



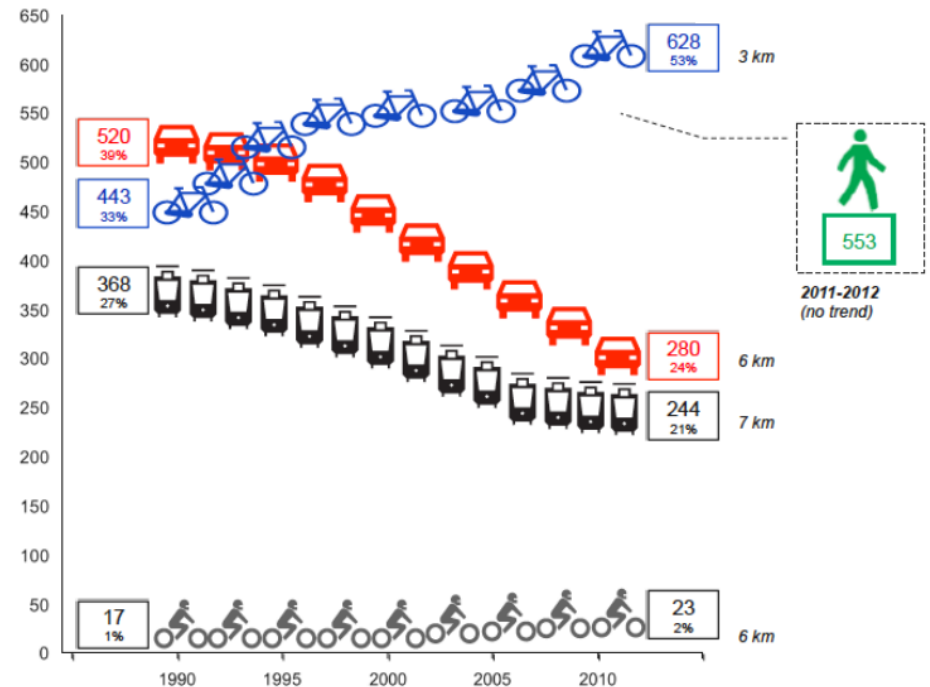
Monitoring the active-modes

D.C. Duives
7 september 2016

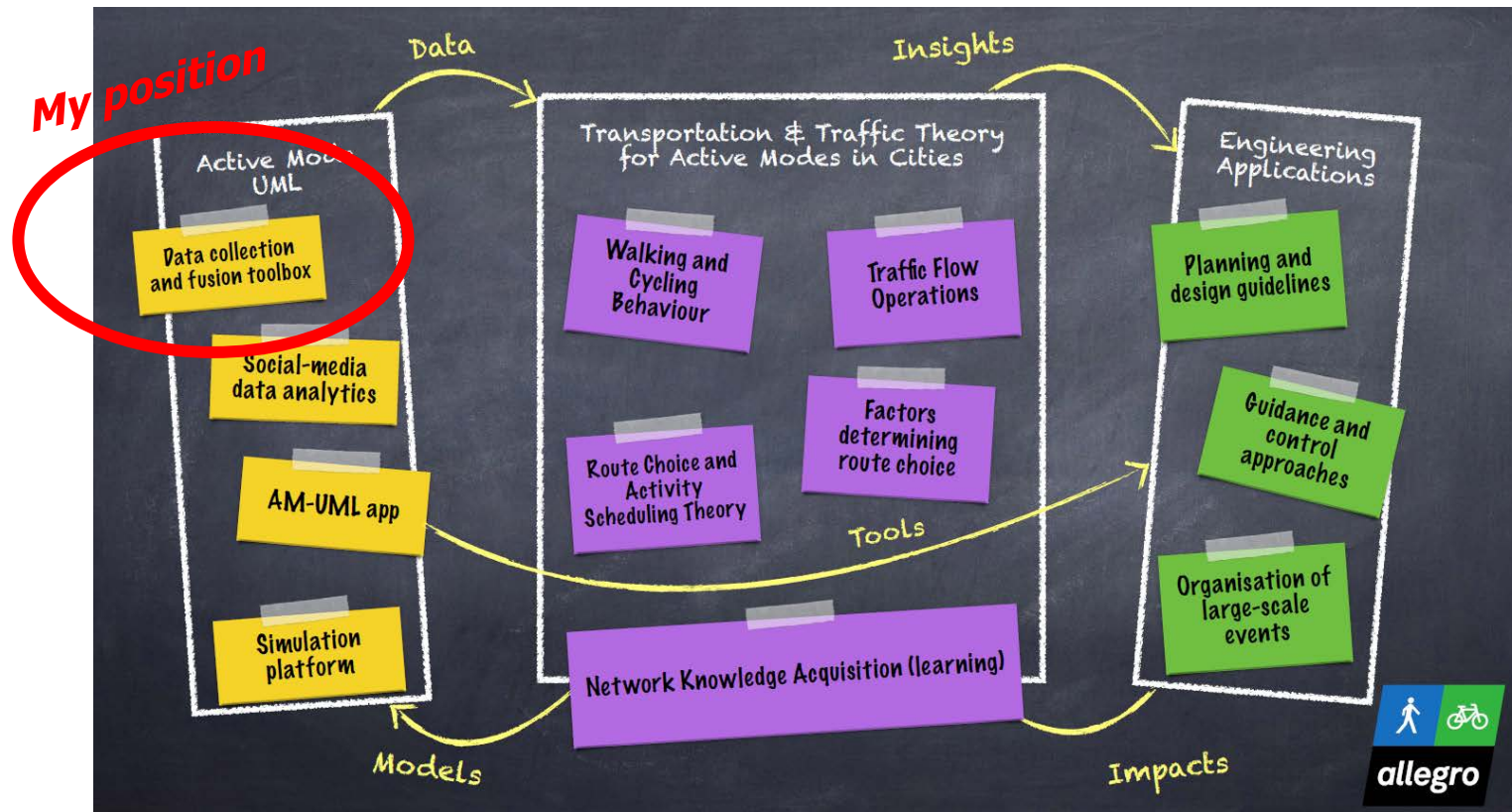
Motivation

More and more people walk and cycle to get from A to B within the urban environment

- Positive effects
 - Emissions
 - Accessibility
 - Health
- Negative effects
 - Physical safety
 - Social safety



ERC grant: 'Unravelling slow mode travelling and traffic'



Data collection and fusion

Problem:

- Infrastructure is under pressure
- No clear understanding of their choice and movement behaviour
- Lots of data available (travel diaries, counts, gps-tracks, etc.)
- Insights limited to the usage of singular data sources

Aim:

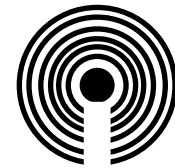
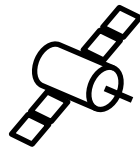
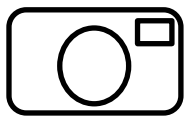
Providing tools for the online and offline analysis
of the mobility patterns of pedestrians and cyclist
in urban environments under normal and exceptional conditions
using a combination of data sources



*unravelling slow mode
traveling and traffic*

Angle of attack (1)

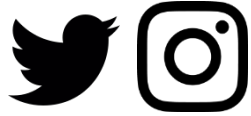
- Technological advancement is producing new technique to monitor mobility at an incredible pace



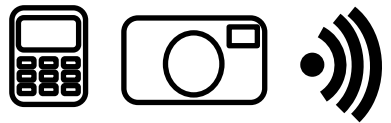
- Each data source has advantages and disadvantages
- Combine to gain information

1 + 1 >>> 2

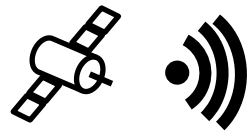
Angle of attack (2)



Who are present?
How do these people feel?



Where are they located?



Which routes are they following?
Which activities are they performing?

Now safe &
effective?



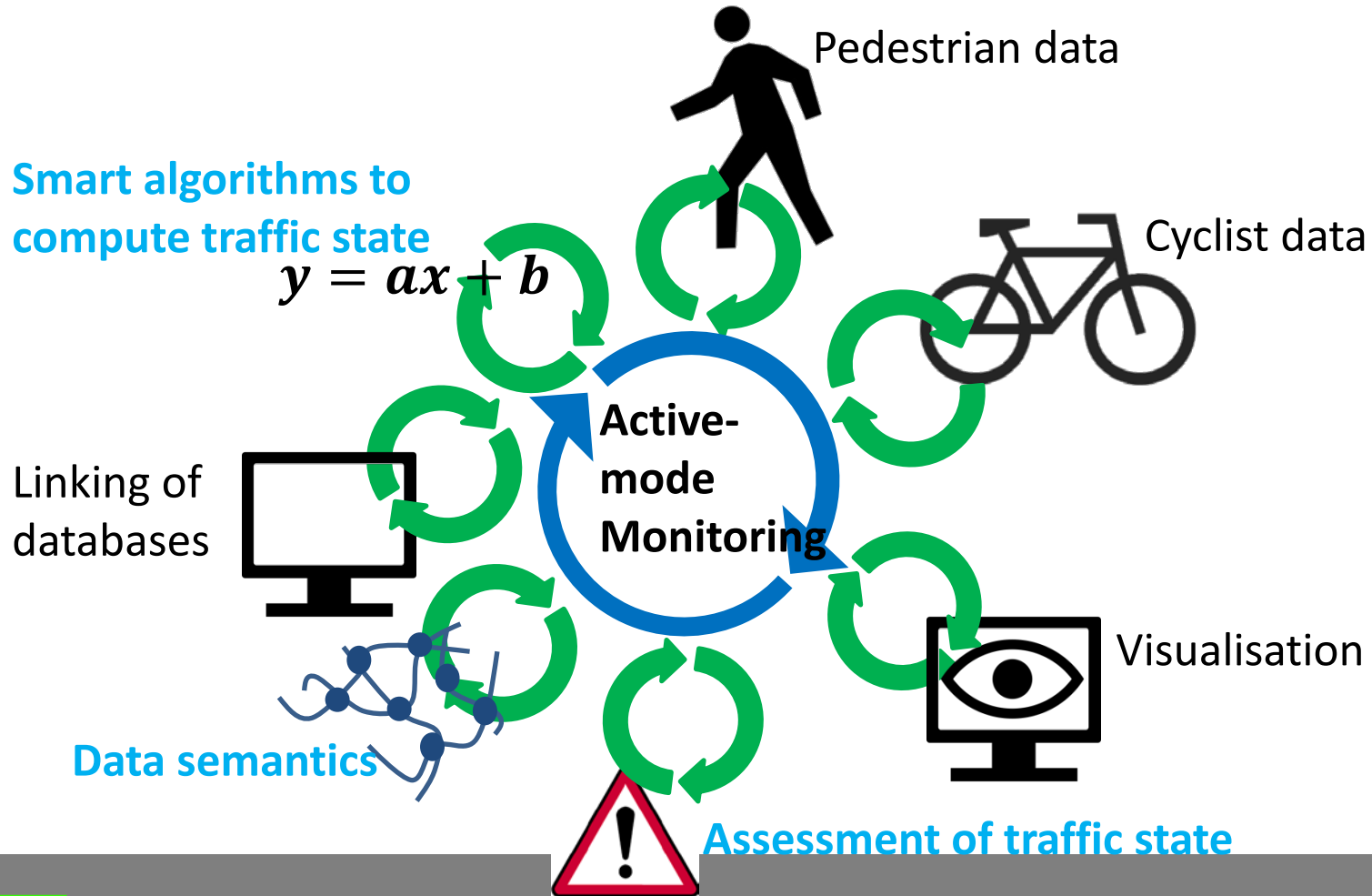
Manage?



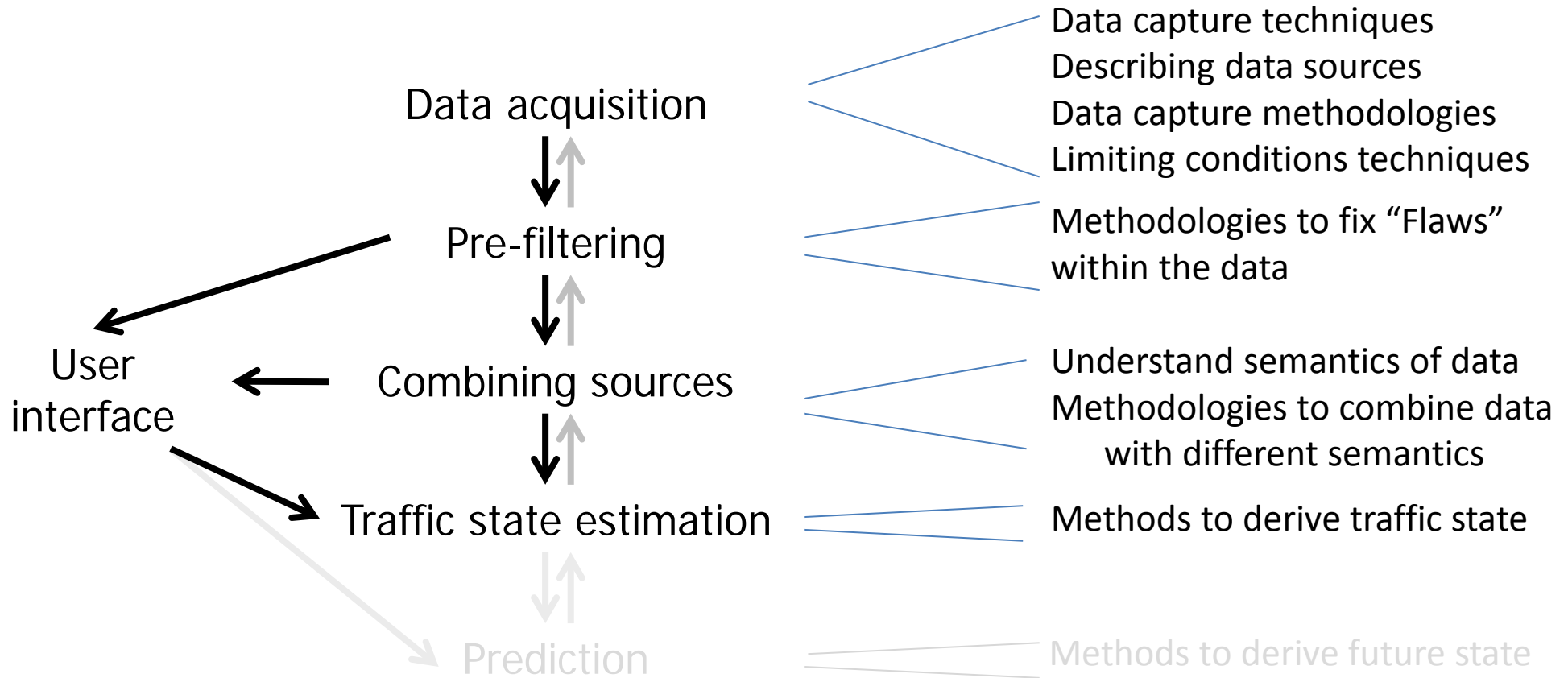
Future?



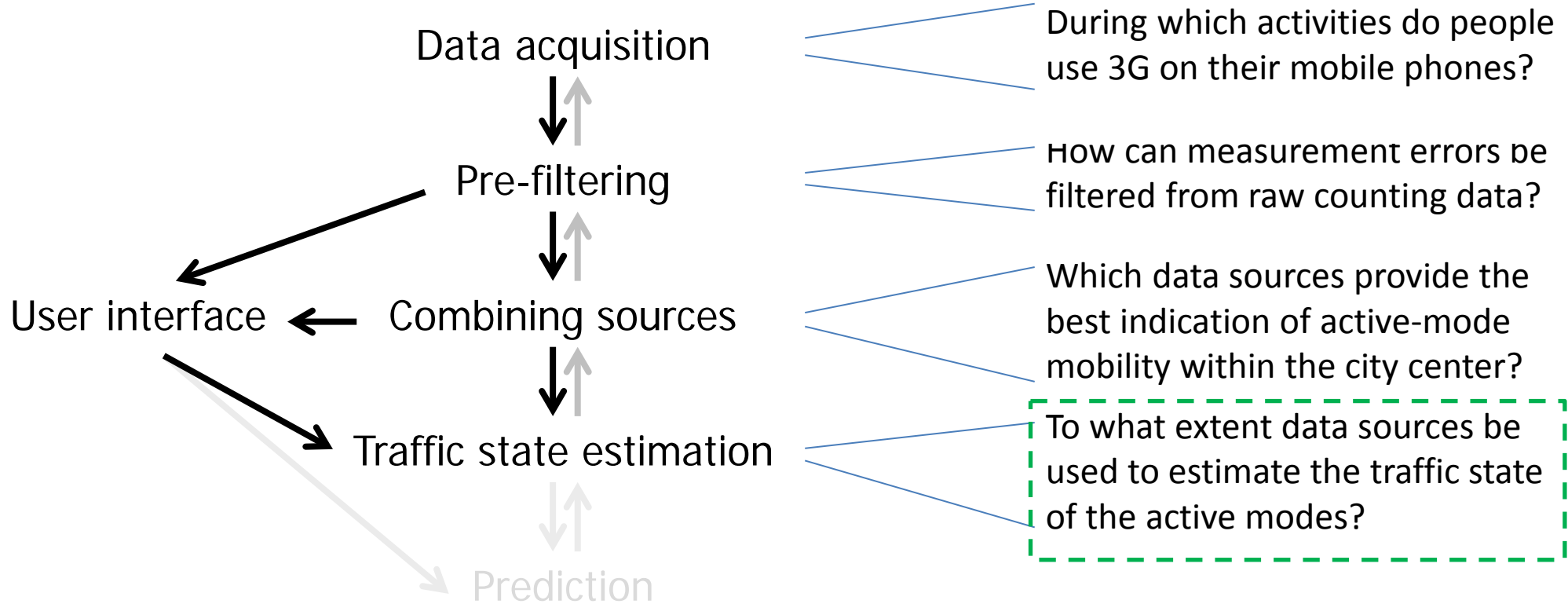
Angle of attack (3)



Angle of attack (4)



Angle of attack (5)



Active-mode Monitoring Dashboard

Aim: To estimate the traffic state at large-scale events

Pilots on large-scale events



SAIL 2015



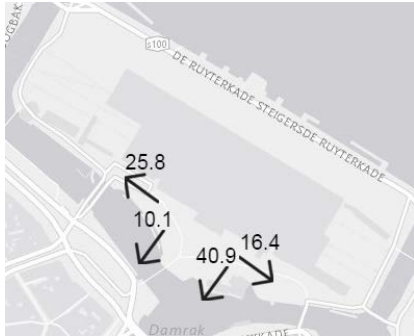
Koningsdag 2016



Europride 2016

Active-mode Monitoring Dashboard

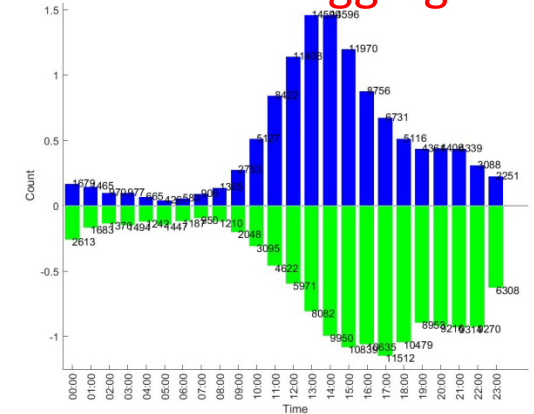
Real-time route choice



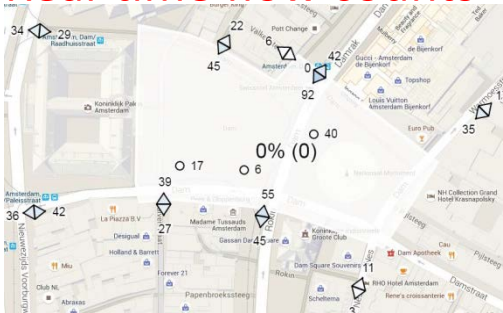
Real-time Social media activity



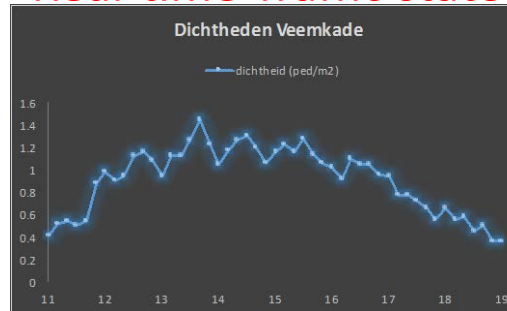
Offline data aggregation



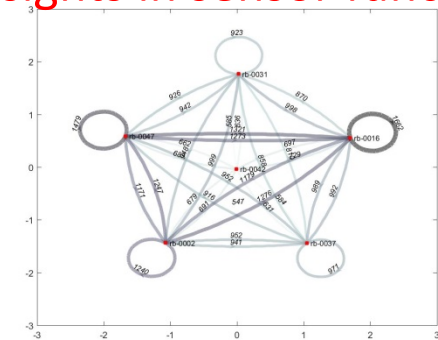
Real-time flow counts



Real-time Traffic state



Insights in sensor functioning



Using active-mode monitoring and data fusion

- Capturing active-mode mobility in numbers
 - Underpinning feelings and concepts with tested theories
- Insights in the traffic state that can help officials **assess the the safety and effectivity** of active-mode travellers in urban spaces under normal and exceptional conditions
- Insights that can help in the **design** of balanced urban spaces and the design of management plans for the urban space