

OPEN QC SOFTWARE FOR LiDAR POINT CLOUDS

AUTOMATING POINT CLOUD QC

MARTIN KODDE
GEODELTA

WE ARE GEODELTA



WE ARE GEODELTA



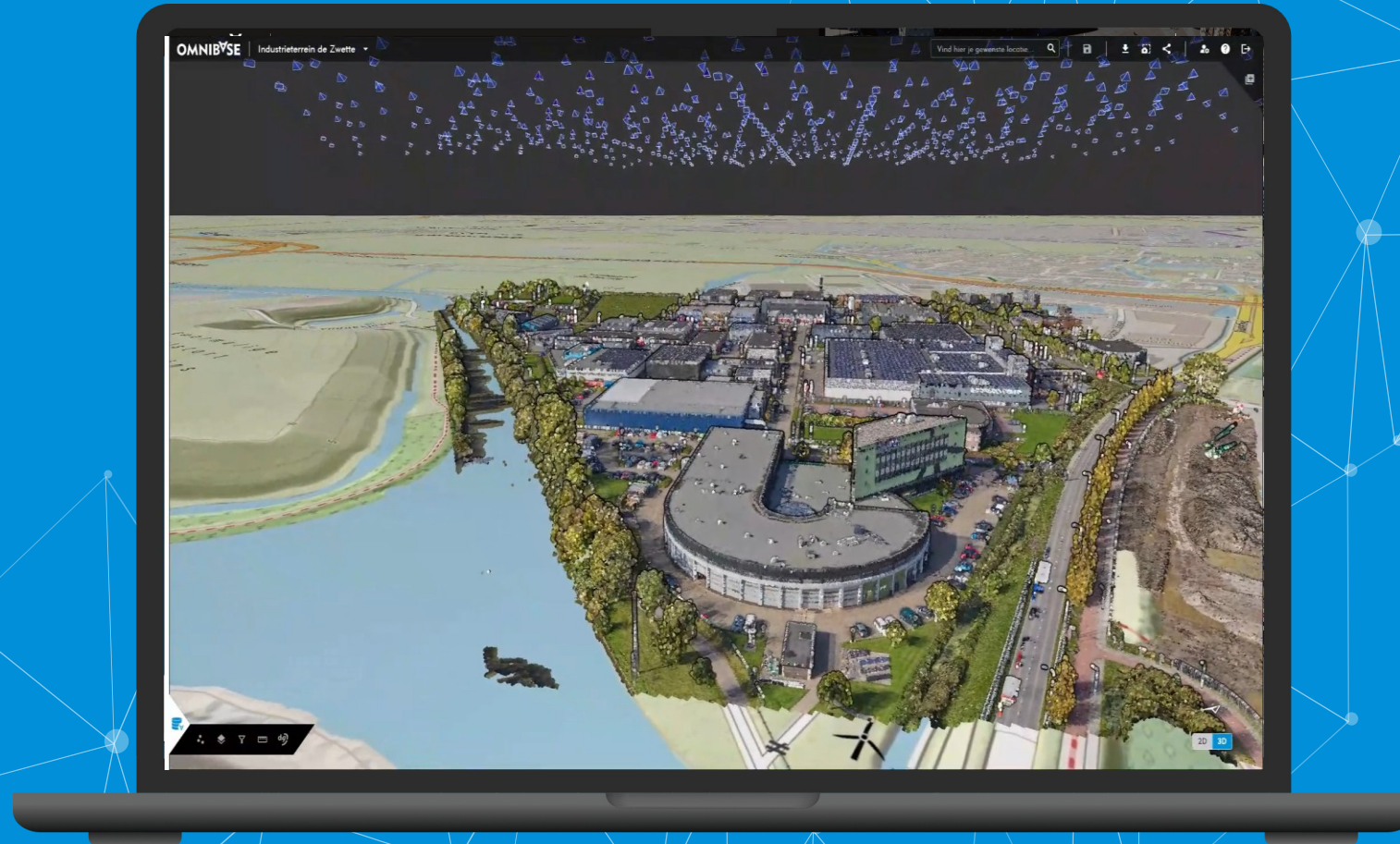
40 years of experience

Fully independent.

Software and advice for accurate geospatial data acquisition.

15+ employees with a background in geodesy or computer science.

OMNIBVSE

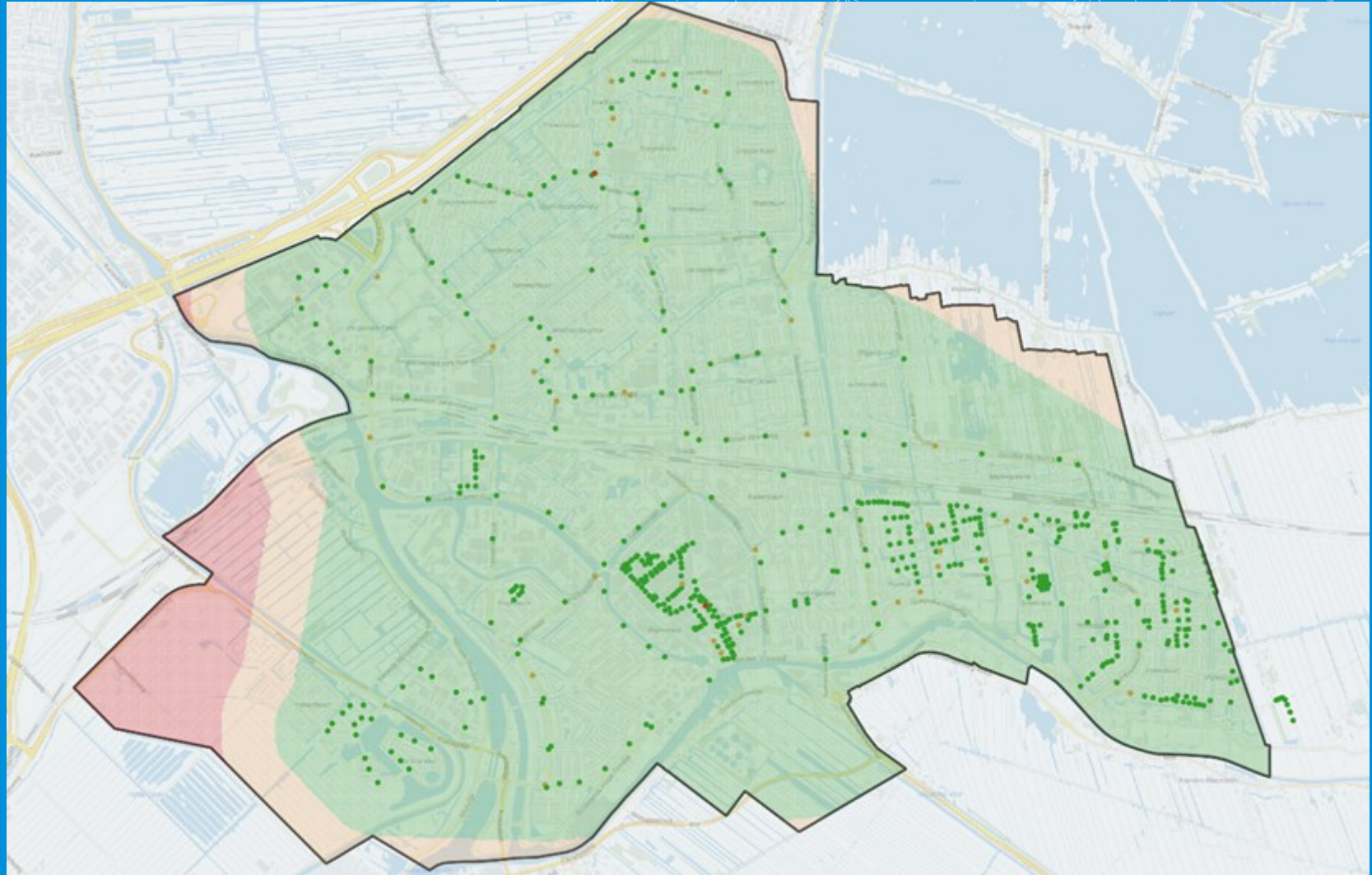




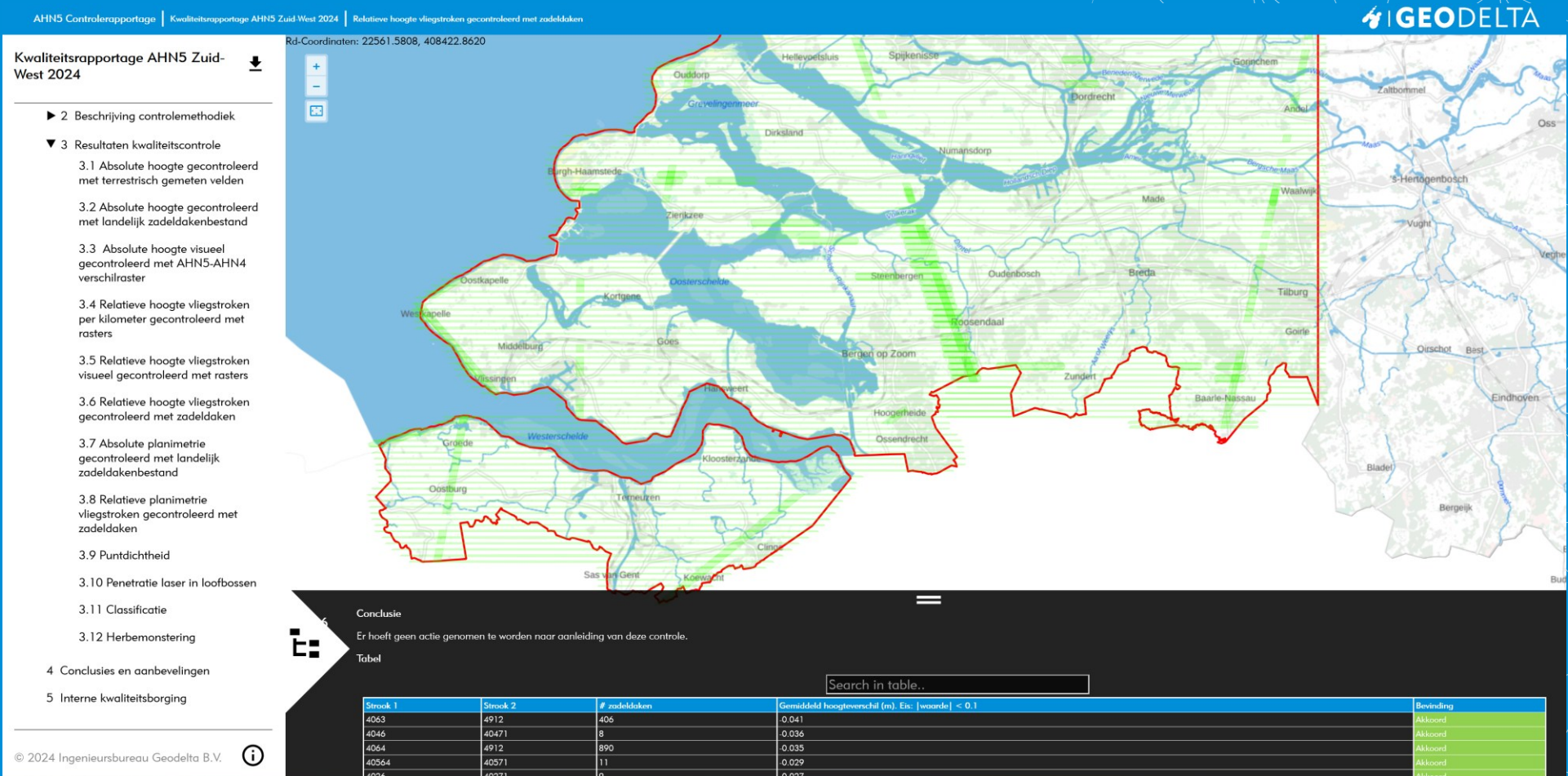
Delfy



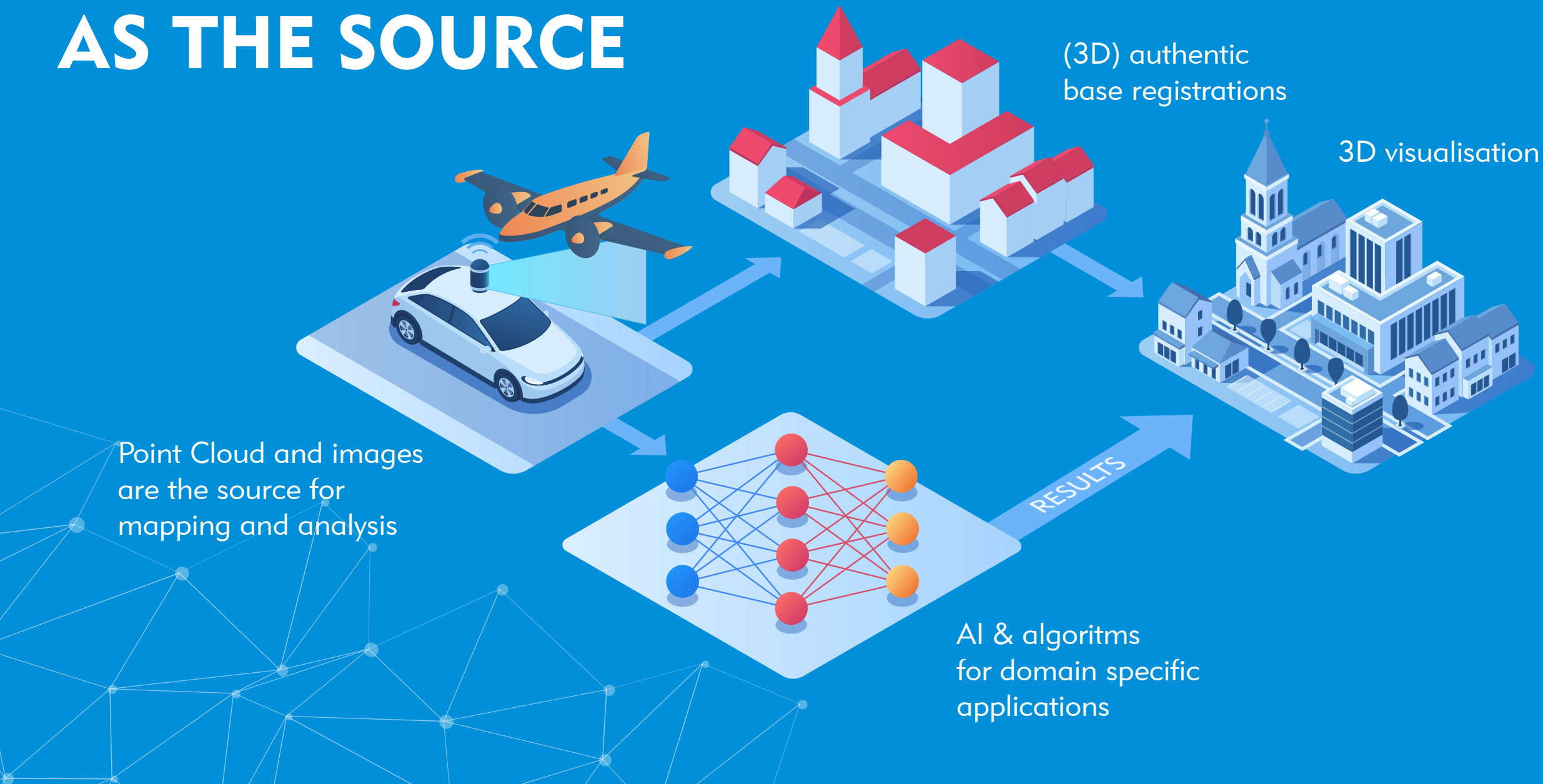
CONSULTANCY R&D



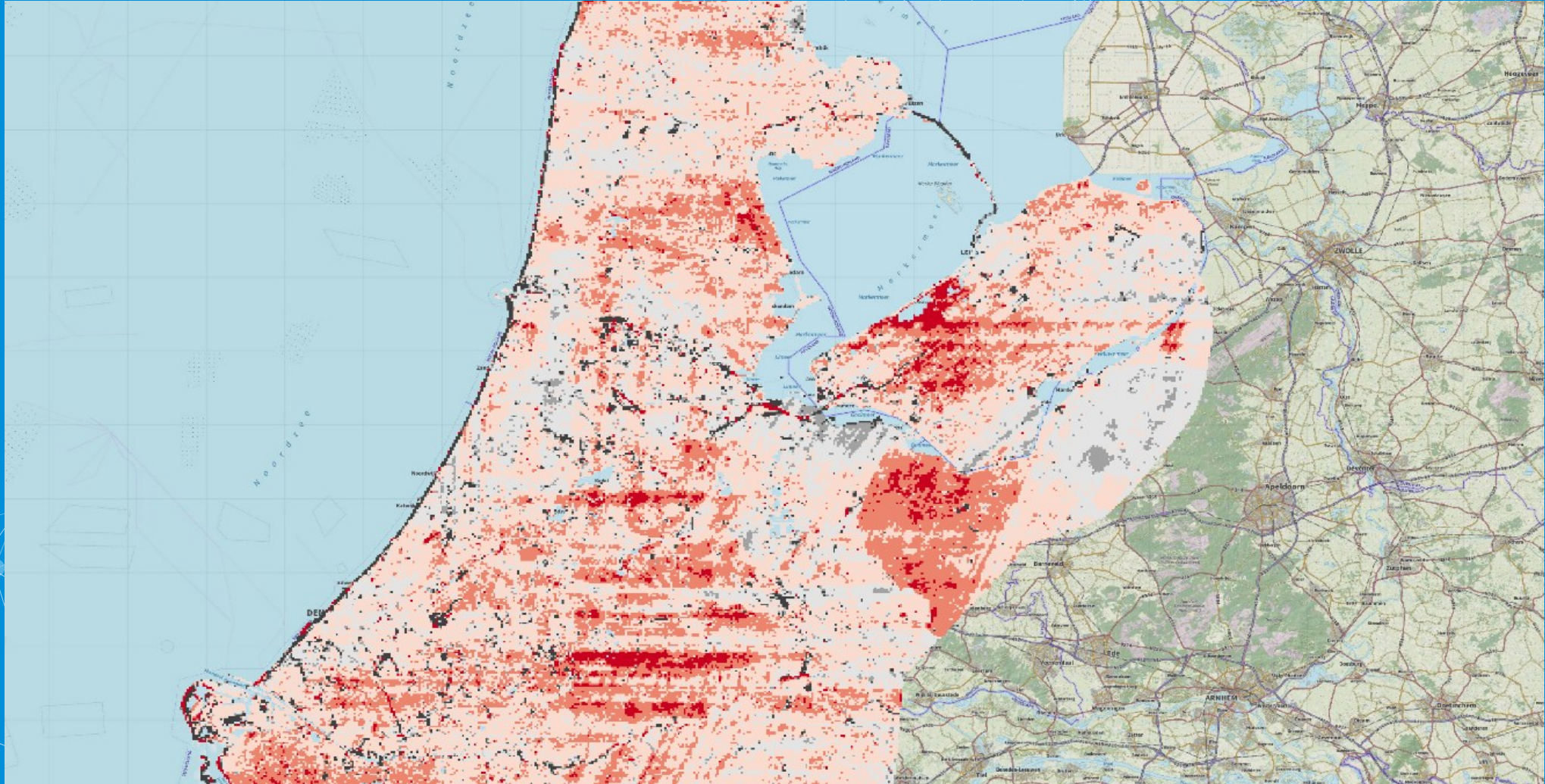
CONSULTANCY QUALITY CONTROL



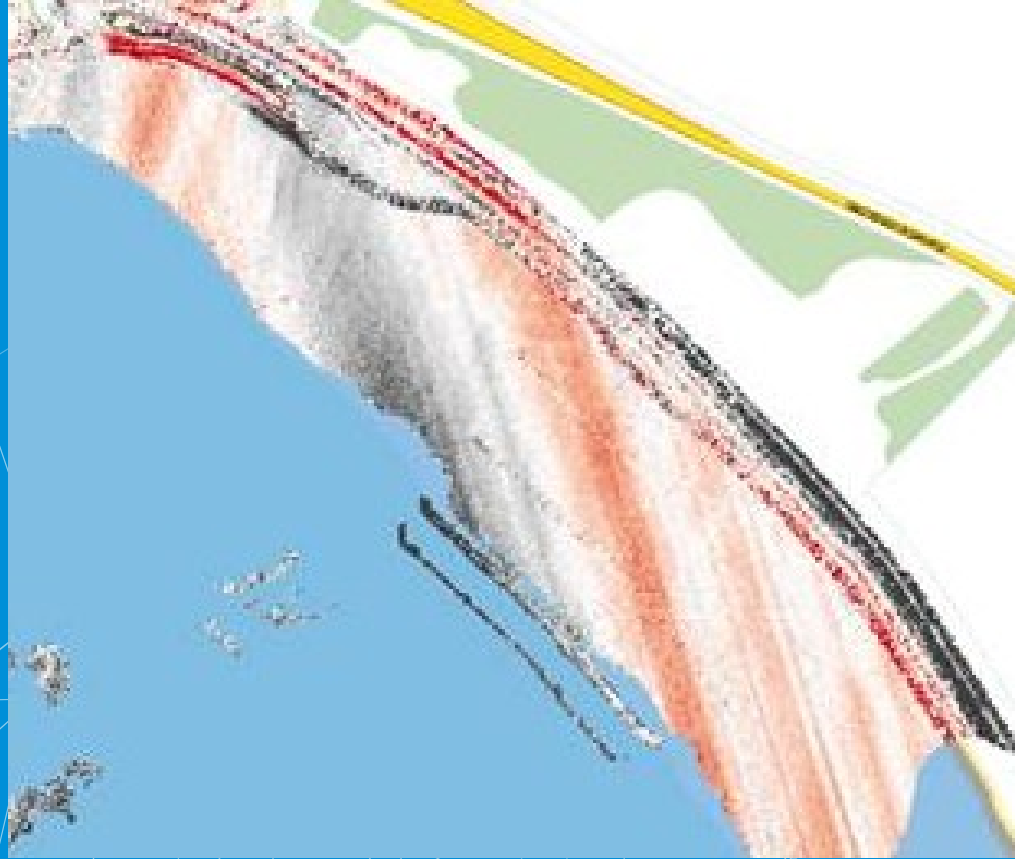
POINT CLOUDS AND IMAGES AS THE SOURCE



BUT... CAN WE TRUST IT?



BUT... CAN WE TRUST IT?



CLOTHES BROKEN AFTER 5 WASHES: PRIMARK IS GOING TO BECOME MORE SUSTAINABLE





FAST FASHION

A decorative network pattern of white lines and dots is located on the left side of the image, extending from the top-left towards the center.

FAST GEO 

QC OF AHN



**Entry
Control**



**Geometry
Control**



**Classification
Control**

AHN ENTRY CONTROL

- Report
 - Analysis of own QC
- Deliverables
 - File naming
 - File formats
 - Headers
- Completeness
 - All deliverables
 - Complete Area of Interest (Gaps)
- Meta data

AHN GEOMETRY CONTROL

(1/2)

- Height in NAP
 - Terrestrial points and point fields
 - Saddle-back roof database
 - Visual comparison with previous AHN
- Overlapping flight strips in height
 - Numerical with grids per km
 - Visual with grids
 - With corresponding saddle-back roofs

AHN GEOMETRY CONTROL

(2/2)

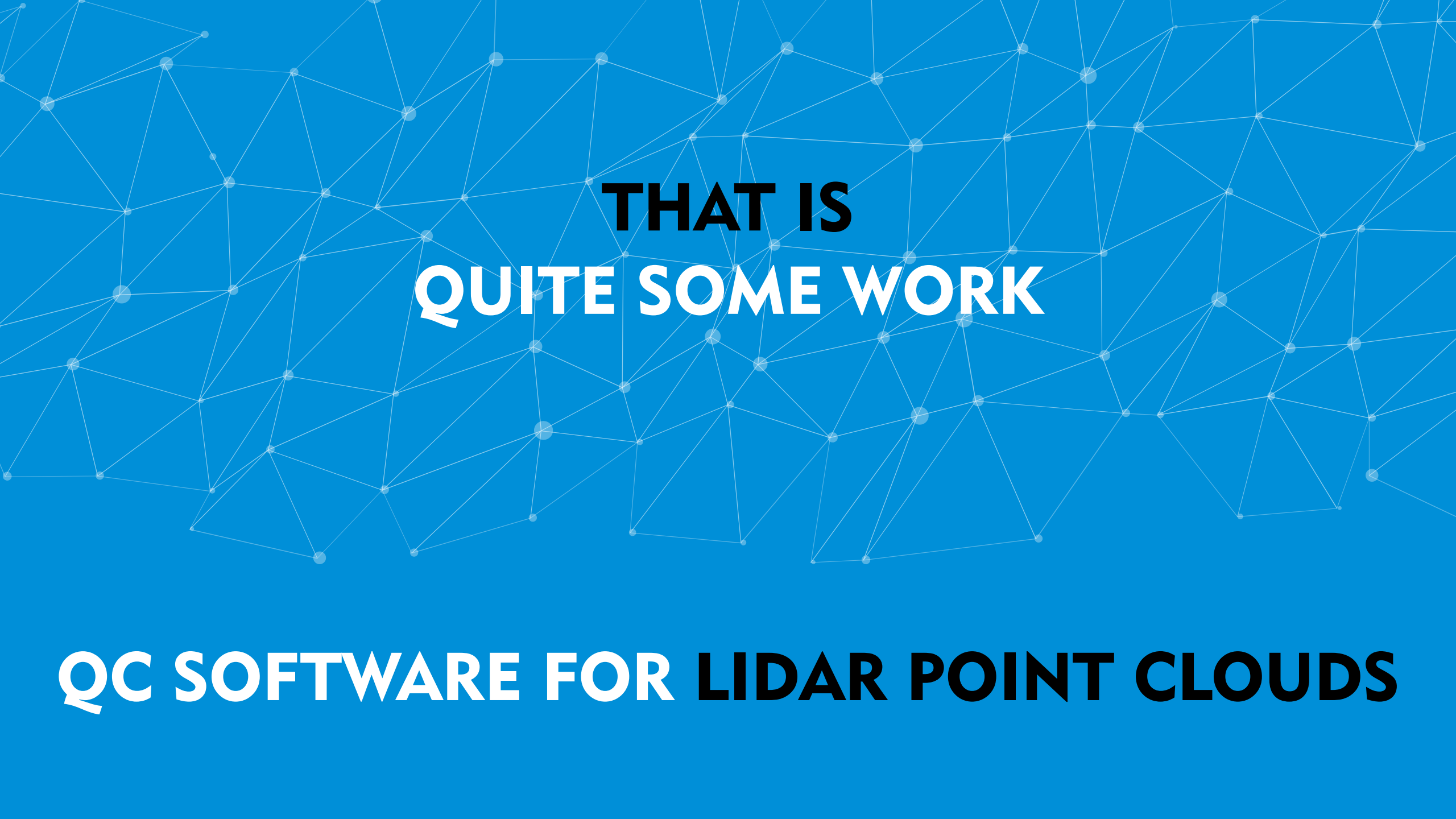
- Planimetry in RD
 - Saddle-back roof database
- Overlapping flight strips in planimetry
 - With corresponding saddle-back roofs
- Point density
- Penetration in deciduous forests
- Resampling

AHN CLASSIFICA- TION CONTROL

- Correctness of classification of the point cloud.



**THAT IS
QUITE SOME WORK**



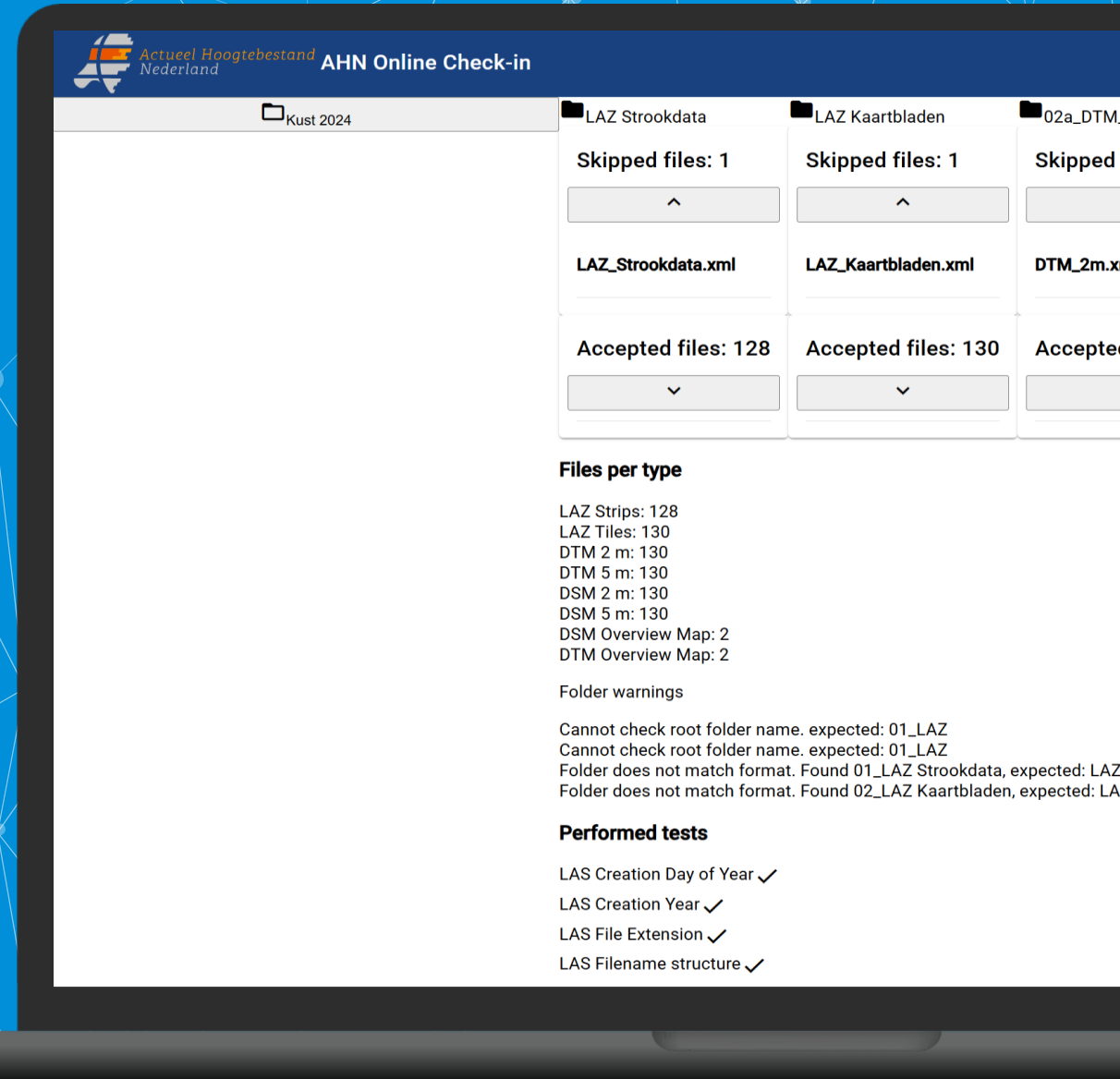
THAT IS
QUITE SOME WORK

QC SOFTWARE FOR LIDAR POINT CLOUDS

ENTRY QC SOFTWARE

Checks all incoming deliverables:

- File naming
- File formats
- Headers



GEOMETRY QC SOFTWARE

- Release May 2025
- Desktop application
- Outputs all test results for AHN except the visual checks (9 tests)
- Output in standard GIS-formats

Blok #	# zadeldaken	Planimetrisch verschil (m). Eis: waarde < 0.16 (m)	AHN4	Betr	Bevinding
8605	90	0.267	AHN4	-	
4119	7	0.259	AHN4	-	
2520	11	0.254	AHN4	-	
1352	43	0.253	AHN4	-	
1320	58	0.241	AHN4	-	
9063	9	0.240	AHN4	-	Bev
4698	94	0.171	AHN4	-	Bev
6527	102	0.171	AHN4	-	Bev
3545	49	0.171	AHN4	-	Bevir
8499	63	0.170	AHN4	-	Bevir
3985	38	0.170	AHN4	-	Bevir
	8	0.170	AHN4	-	

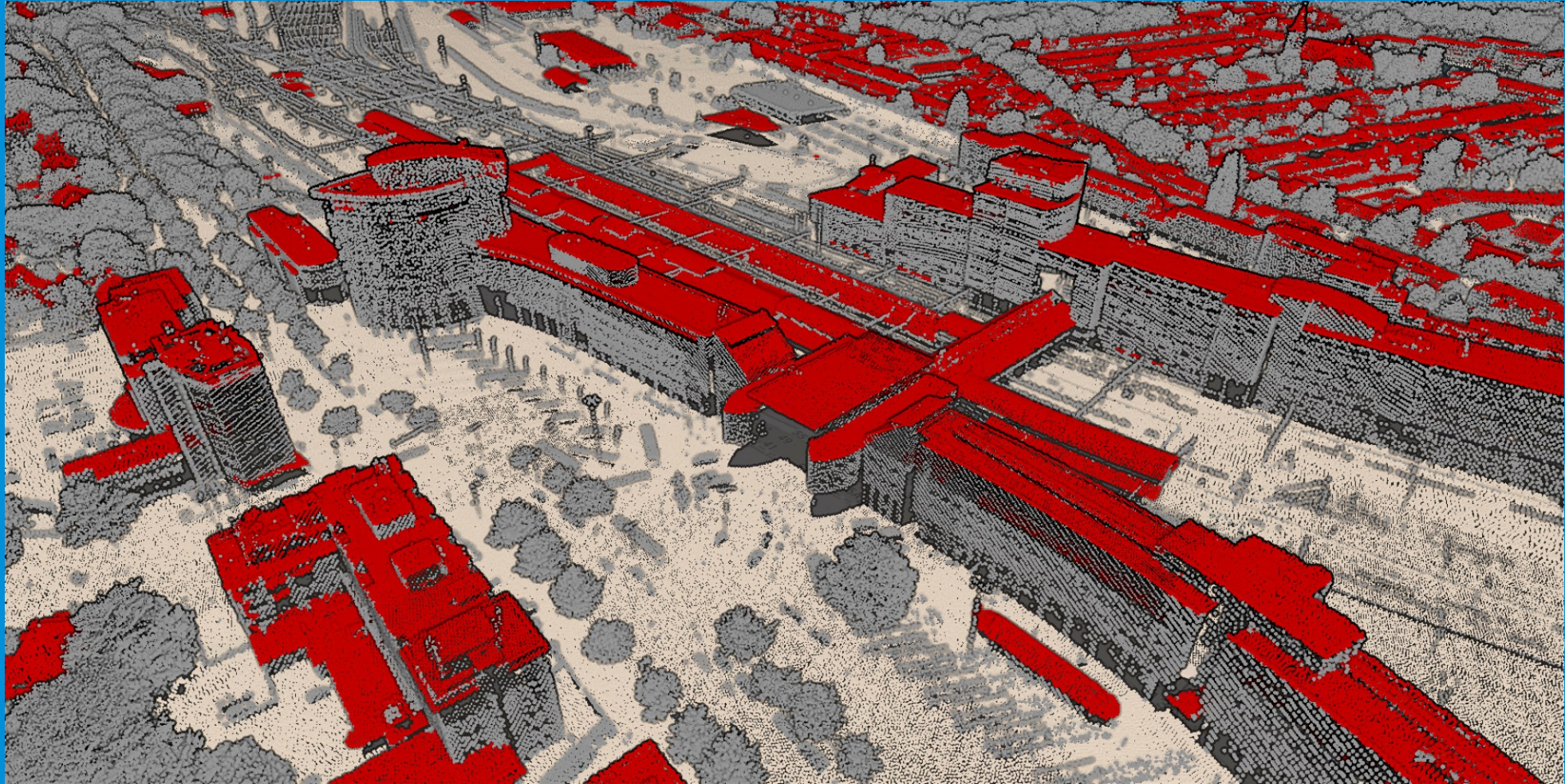


- The output files can be used by a specialist to assess:

- Is the data fit for purpose?
- Is the data compliant with the specifications?



CLASSIFICATION QC SOFTWARE

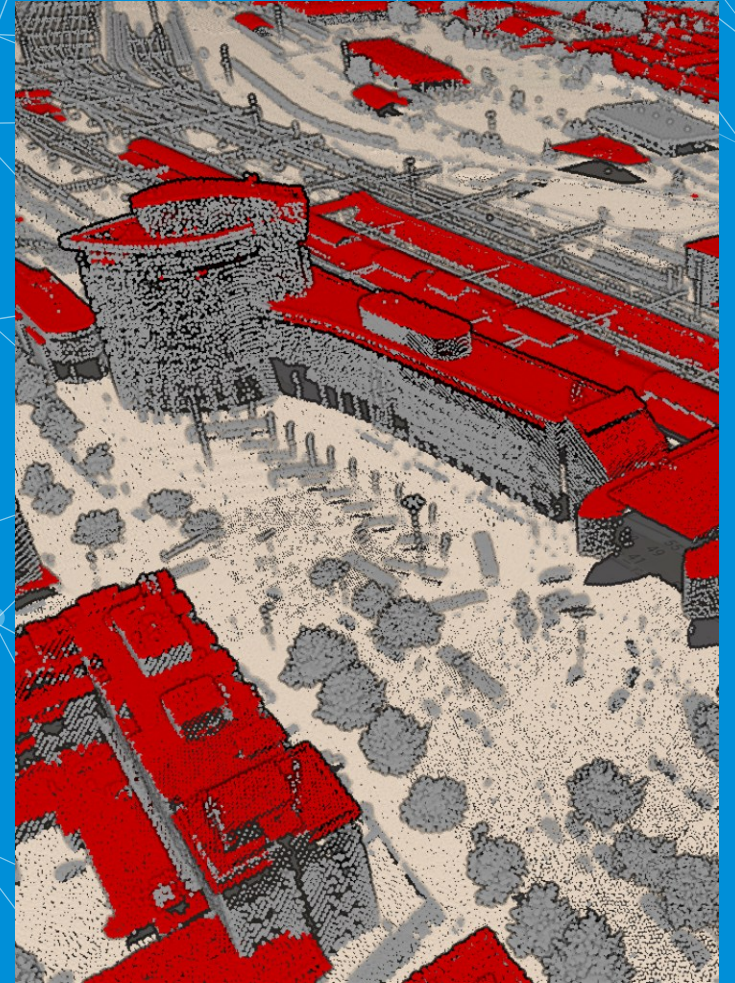
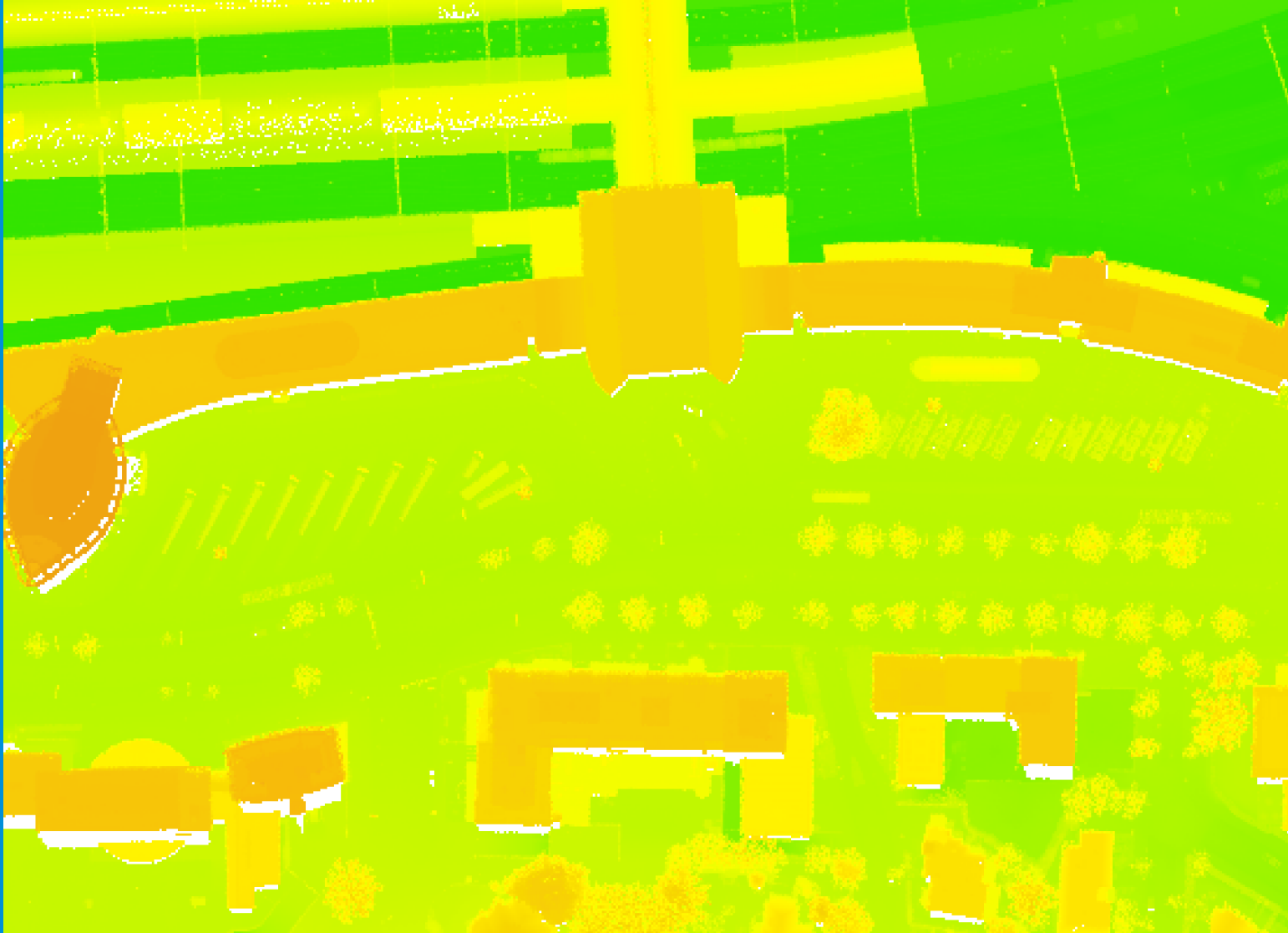


CLASSIFICATION QC SOFTWARE

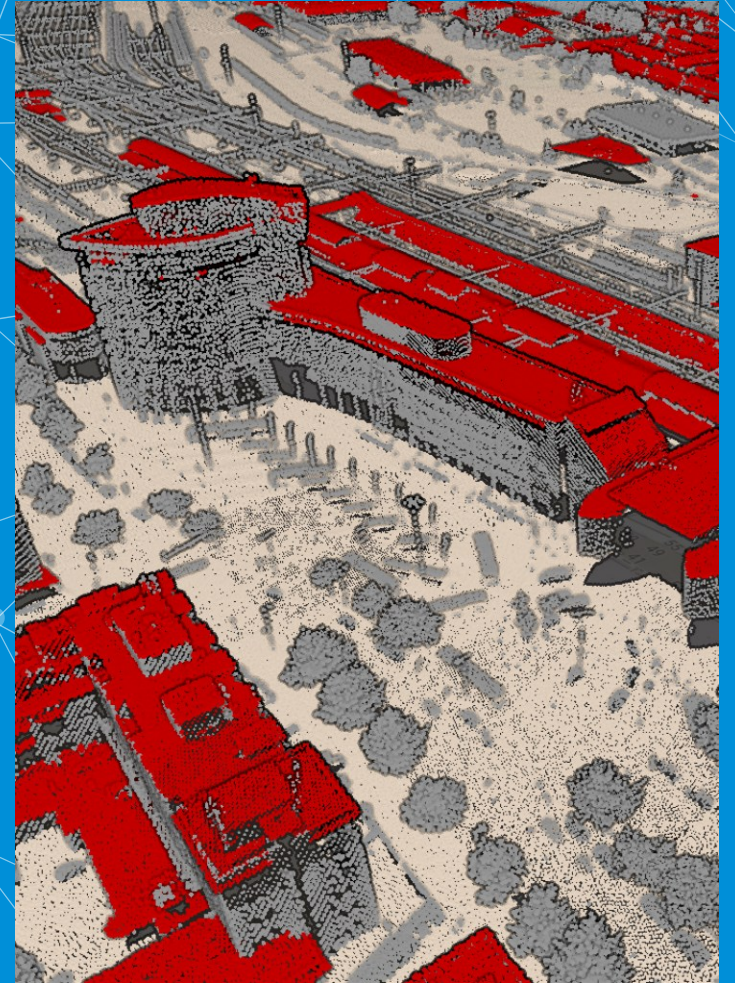
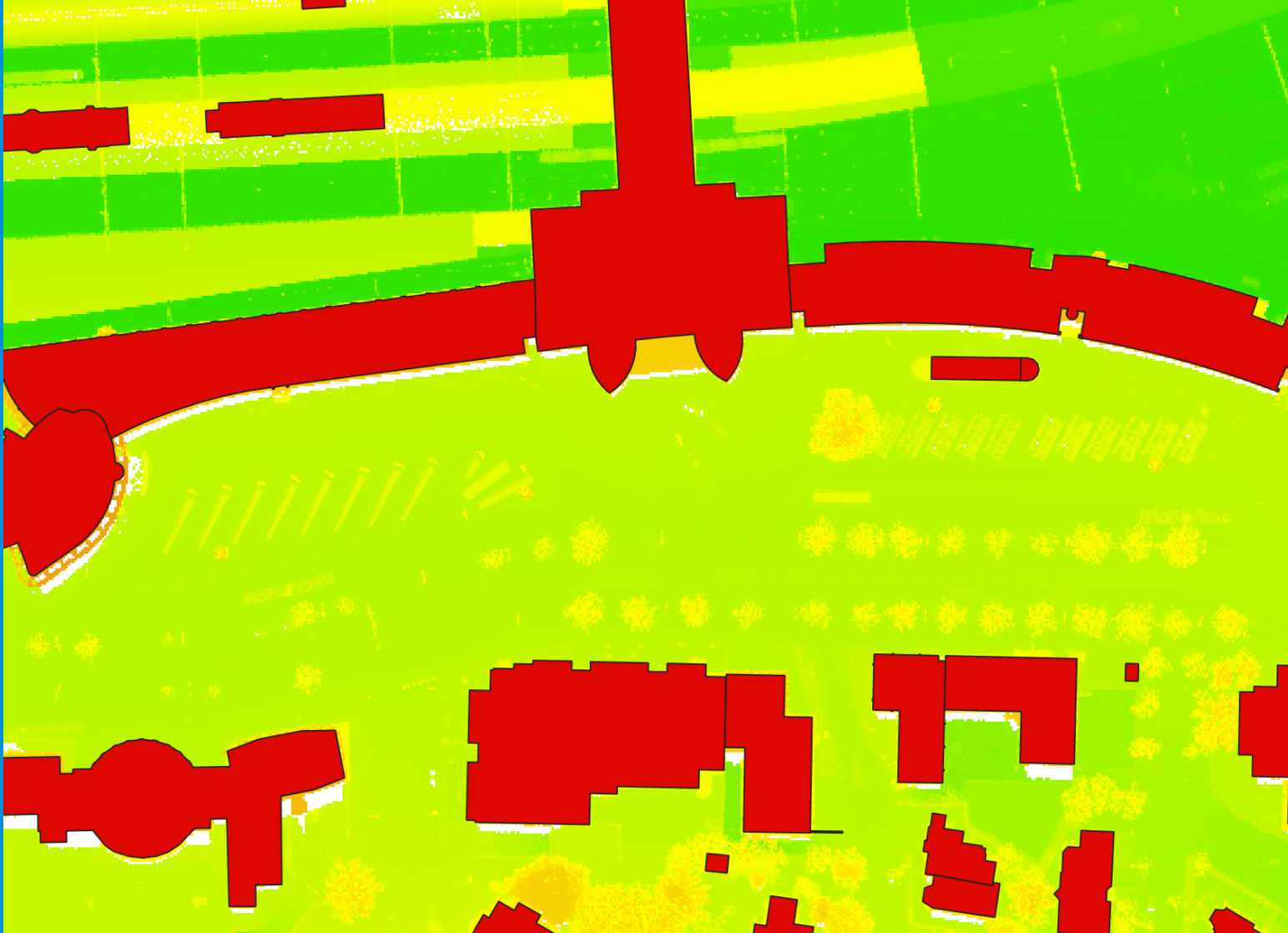
- Software to help with QC of classification
- Release date tba
- Desktop application
- QC based on risk-grids
- Output in standard GIS-formats



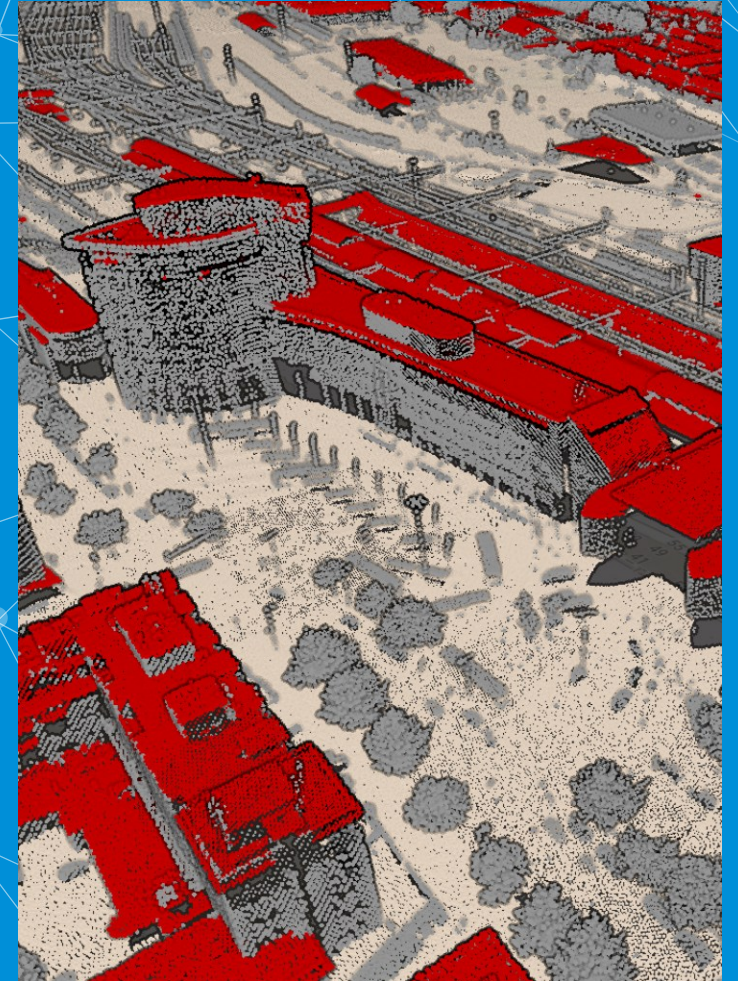
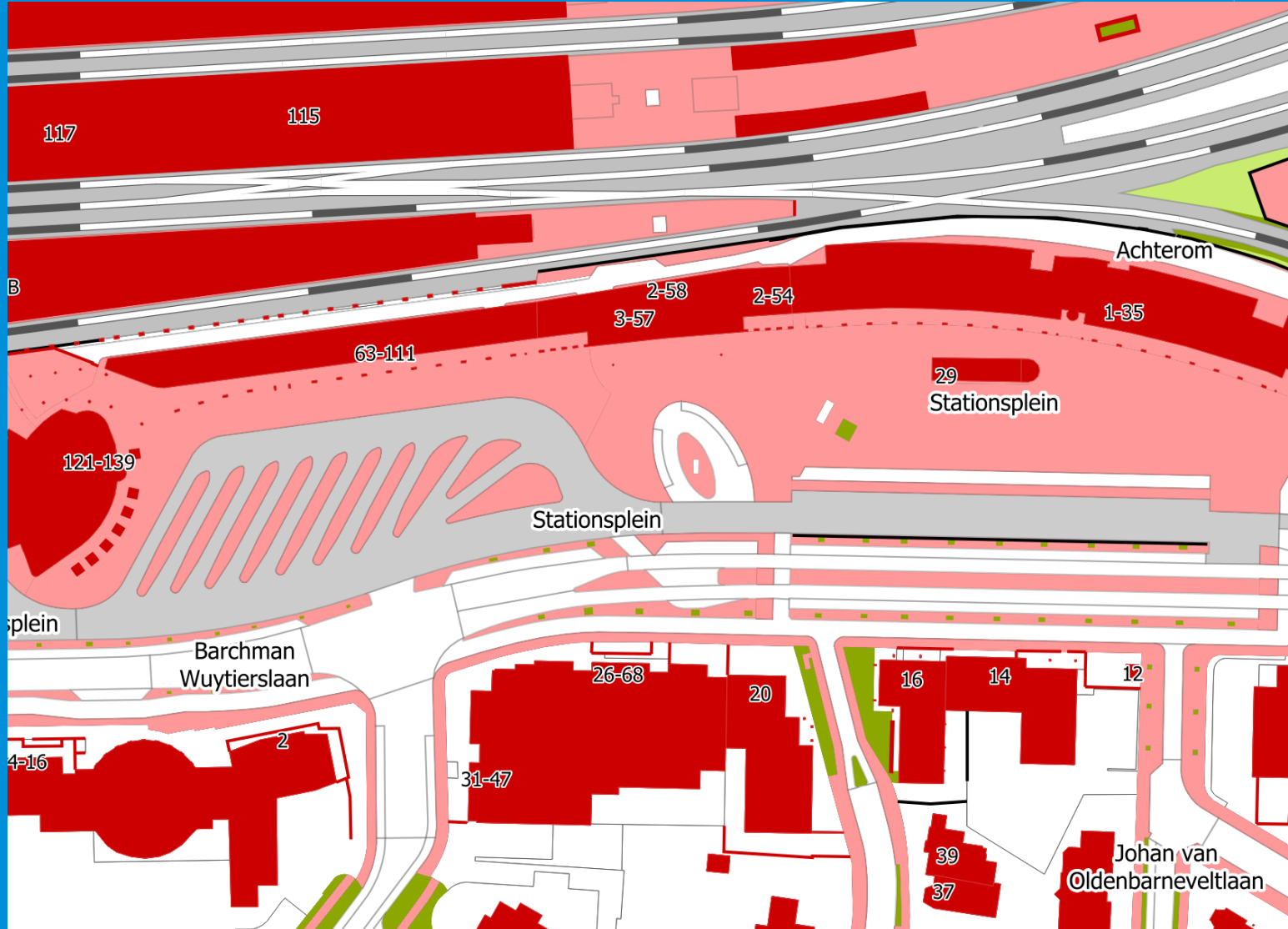
OLDER VERSION OF HEIGHT MODEL (AHN4)



BUILDING MAP (BAG)

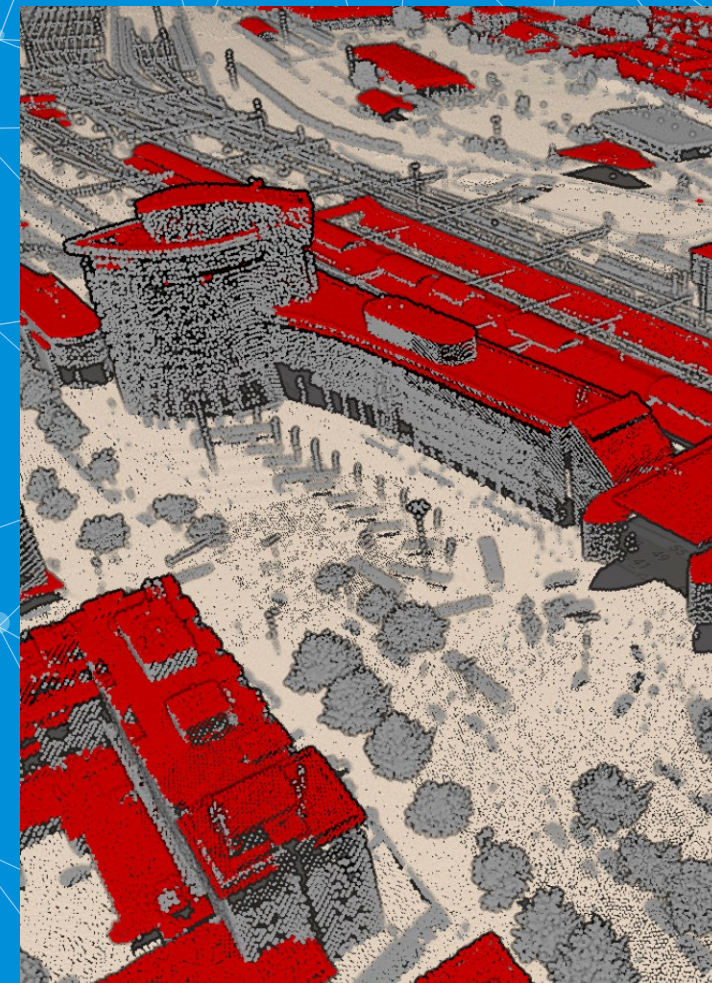


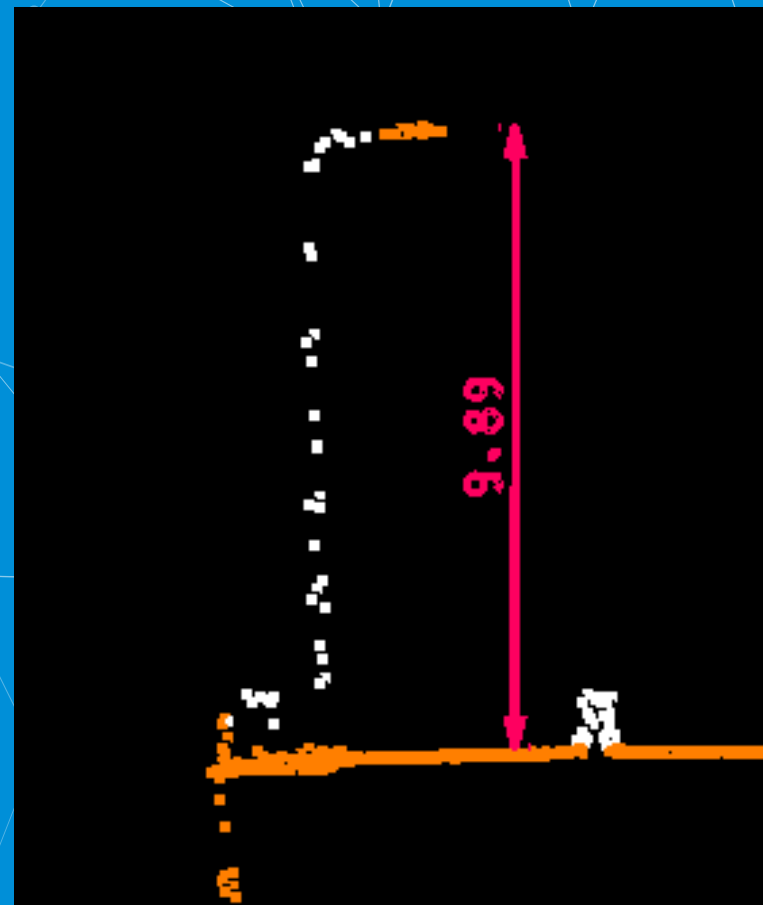
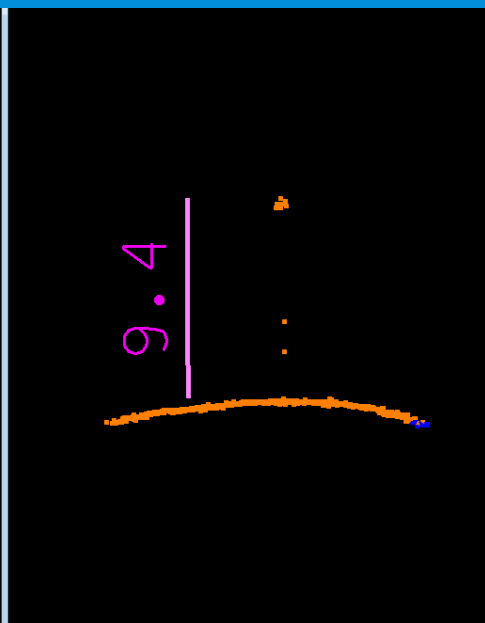
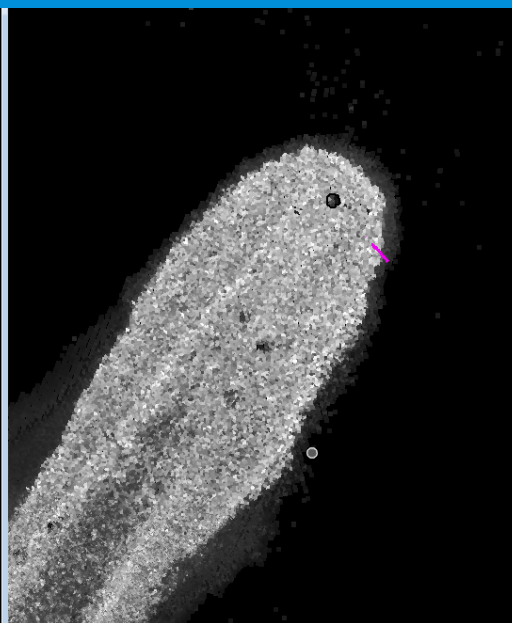
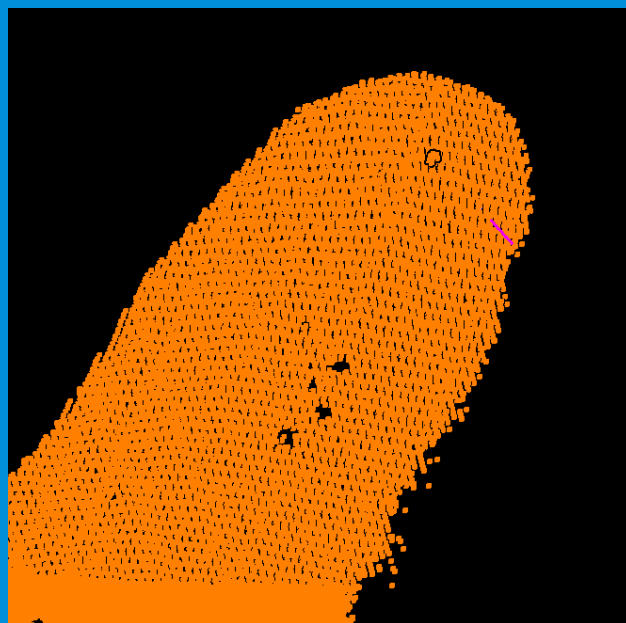
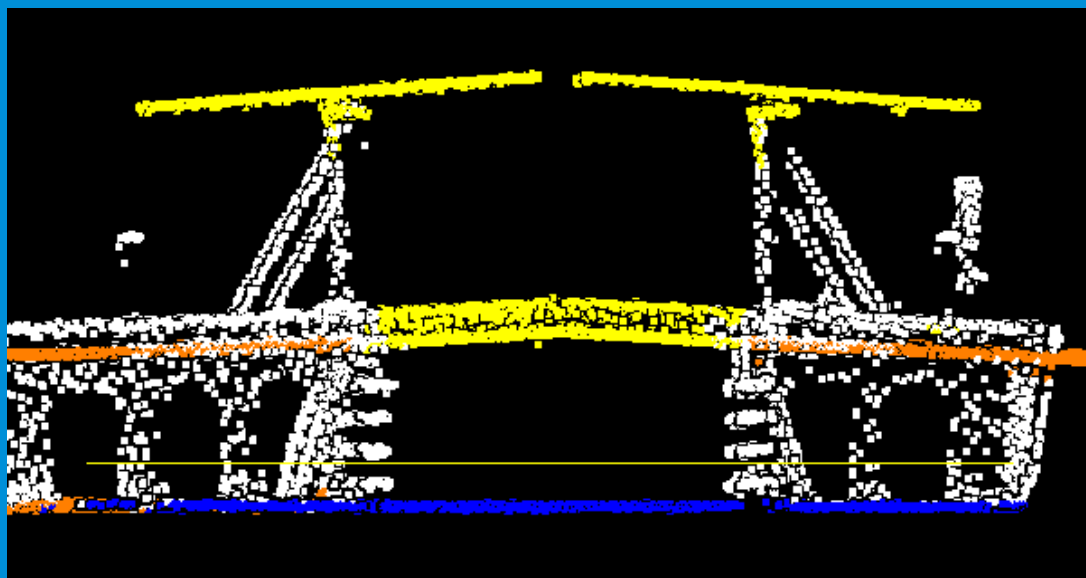
LARGE SCALE TOPOGRAPHIC MAP (BGT)



CLASSIFICATION REQUIREMENTS

Assigned class	Ground	Building	Water	Power	Civil structure	Other
Real class						
Ground		Req. 1	Req. 1	Req. 1	Req. 1	Req. 1
Building	Req. 2		Req. 3	Req. 3	Req. 3	Req. 4
Water	Req. 5	Req. 5		Req. 5	Req. 5	Req. 5
Power	Req. 2	Req. 6	Req. 7		Req. 7	Req. 6
Civil str.	Req. 2	Req. 8	Req. 8	Req. 8		Req. 8
Other	Req. 9	Req. 10	Req. 10	Req. 10	Req. 10	





CONCLUSION

High Quality data lasts longer (no Fast-Geo!)

Automated QC tooling helps to achieve this.

Check with HWH for availability of the tools.

Is a standardized QC process in Europe feasible?

GEODELTA

OPEN QC SOFTWARE FOR LiDAR POINT CLOUDS

AUTOMATING POINT CLOUD QC

MARTIN KODDE
GEODELTA

