

Assessing the Quality of Mobile Phone Data as a Source of Statistics

Session 20 – Big Data
Oriented Systems

02/06/2016

eurostat 

 **economie**
FPS Economy, S.M.E.s, Self-employed and Energy

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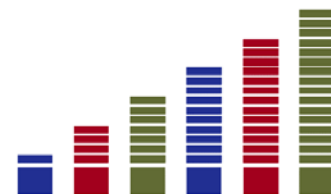
IN
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Madrid, May 31 - June 3

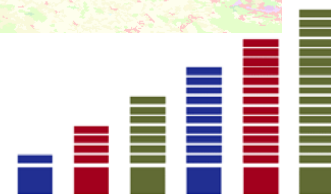
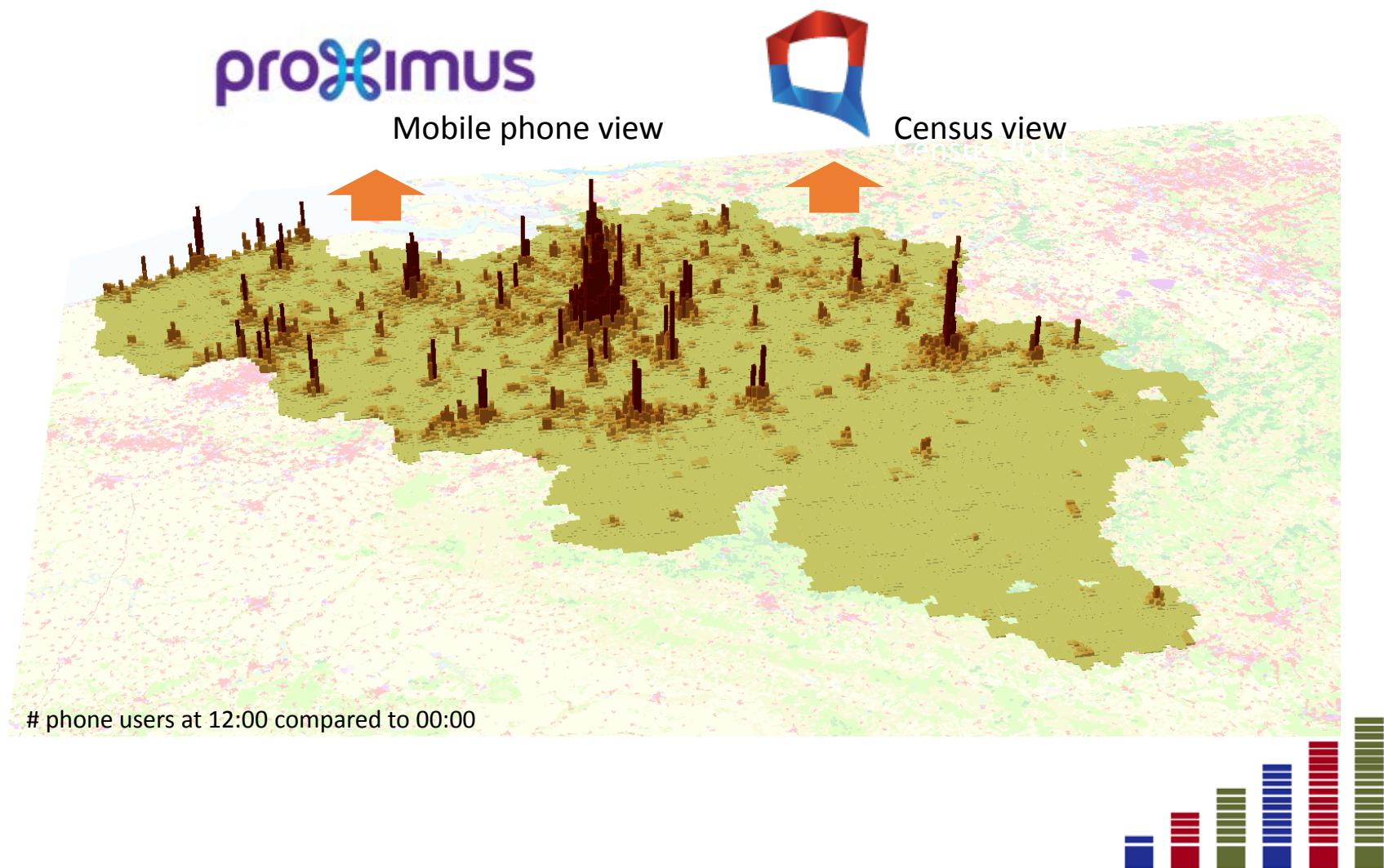
Use mobile phone data as a measure of resident population

- Validity
- Accuracy
- How to increase value further

=> Comparison with census 2011



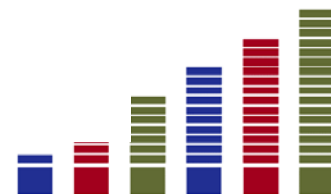
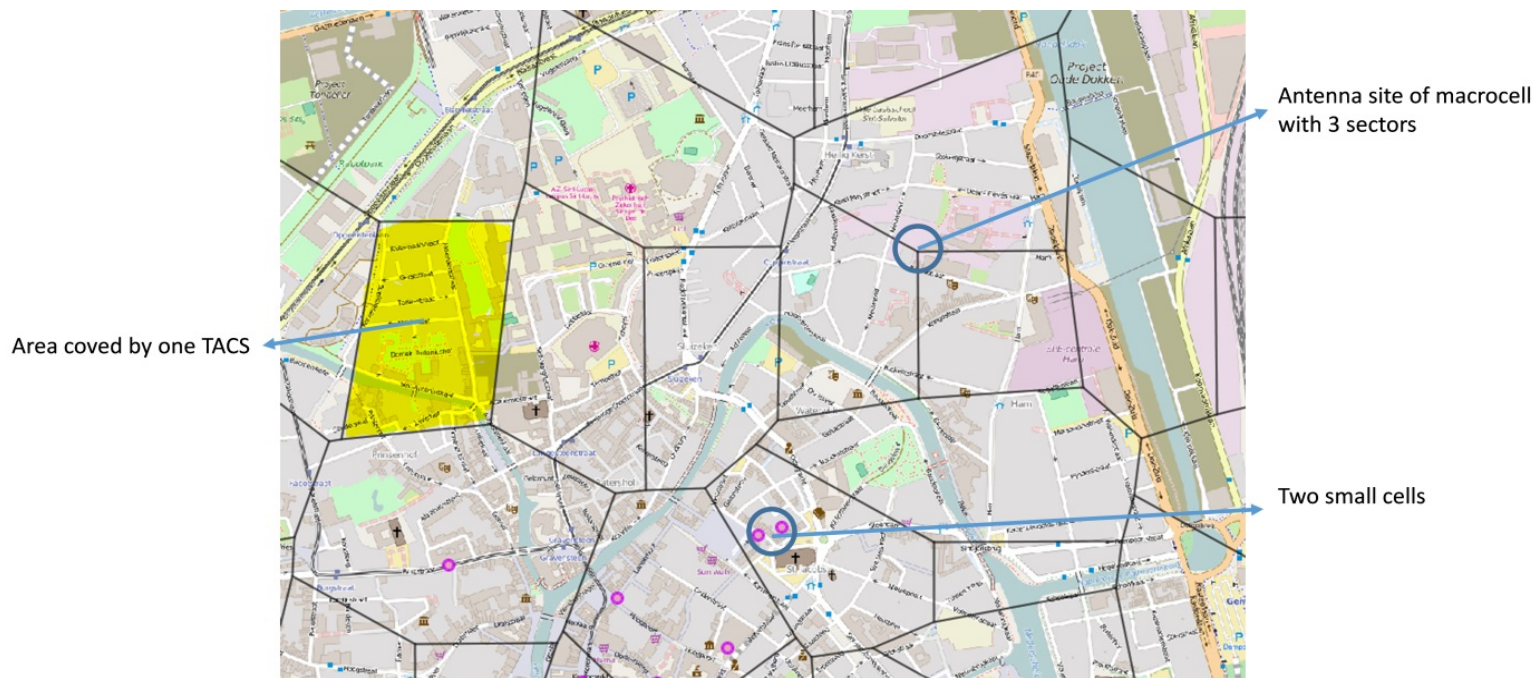
2 versions of the truth



Mobile phone data

Use of network signalling vs Call Data Records

Abstraction of network complexity (TACS - Technology Agnostic Cell Sector)



Census data

Place of residence

Geocoding of addresses to Voronoi / grid

nl fr

Andere informatie en diensten van de overheid: www.belgium.be .be

HOME OVER DE CENSUS RESULTATEN CONTACT

Statistics Belgium **economie**

Census 2011 België

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PROFIEL VAN DE BEWONERS EN EIGENAARS VAN RECENTE WONINGEN

In de kijker 16 juli 2015



De Algemene Directie Statistiek publiceert een analyse gebaseerd op de resultaten van de Census 2011. Deze analyse heeft als doel het profiel van huishoudens die wonen in een klassieke woning gebouwd na 2006 te vergelijken met het profiel van huishoudens die in oudere woningen wonen.

[Meer](#)

Om niets te missen: abonneer je op onze "e-nieuwsbrief Statbel" [via deze link](#)

EEN FOTO VAN BELGIË OP 1 JANUARI 2011

De census is een momentopname van de Belgische bevolking op 1 januari 2011, namelijk alle inwoners van het Belgische grondgebied ongeacht hun nationaliteit. De Census 2011 biedt een brede waaier aan cijfers over de demografie, de socio-economische aspecten, het onderwijs en de woningen.

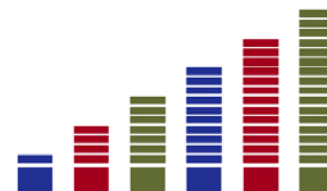


Wist je dat 230.000 woningen in ons land gebouwd zijn in 2006 of later?

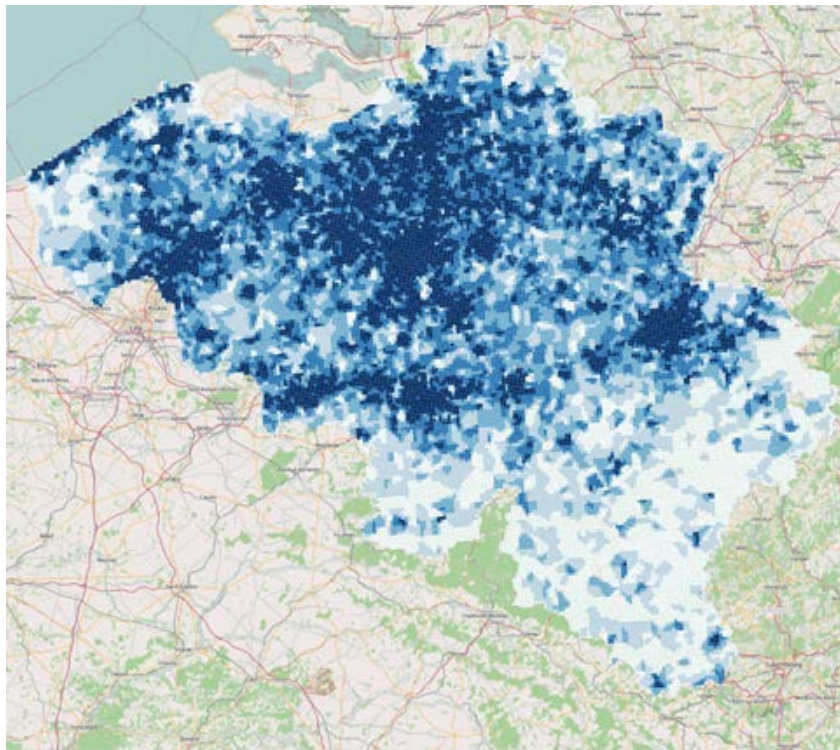
Maandbinder

Updates

gepubliceerd op 16/07/2015 - In de kijker:

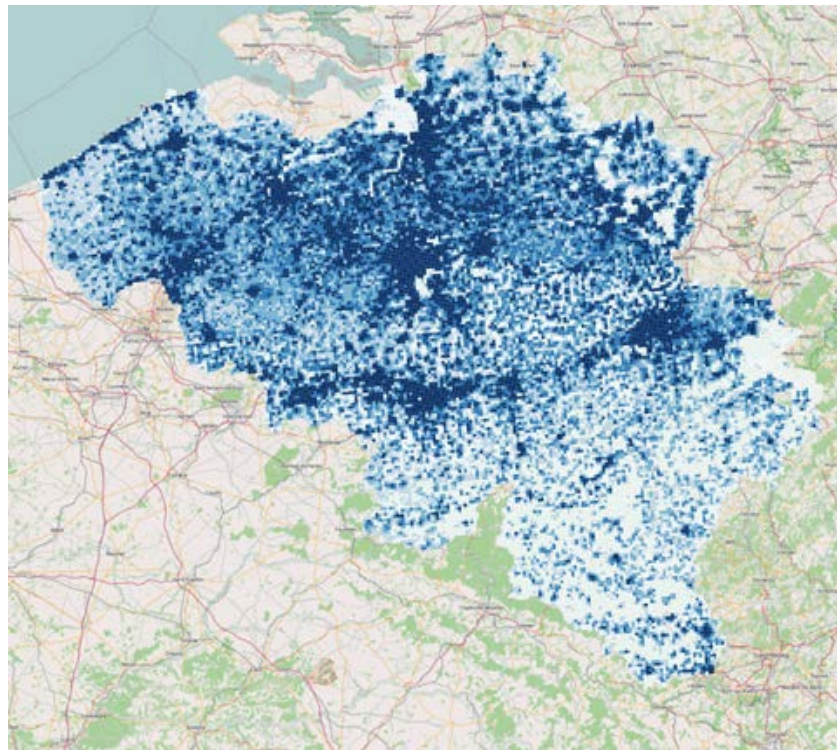


Results for population density



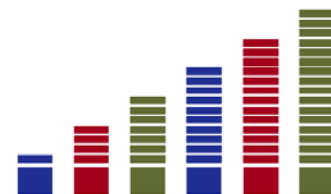
Mobile phone data based

1 day @ 04:00

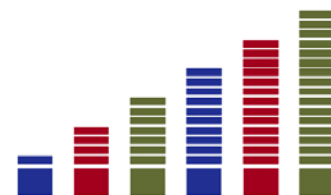
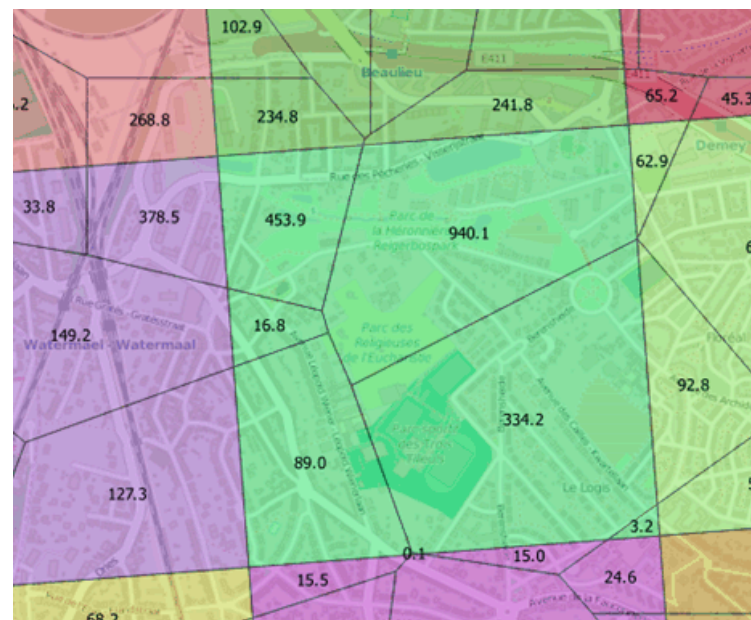
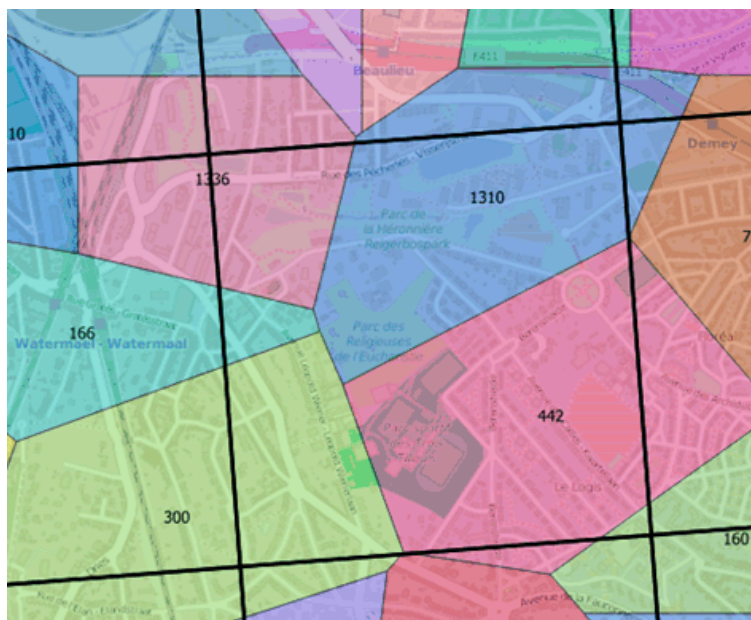


Census based

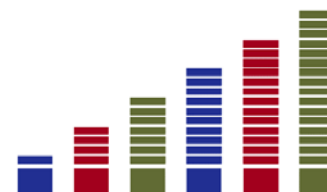
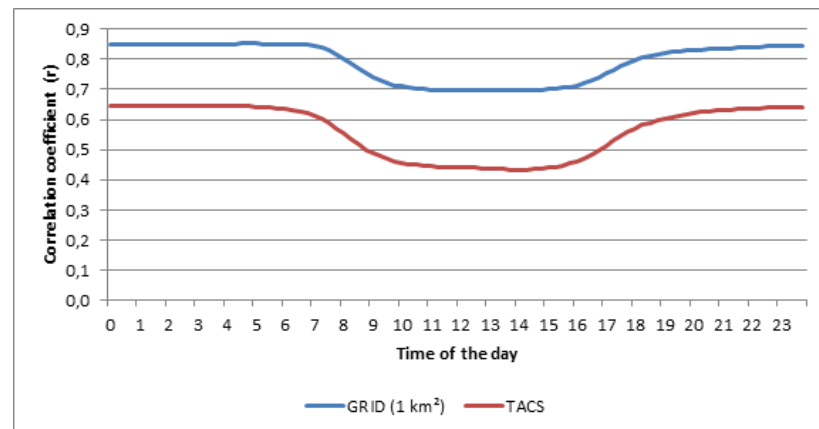
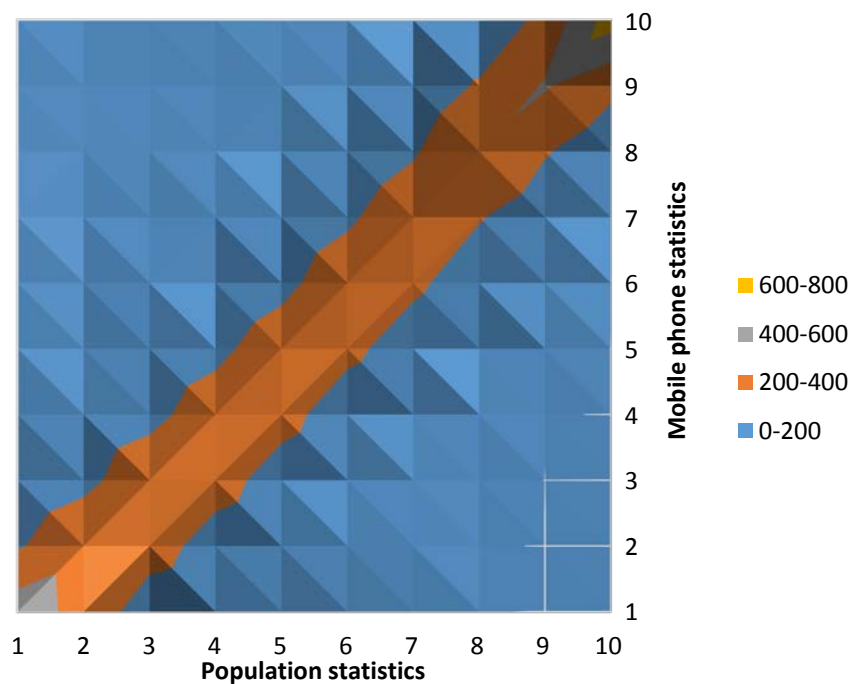
2011 data



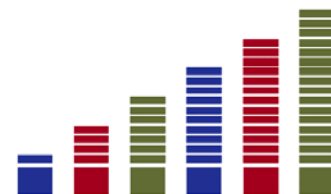
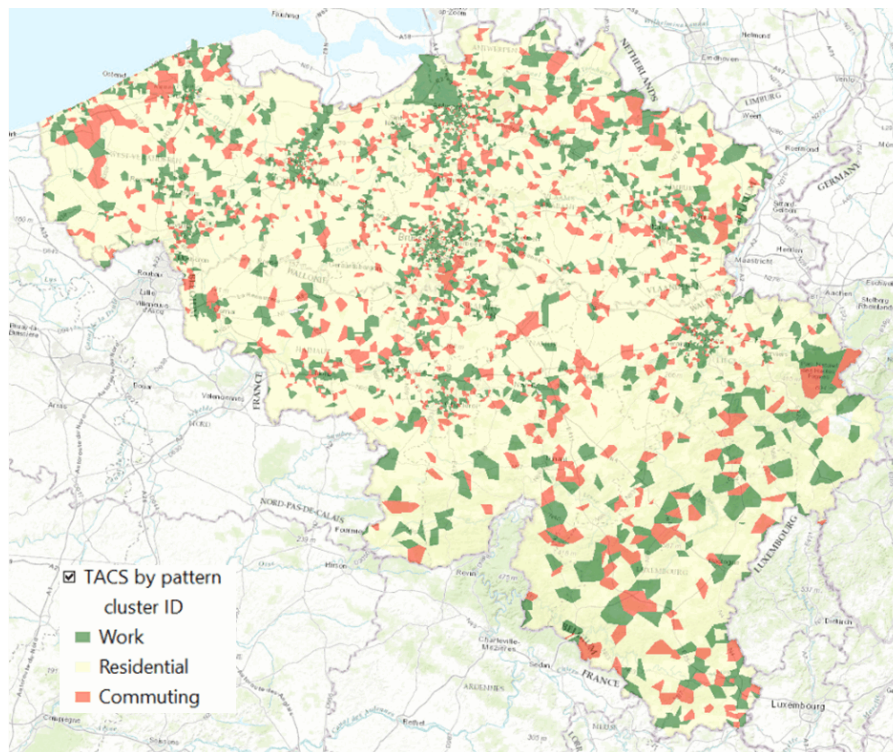
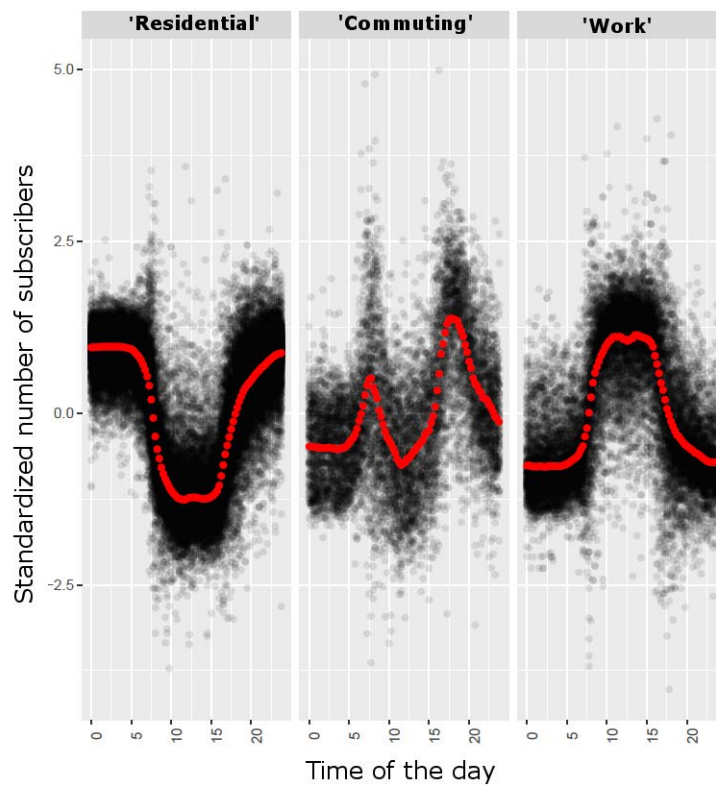
Mapping to grid



Correlation



Cell traffic profiling



Conclusions

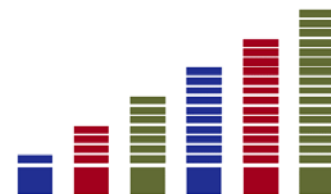
Mobile phone data is a valid & accurate approximation of actual present population

- Available, huge, 24/24 7/7, objective
- Largely unexplored

A large potential for future research in many area

- population
- tourism
- migration, transport & mobility
- ...

Opportunity for efficient & coherent use of 1 source for different purposes



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