Pilot: 3D-camera

Kim Verbeeck – GIS analyst Cycle Barometer

BITS
Bicycles and Intelligent Transport Systems

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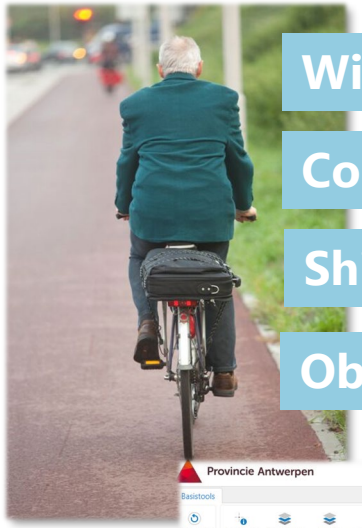
Importance of infrastructure data

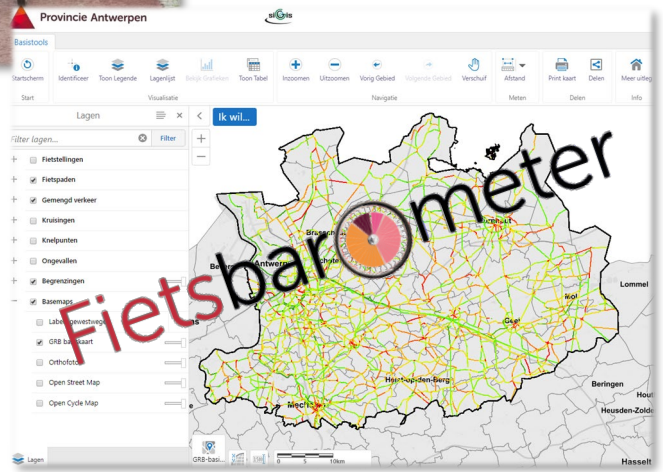


Width

Comfort

Shielding

Obstacles



Comfort
experience

t convenience

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Cycling

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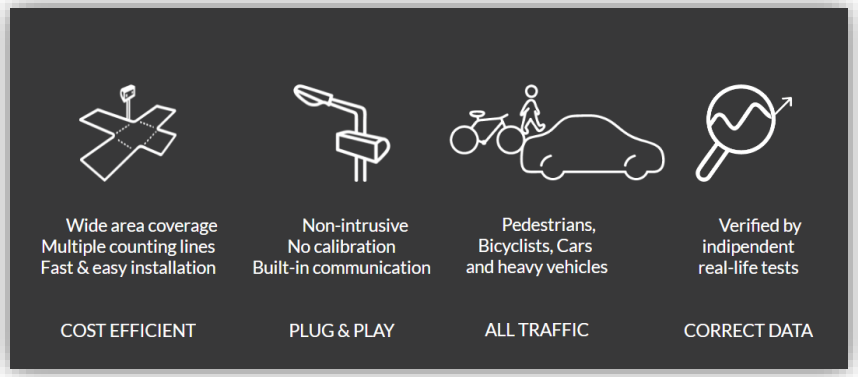
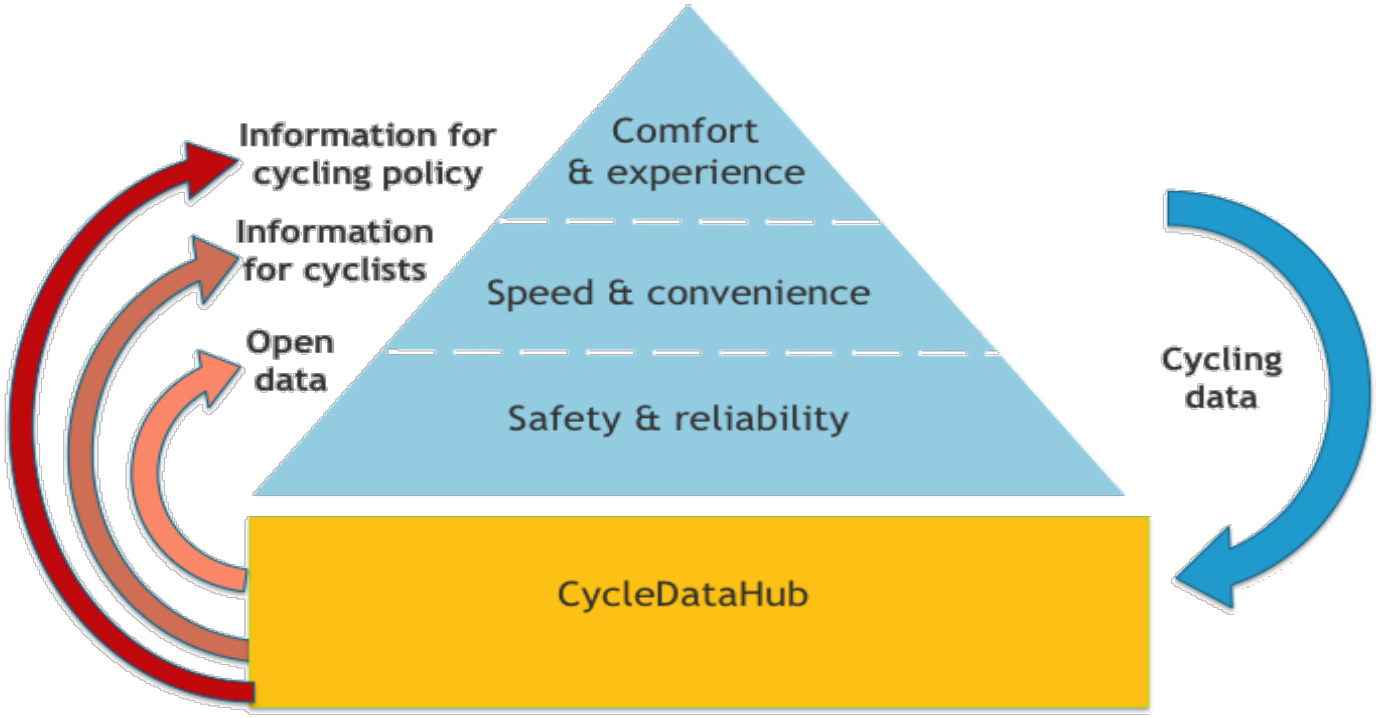
Testing new technology





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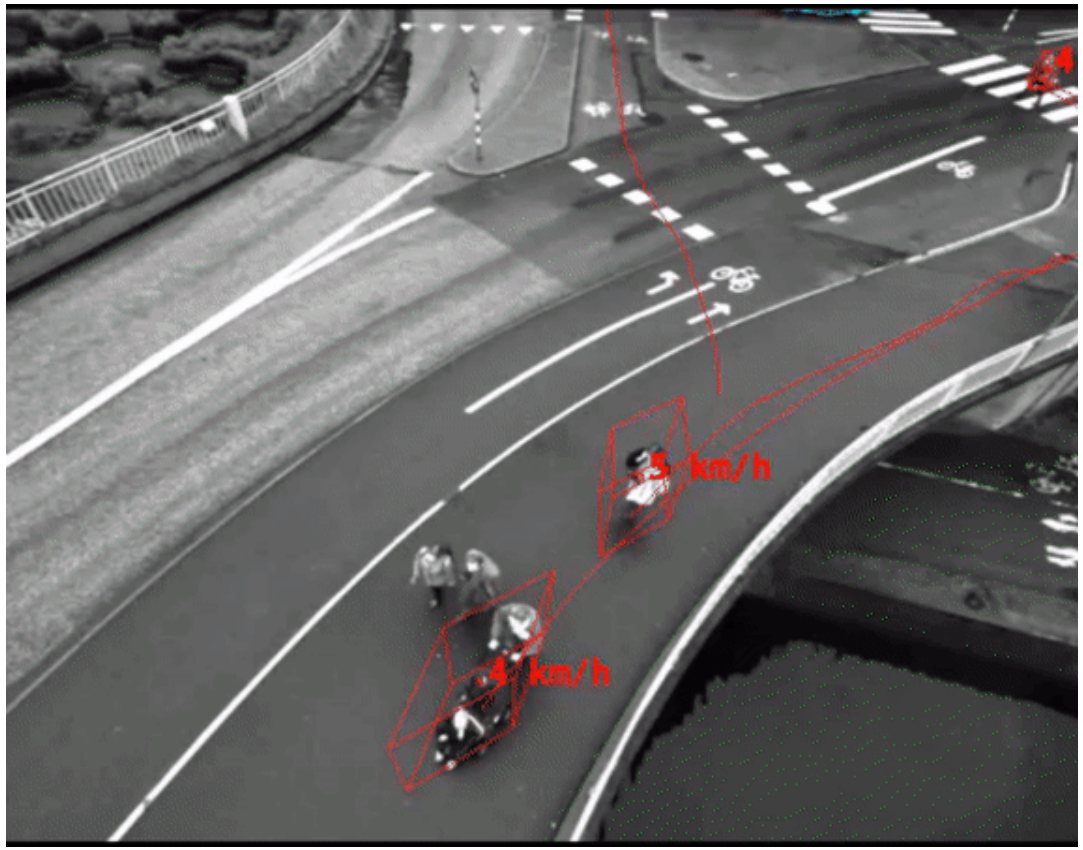
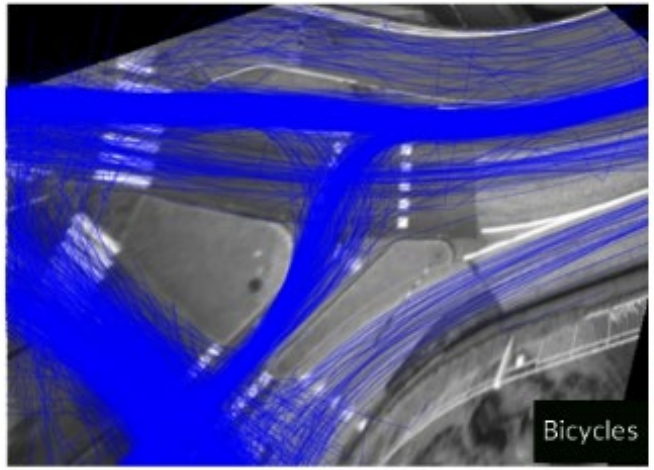
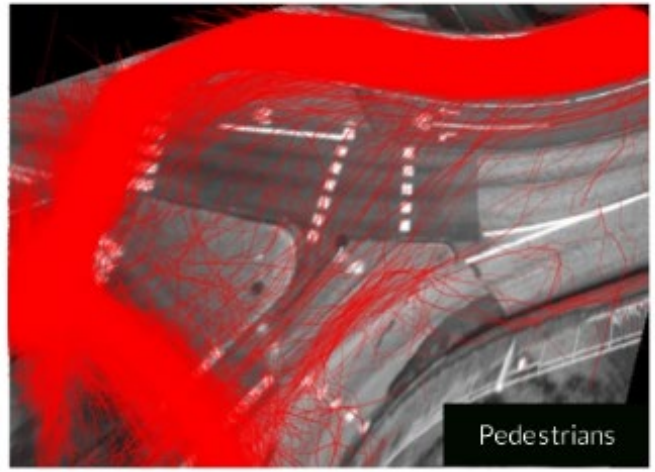
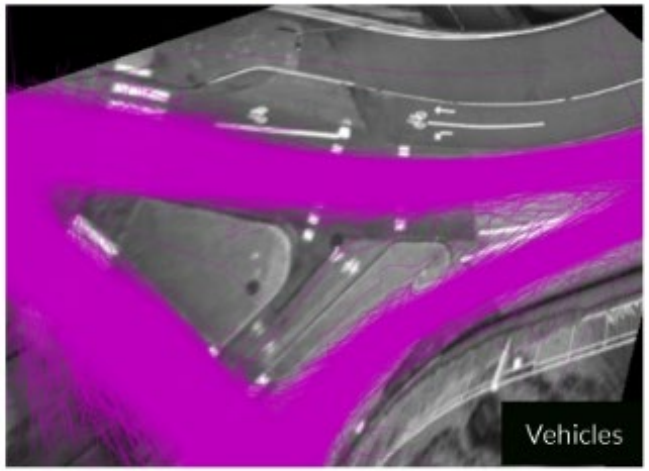
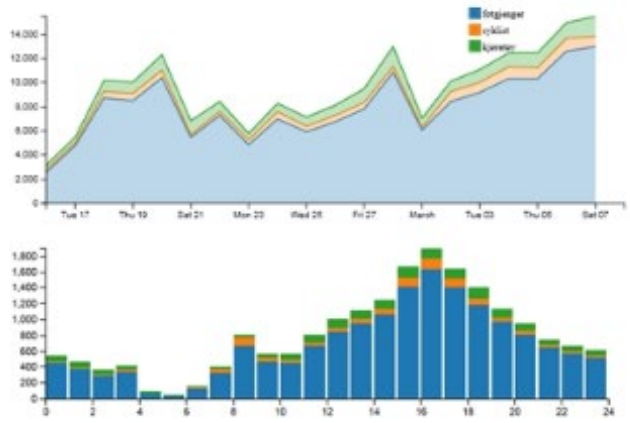
3D-camera OTUS3D & AI











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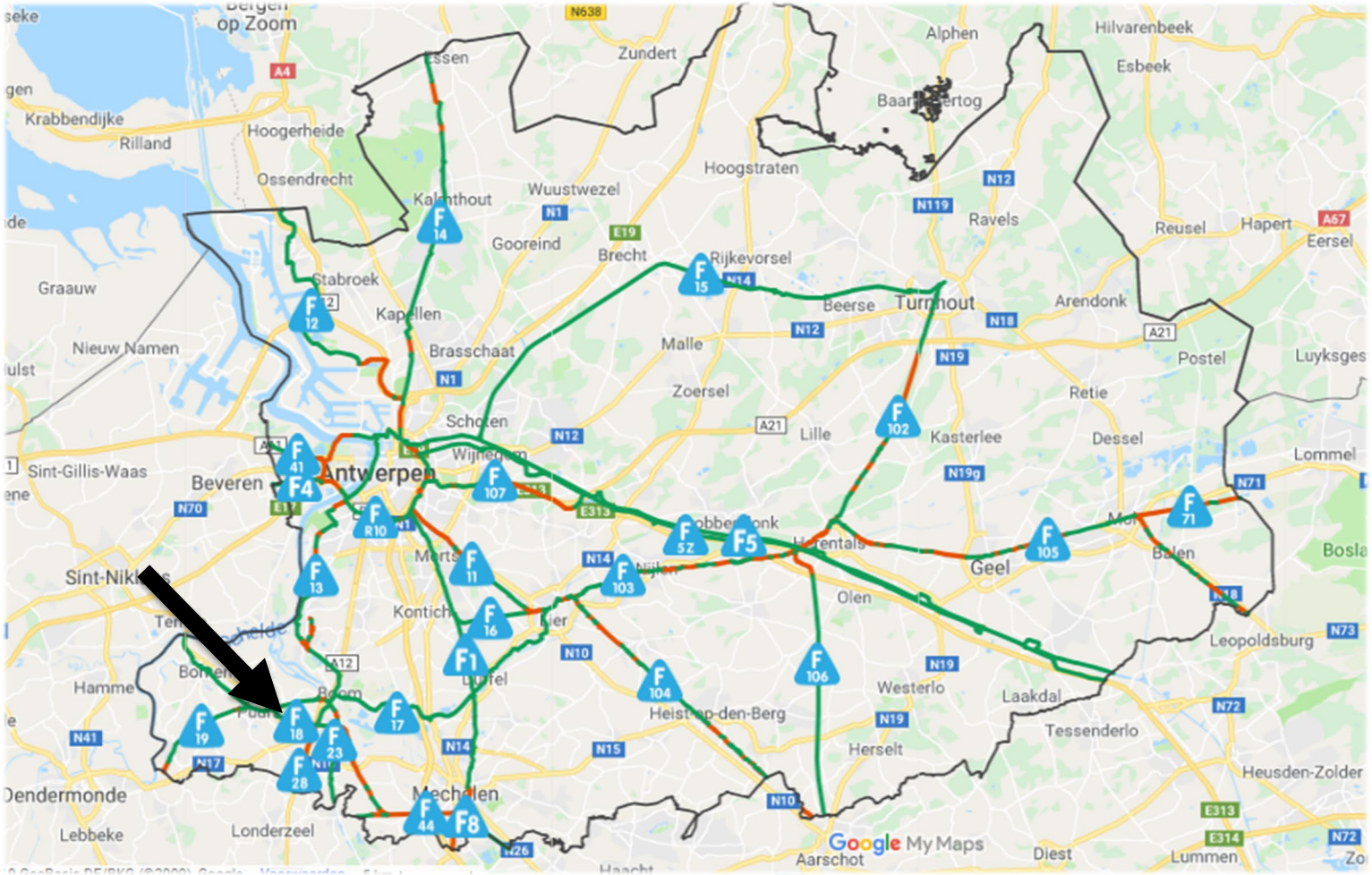
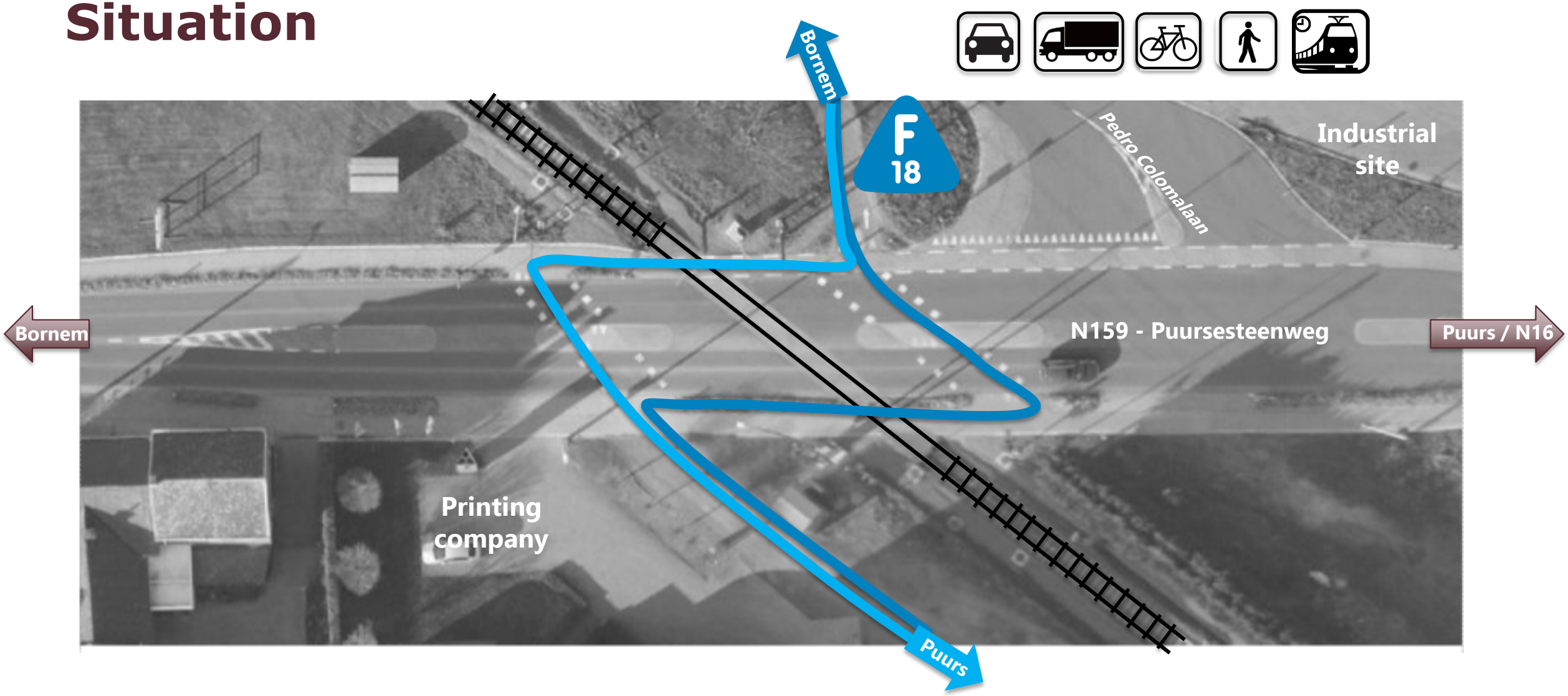
Location - Bornem



Situation



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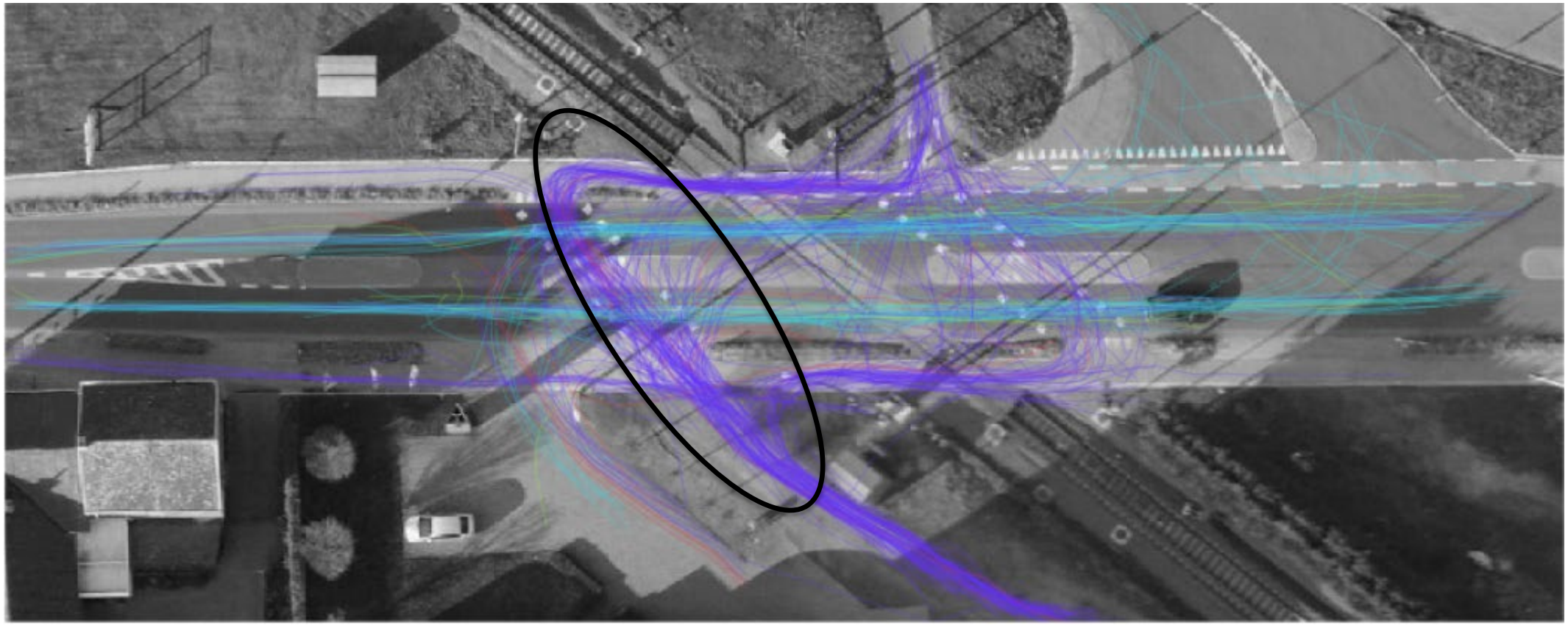
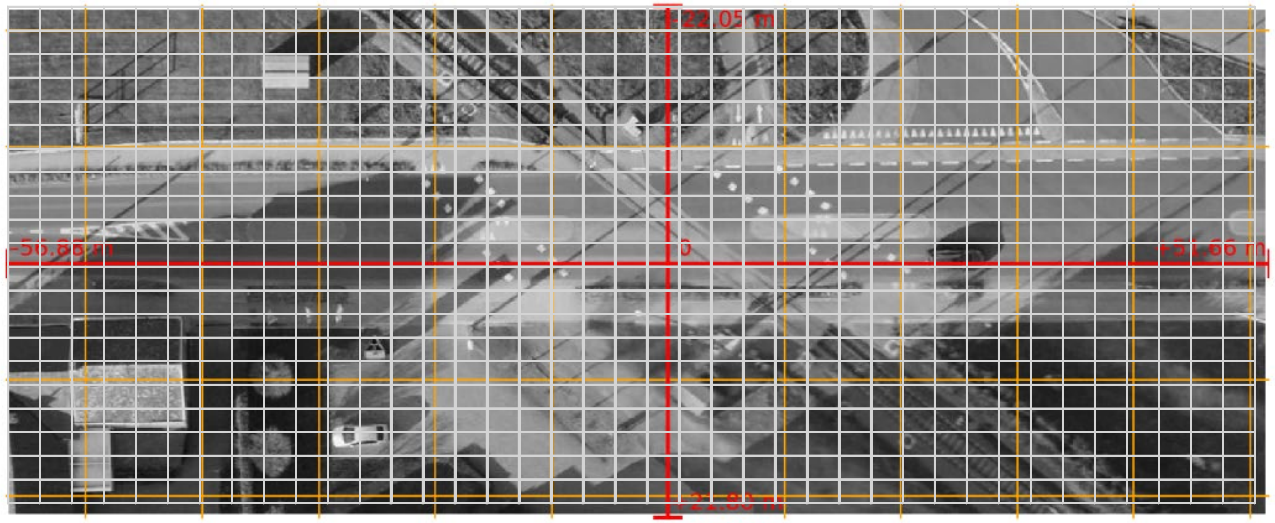
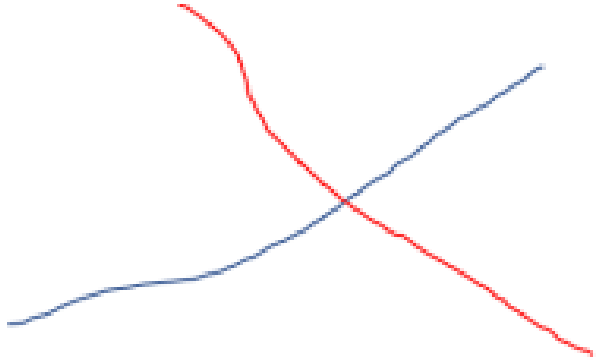
Tracks of road-users

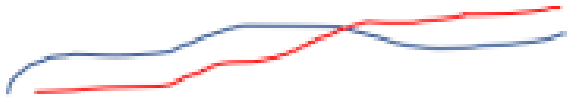


Method: near-accidents

- **spatial:**
  - gridcel 1m x 1m
  - crossing tracks with angle >30°
- **time:**
  - crossing tracks in timeframe of 1 second

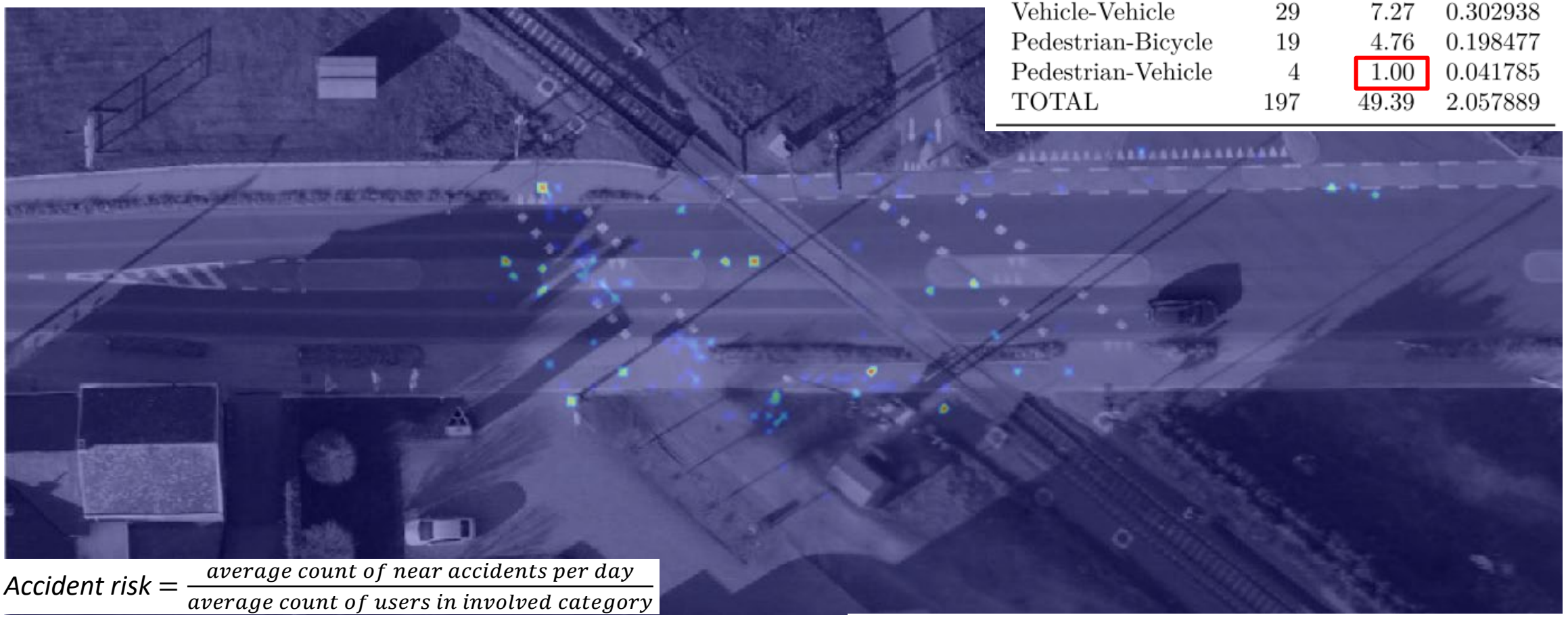




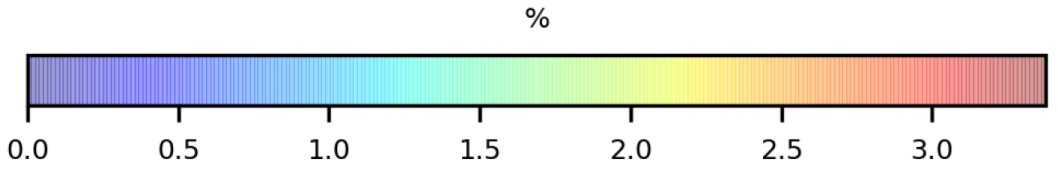


Heatmap: accident risk

TYPE	Total	Per day	Per hour
Bicycle-Bicycle	113	28.33	1.180413
Bicycle-Vehicle	32	8.02	0.334276
Vehicle-Vehicle	29	7.27	0.302938
Pedestrian-Bicycle	19	4.76	0.198477
Pedestrian-Vehicle	4	1.00	0.041785
TOTAL	197	49.39	2.057889



$$\textit{Accident risk} = \frac{average\ count\ of\ near\ accidents\ per\ day}{average\ count\ of\ users\ in\ involved\ category}$$



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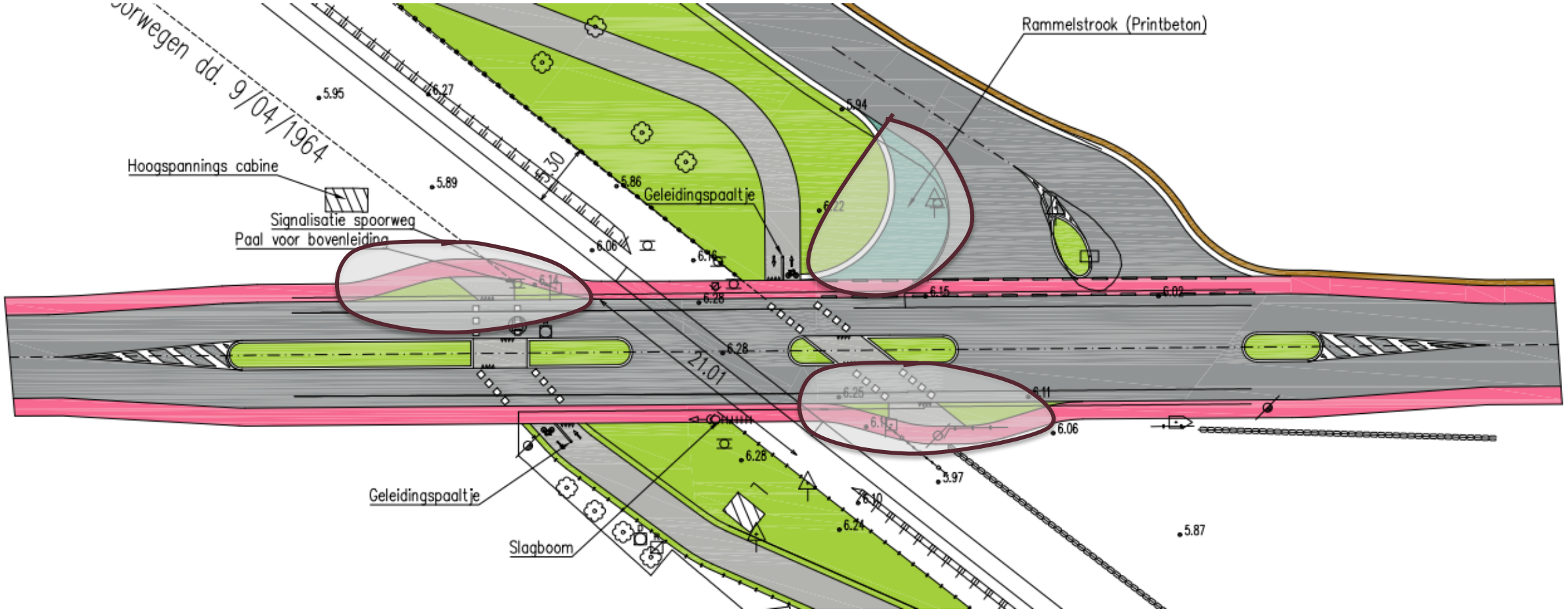
Design ←→ Realization

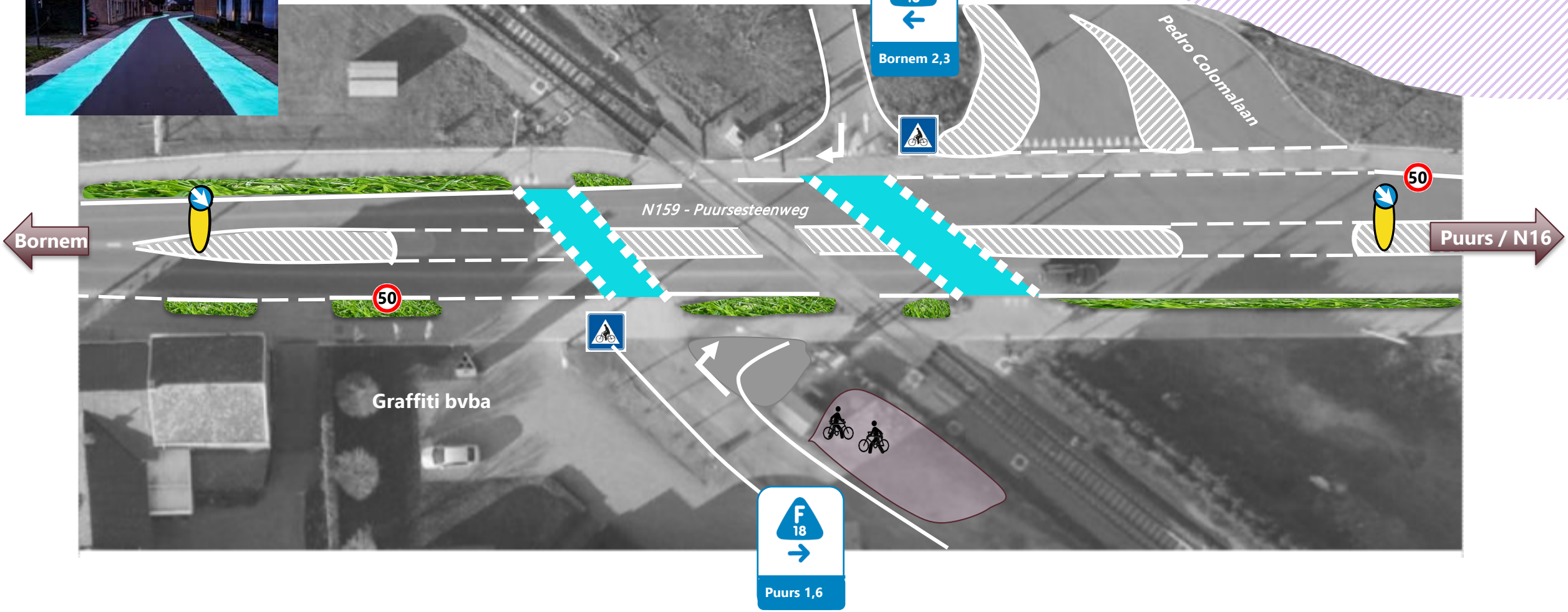


Design logic ←→ User logic

- The original design was not implemented.
- In an ideal situation, this intersection needs a measure to separate the different users.
- Such a measure takes study, money, effort and time… but is no excuse to do nothing now.
- Because when nothing changes to the current situation, the accident risk will remain the same.
- If users don't follow the design logic, then a potential dangerous situation is created.
- The tested technology makes us understand the user logic and behaviour on a very short term.
- So let's learn from this and take some small measures now to improve safety.

Scenario 1: small measures – no structural interventions

Industrial Site



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- The technology is very usefull to detect weak spots, on a short term.
- No need to wait with small measures to improve traffic safety.
- User logic must be included in the design.
- Valuable input for similar crossings and new design guidelines.
- We created new bicycle datasets: countings / near accidents / behaviour.
- Make it available in Cycle Data Hub – Sharing is Caring.

Thank you for your attention