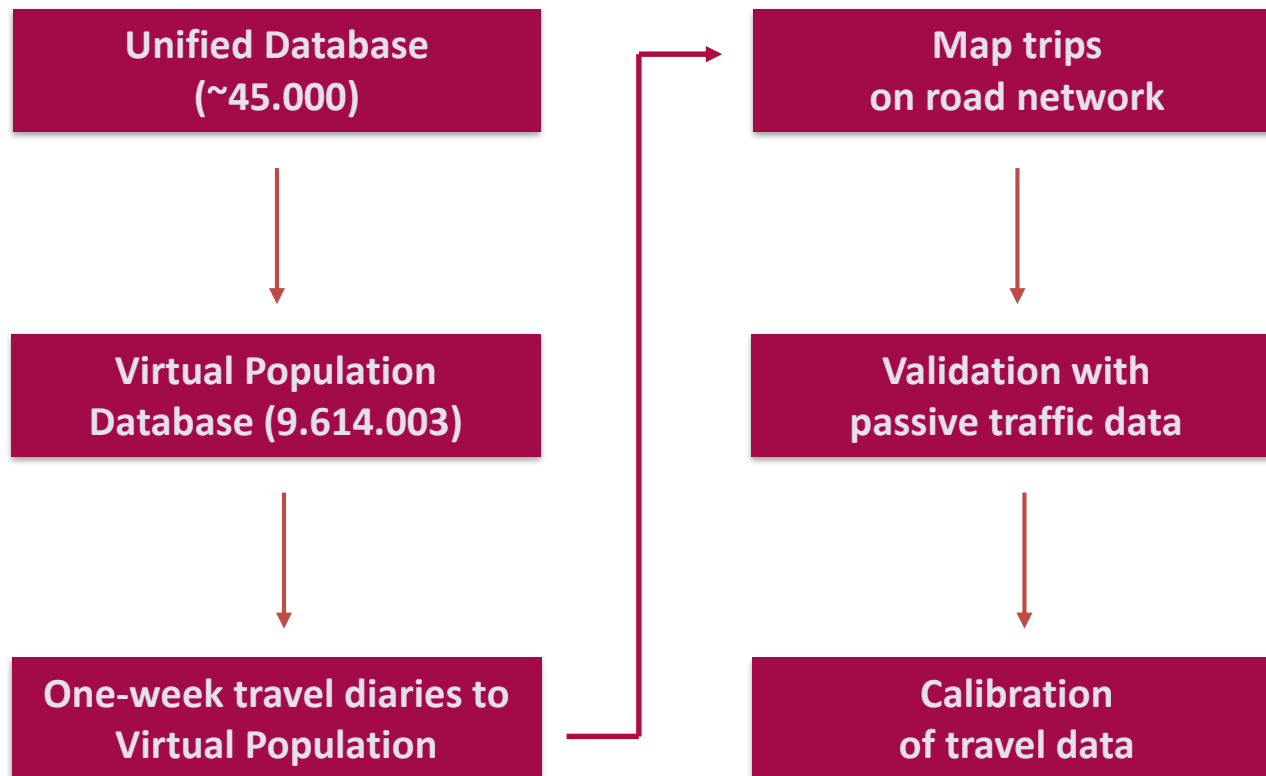
Then, the travelling habits of the UD members have been modelled and ascribed to the 9.614.003 VPD individuals

1. Activity Based Modelling: linking demographics & mobility patterns
2. Attribute mobility patterns to each individual (number of trips, motive, transportation mode, start/end point,...)



Mapping travels on road segments (1)

Travelling habits have been validated with passive data (loops,...) and calibrated with benchmark data (floating car data, traffic counts,...)



Mapping travels on road segments (2)

- a. All vectors corresponding to the one-week travels of the 9.614.003 VPD individuals have been mapped
- b. This makes it is possible to know, for each road and segment:
 1. How many travels are registered on an average week or day
 2. How many travellers
 3. Time of day
 4. Sense of the flow
 5. Travelling speed
 6. Means of transportation (car, public transport, motorcycle, bike, pedestrian)
 7. Motive to travel (work, school, shopping, social events, ...)
- c. The vectors and their characteristics have been integrated into an OSM (Open Street Map) cartography

Inventory management

- a. Some 45.000 panels have been geolocated and characterized in the Inventory Management Software (IMS) of MGE Data
- b. Each panel is characterized by :
 - 1. Latitude & longitude
 - 2. Address
 - 3. Size
 - 4. Position vs road
 - 5. Cone of visibility (distance, obstacles)
 - 6. Illumination/not lit
 - 7. Dynamic/static
 - 8. Ownership data & accompanying pictures
- c. The panels and their characteristics have also been integrated into the OSM cartography

ROTS

- a. Once the inventory is in place,
all potential contacts can be calculated :
 - 1. the sum of all passers-by,
 - 2. who can see a panel from neighbouring road segments.

- b. These passers-by represent the ROTS,
i.e. all people with a **Realistic Opportunity To See**

VAC

- a. The international ROUTE visibility algorithm (from the UK) is then used to calculate the % of people really viewing the panel
- b. The Visibility Adjustment Index is calculated for each individual panel based on size, distance and cone of visibility, height, angle of vision, distance off-axis, illumination, movement,...
- c. The Visibility Adjusted metrics are the new CIM currency
 1. VA Reach (Visibility Adjusted Reach)
 2. VA Frequency (VRP divided by VA Reach)
 3. VRP (Visibility adjusted Rating Points)

Work in progress

- a. Due to its nature, this project will continue to evolve
 - 1. Source data will be updated regularly
 - 2. Modelling will be refined
 - 3. Exploitation will gradually be enriched

- b. The current publication has two limits
 - 1. Not all visibility factors are currently taken into account for digital panels
 - 2. Audience for metro and railway stations are still being modelled



Full methodology available on www.cim.be

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