Measuring infrastructure safety

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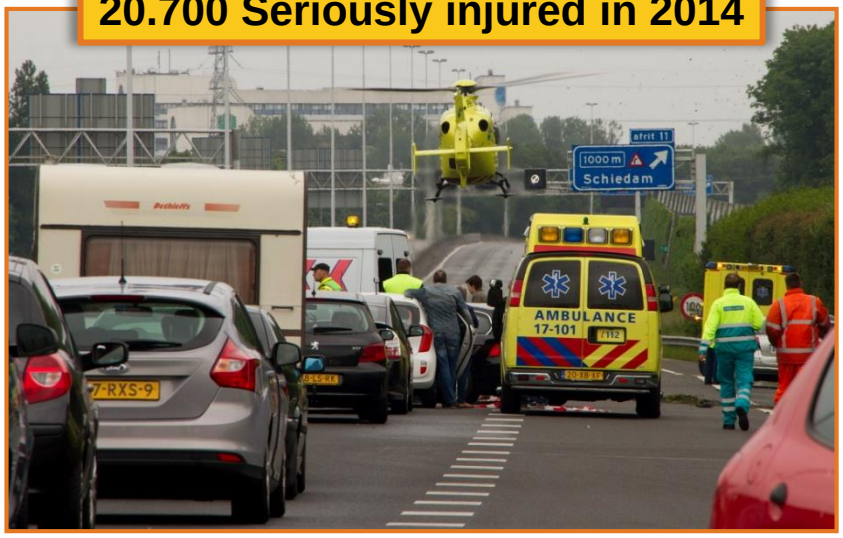
Road casualties in The Netherlands

621 Fatal accidents in 2015

20.700 Seriously injured in 2014



Improving Road Safety

- **Safe drivers**
- **Safe cars**
  - European New Car Assessment (EuroNCAP)
- **Safe roads**
  - European Road Assessment Programme (EuroRAP)

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European Road Assessment Programme

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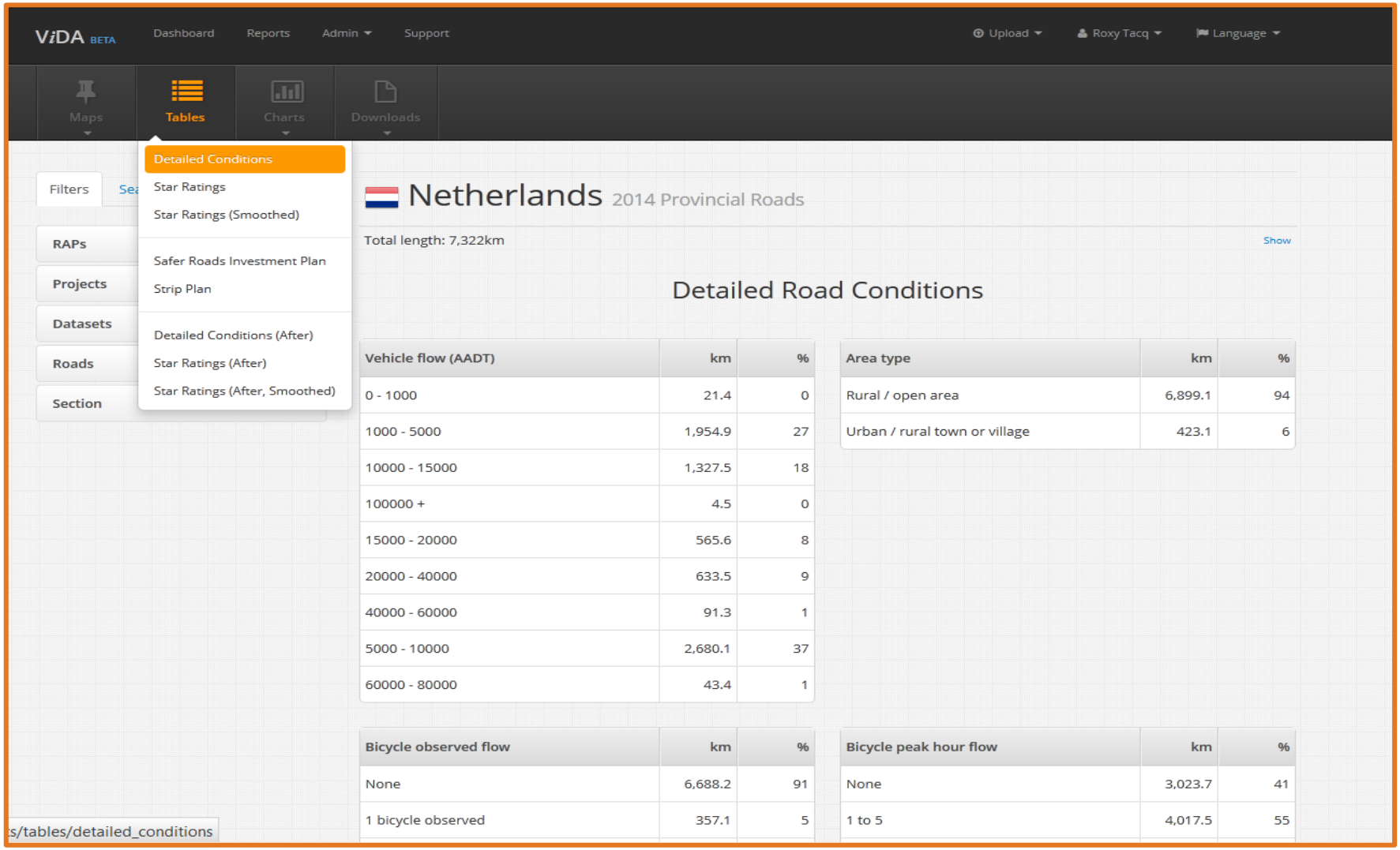
ViDA Database (1)



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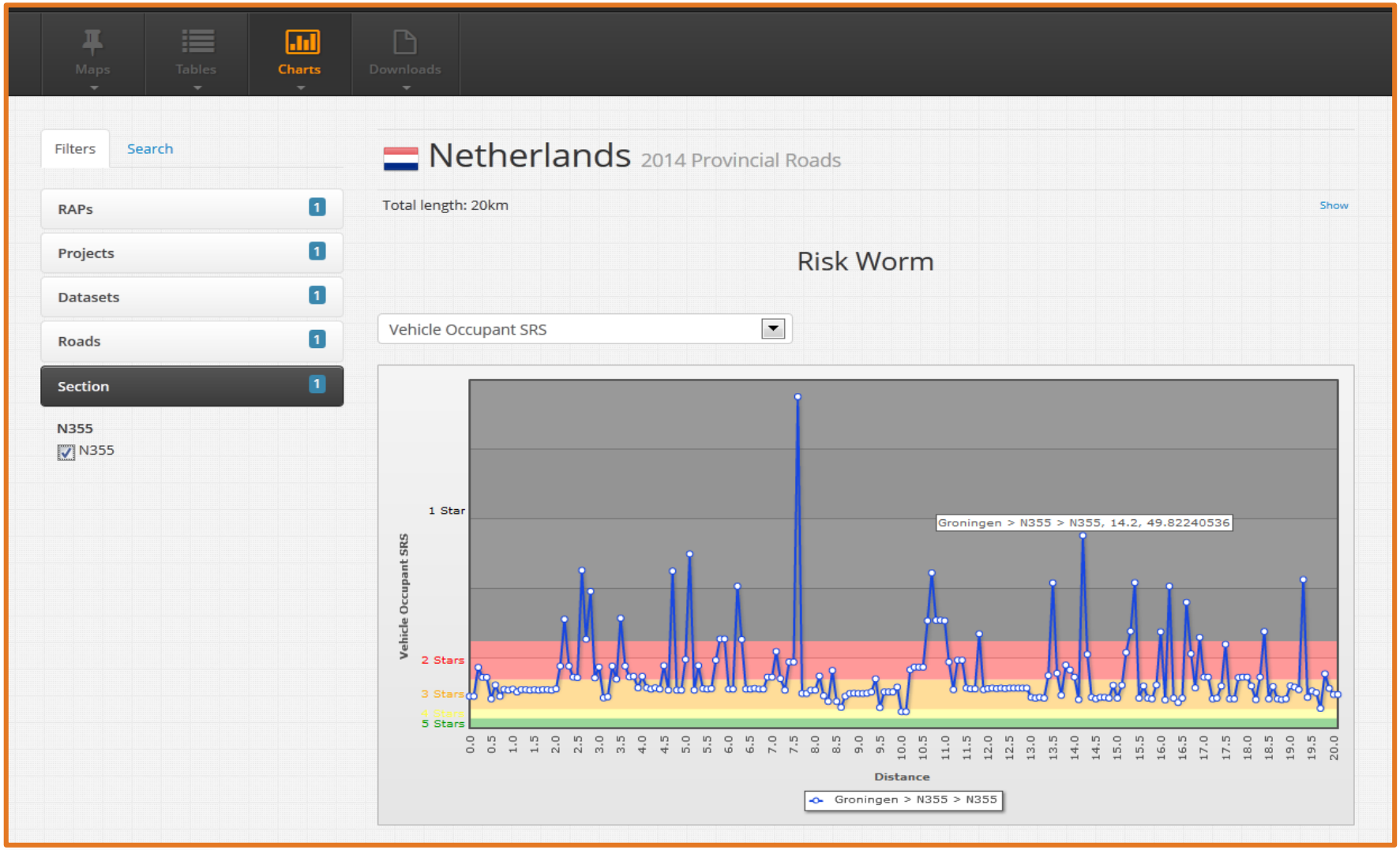
ViDA Database (2)



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Example

Road Assessment in NL to date

- **Assessment of state roads (app. 5,200 km)**
  - 2009: Commitment minister of Transport: all state roads must be rated at at least 3 stars in 2020 (RPS 1.0)
  - Currently on schedule, apart from app. 20 km

- **Assessment of provincial roads (app. 7,700 km)**
  - 2014: Analyses presented to provinces
  - 2015: Provincial elections
  - Safe infrastructure in coalition agreements

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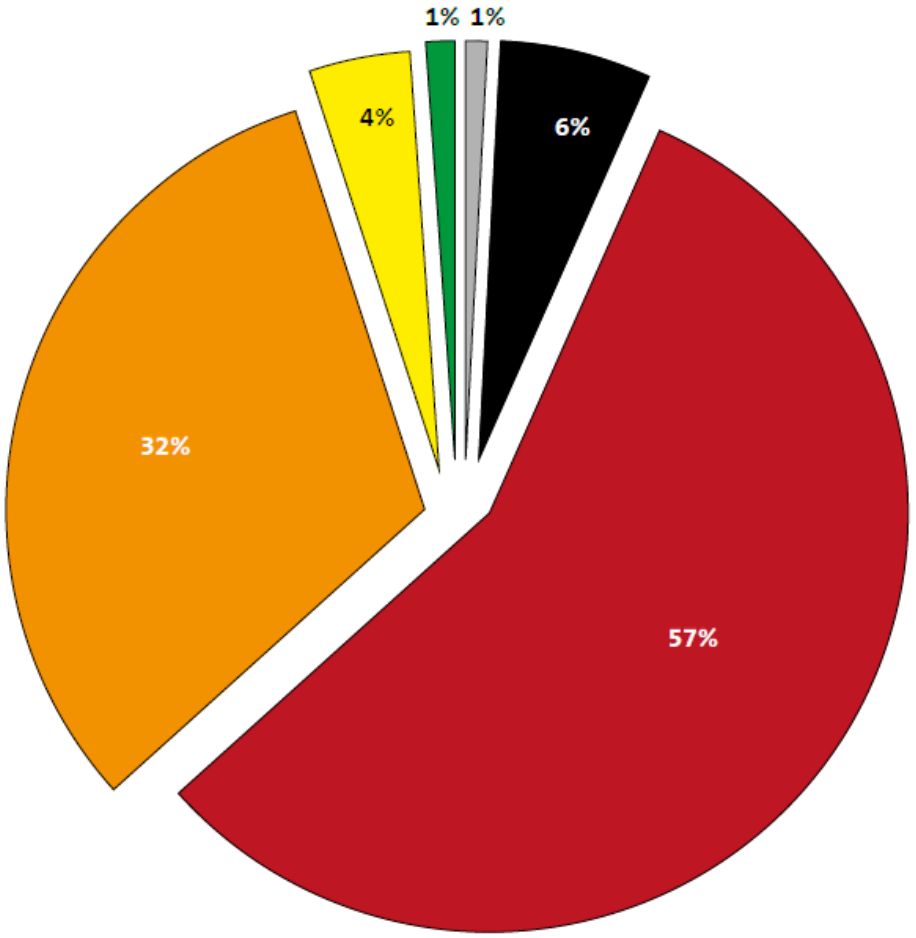
Looking closer: star ratings of provincial roads 2013



Safer road investment plan

- Total reduction in number of road casualties: 13,500
- Total cost: € 1,9 billion
- Total benefit: € 4,1 billion

Measure	Length/number	FSI Reduction X 1000	Benefits €	Costs €	Benefits-Costs Ratio
Verge guard rails	5625 km	5.7	1.805.480.985	763.878.000	2,4
Extra lane	378 km	2.5	772.400.921	509.902.500	2
Rumble strips	4231km	1,3	407.294.457	50.669.700	8
Hard strips/shoulders	2467km	1,1	292.203.646	218.824.200	1,3
Guard rails (central axis)	499km	0,7	196.238.602	90.530.000	2
Streaming area (turning traffic at T-crossing)	455 locations	0,6	192.855.993	60.853.100	3
Double middle barrier	26km	0,6	191.780.850	145.620.000	1
Streaming area (turning traffic)	95 locations	0,4	96.666.625	17.013.800	6
Middle barrier	156 km	0,3	85.232.698	19.632.700	4
Lighting at intersections	250 locations	0,0	92.373.429	9.028.000	10
TOTALS		**13,5**	**€ 4.132.528.206,00**	**€ 1.885.952.000**	**2,2**

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Return on investments

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Good practice: province of Friesland

- Investment of €30 million in safe infrastructure (2015-2019)
- EuroRAP analysis important basis for setting priorities

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New development: CycleRAP

- Developing a method to assess cycling infrastructure
- ‘Extended Star Rating for Bicyclist’ in EuroRAP

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Why CycleRAP?

- Number of road victims among cyclists no longer decreasing (+/- 180)
- Over 50% of the total number of seriously injured in traffic are cyclists
- Mostly one-bicycle accidents
- Infrastructure often part of the problem; also in the future!

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ANWB initiative

Develop an integral mobility approach for city centres…

…taking into account all interests (no 'one-issue solution')

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Robust Municipal Route Network

- Design method for public space,
- Involving road authorities and road users
- Matching:
  - Infrastructure types
  - Various means of transport
- Link with road safety
  - EuroRAP, CycleRAP
- Link with Smart Cities

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‘EuroRAP for cyclists’

Aims ANWB:

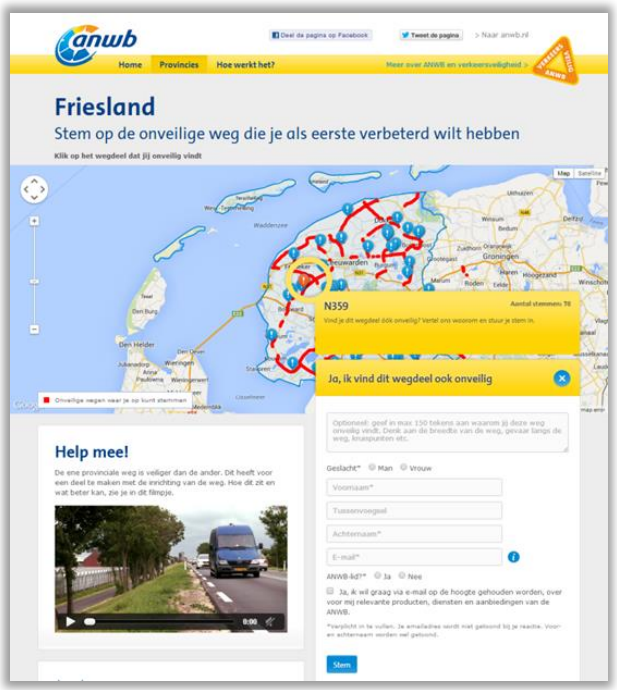
- Contribute to safe cycling
- Contribute to reducing the number of road victims with 50%

Star rating

- Developed by SWOV, commissioned by ANWB
- Safety score for cycling infrastructure
- Building on EuroRAP method
- Looking at risk prevention
- Based on 23 road characteristics + amount of traffic

Next steps

- First version CycleRAP method ready in summer 2016
- Pilots carried out in Friesland, Amsterdam, Rotterdam/The Hague
- Many road authorities are interested
- Ambition is to involve members
  - Regional level
  - Local level



CycleRAP in practice

- Scientifically based method
- Execution in steps:
  - Collecting images
  - Coding
  - Calculation of scores
  - Reporting

Collecting images

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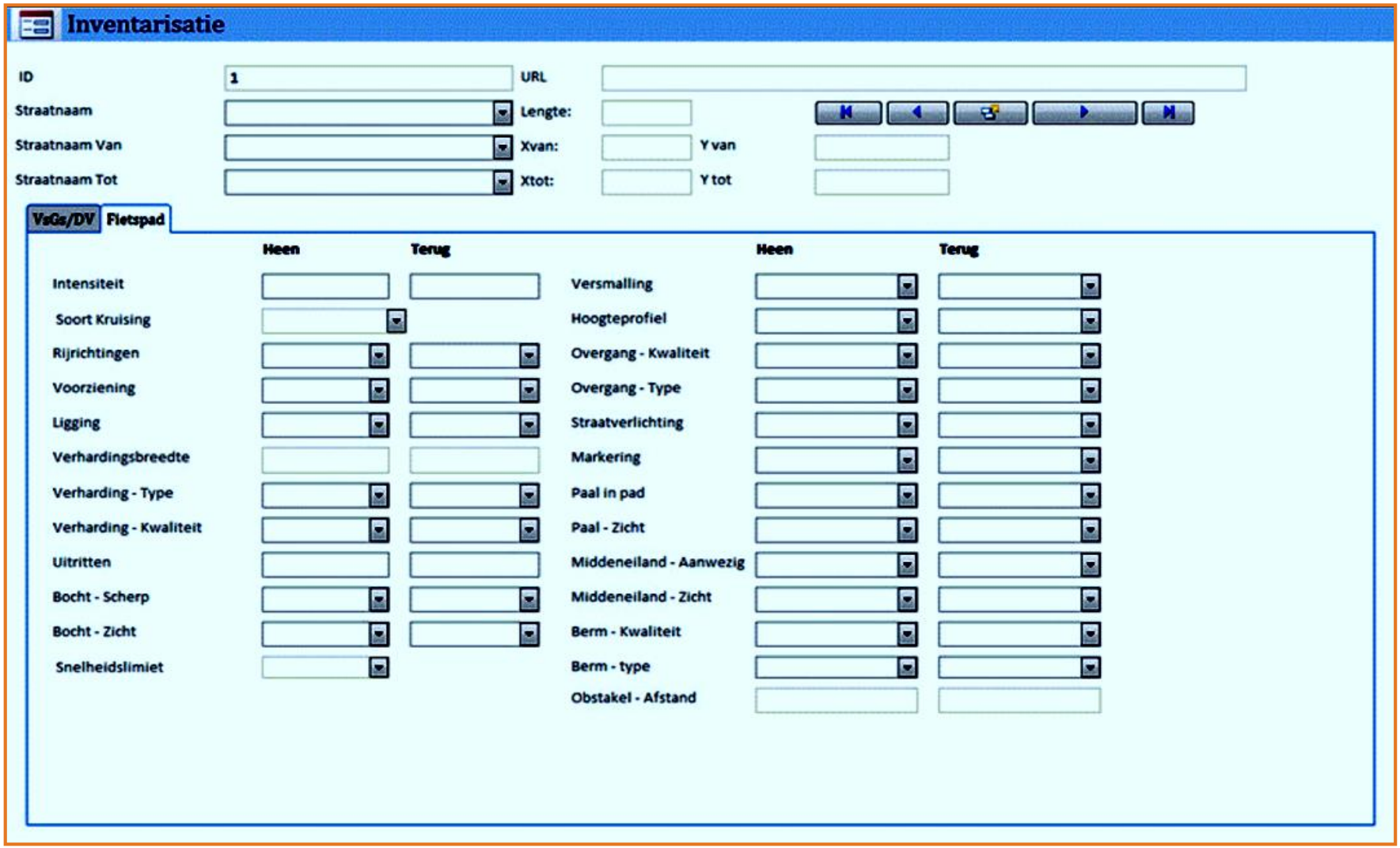
Coding road characteristics



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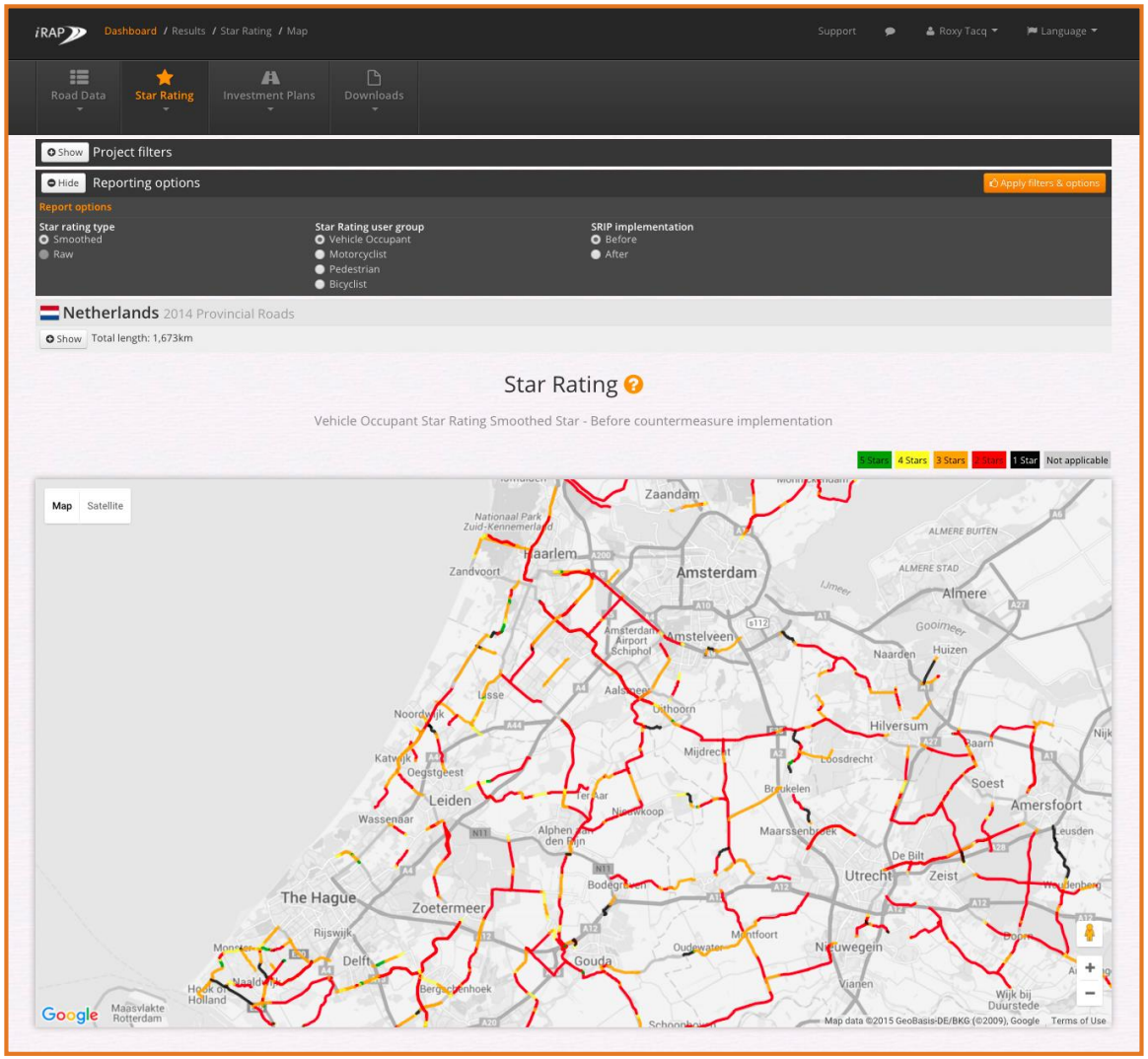
Calculating the score



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‘From data to action’…

- All state roads assessed with RPS 3.0 in 2020; min. 3 star
- All provincial roads rated at min.3 stars in max. 20 years
- Major municipal roads assessed with EuroRAP
- CycleRAP: assessment of major bicycle infrastructure (rural and urban area)
- Work towards 1 assessment method for infrastructure!

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