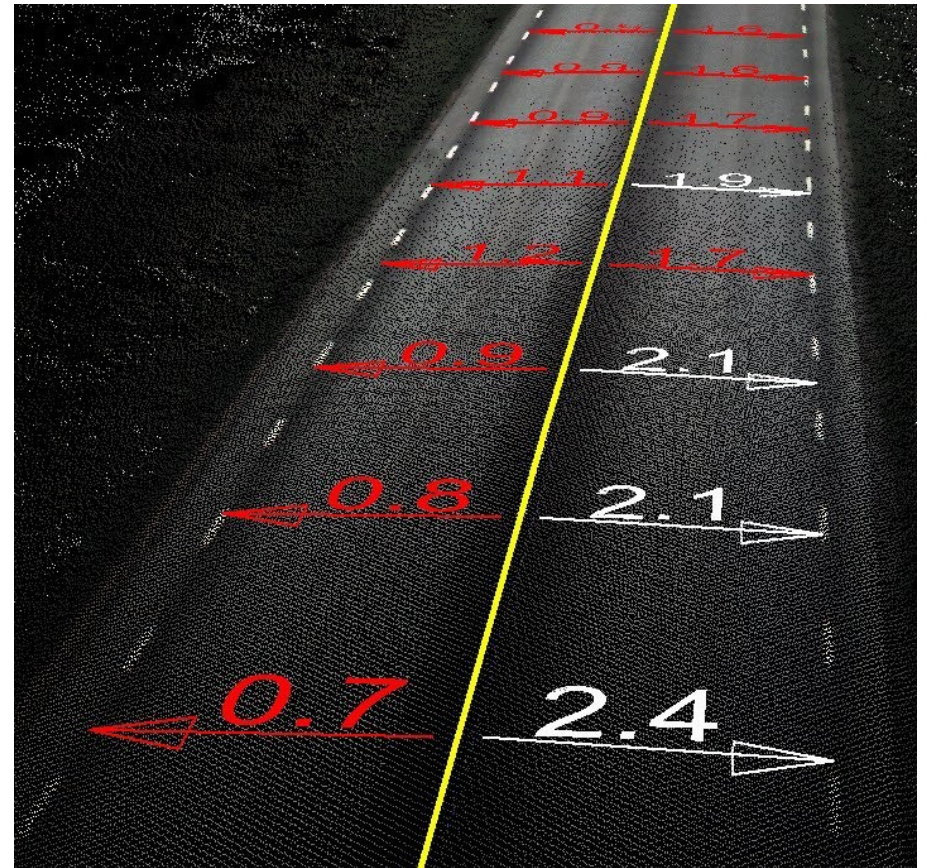


Road Component Fitting

Aleksi Soininen 6.2.2014 Levi

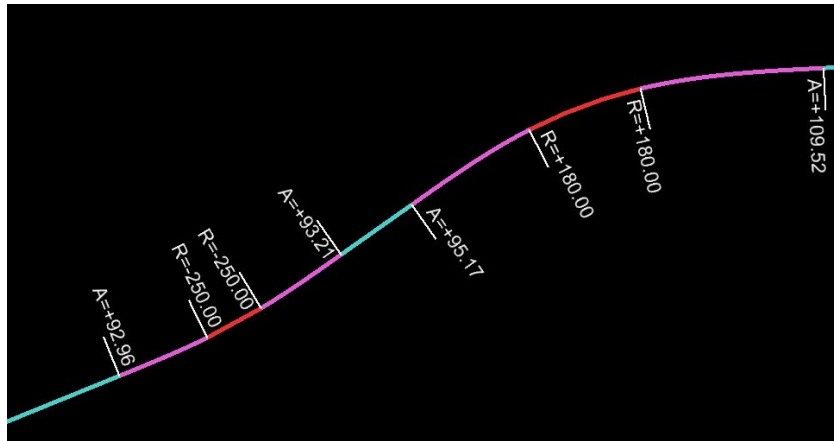
Overview

- Road design
- Component fitting:
Geometry components from
survey
- Today's training



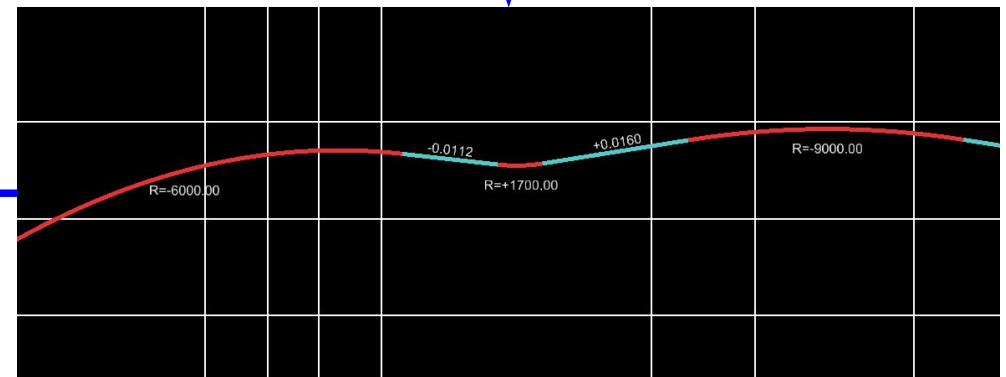
Road Design

Horizontal



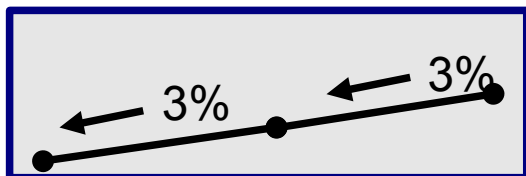
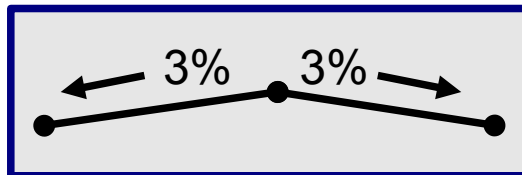
Road alignment geometry

Vertical



Center line, width, edge of pavement...

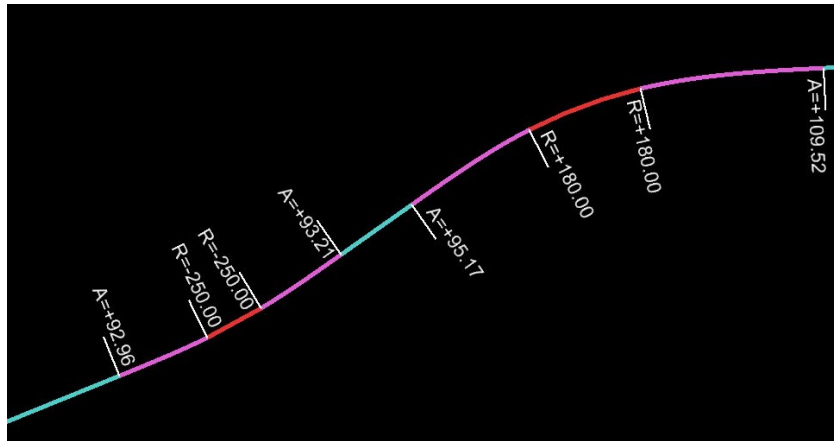
Pavement/Superelevation



- Additional alignments
- Intersections
- ...

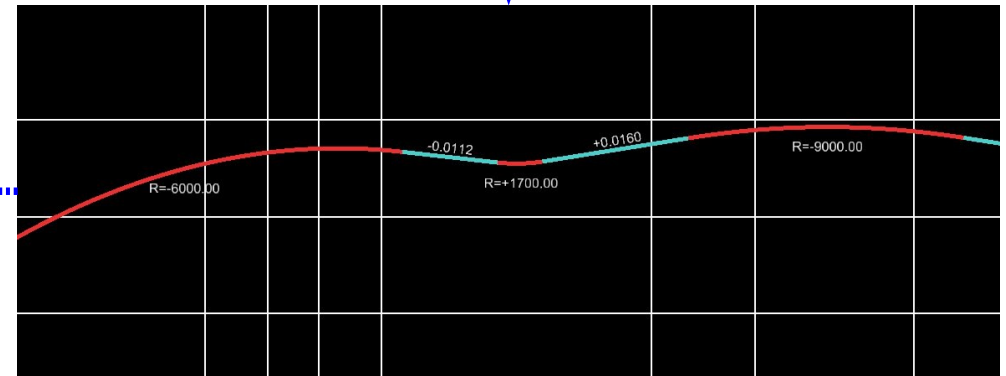
Road Design

Horizontal



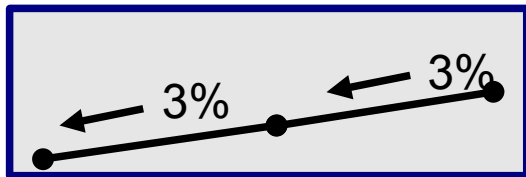
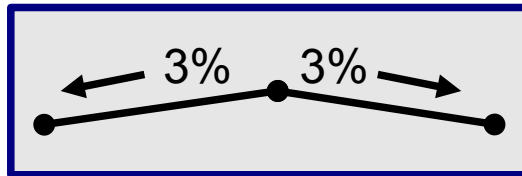
Road alignment geometry

Vertical



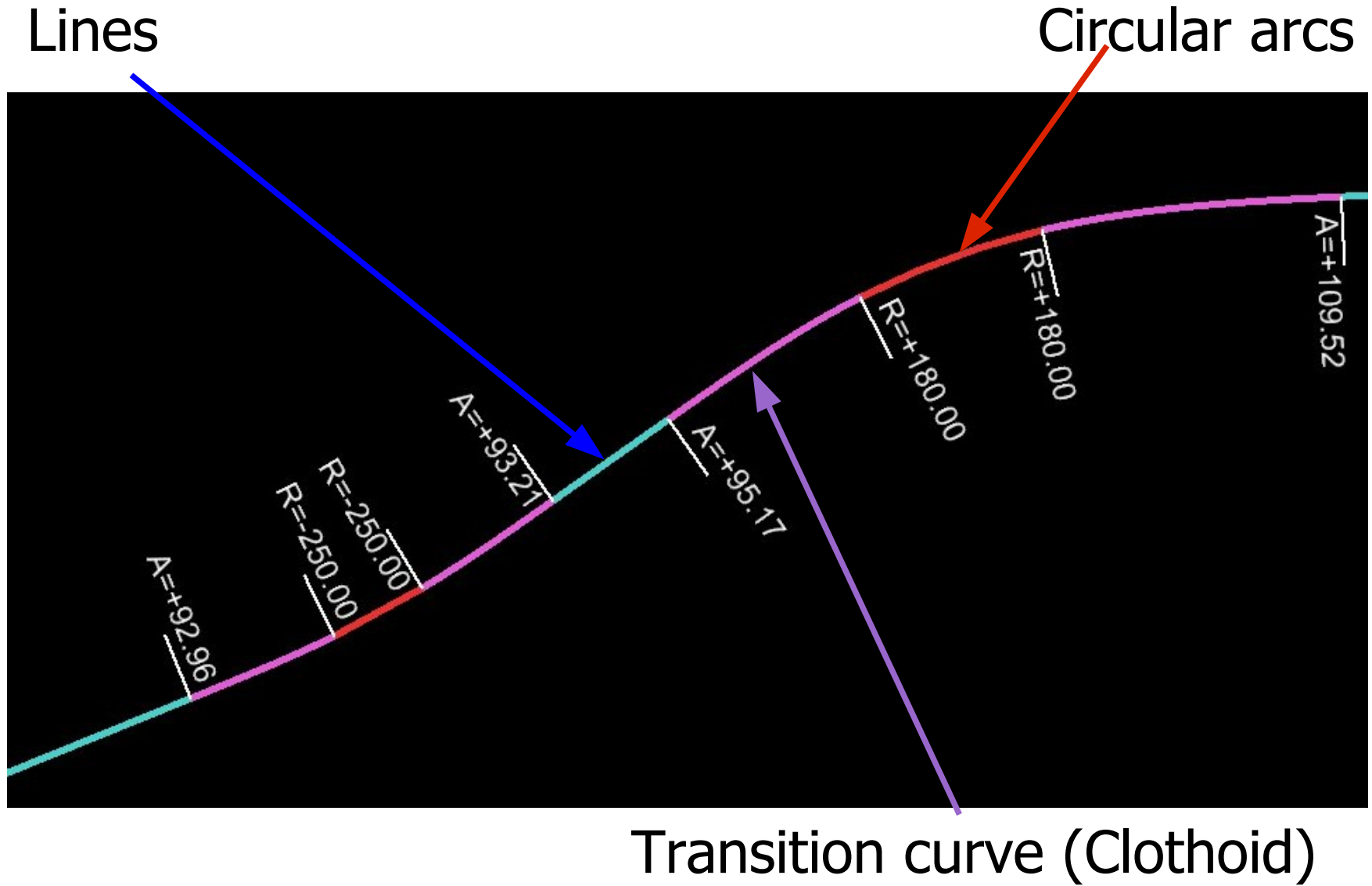
Center line, width, edge of pavement...

Pavement/Superelevation



- Additional alignments
- Intersections
- ...

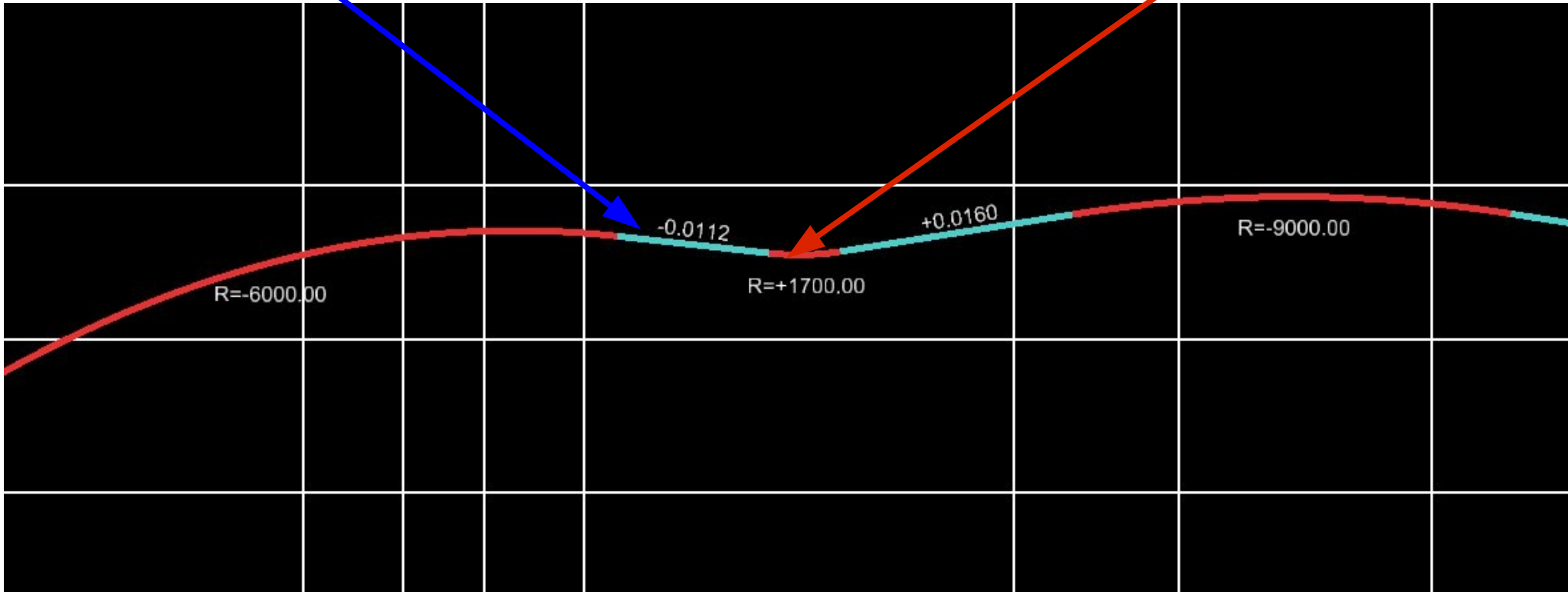
Horizontal Geometry



Vertical Geometry

Lines

Circular arcs



Geometry Components

Local or national guidelines for roads

- Minimum radius based on the speed and road type
- Sight distances

Finnish transport agency guidelines for horizontal geometry

Speed (km/h)	Min.radius (m)	Recommended (m)
...		
60	170	250-500
80	350	500-1000
100	650	1000-2000

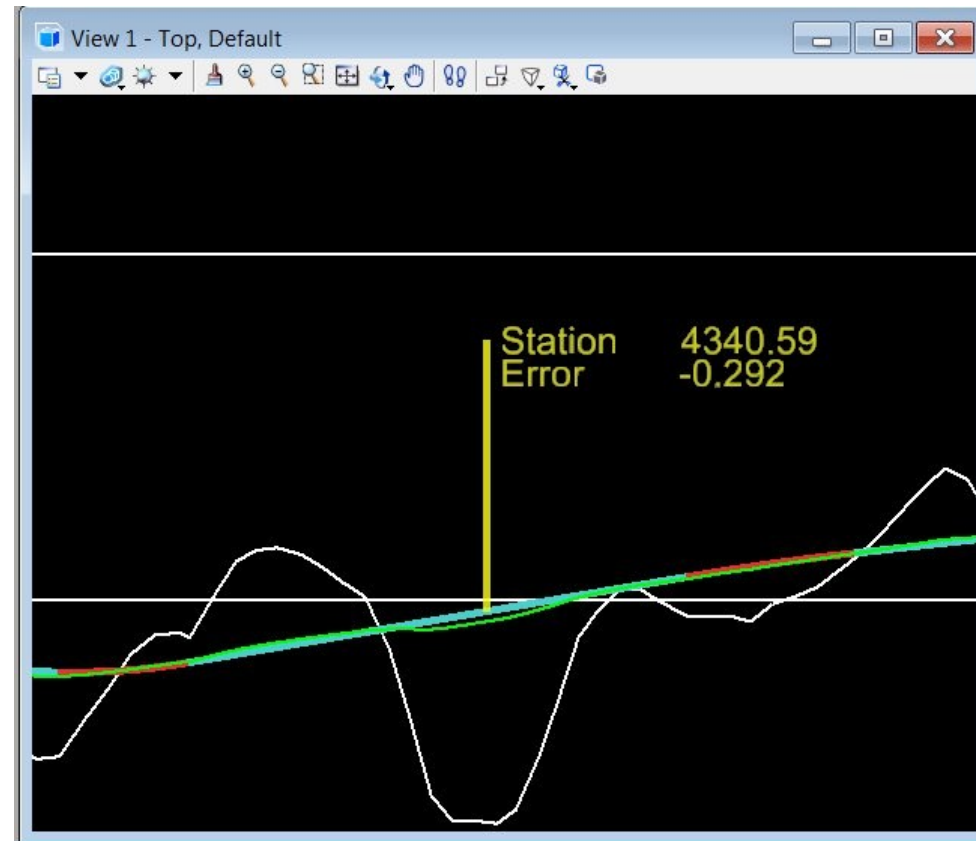
and for vertical geometry.

Speed (km/h)	Min. radius (m)		Recommended: Crest (m)
	Crest	Sag	
...			
60	1500	1500	1500-2500
80	3900	2800	3900-6500
100	9000	4300	9000-15000

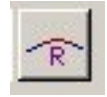
(Inspection of designs and construction)

Geometry Components from Survey

- Maintenance
 - Finding long deformations
 - New surface design
- Identifying hidden safety issues
- Connecting new designs to old

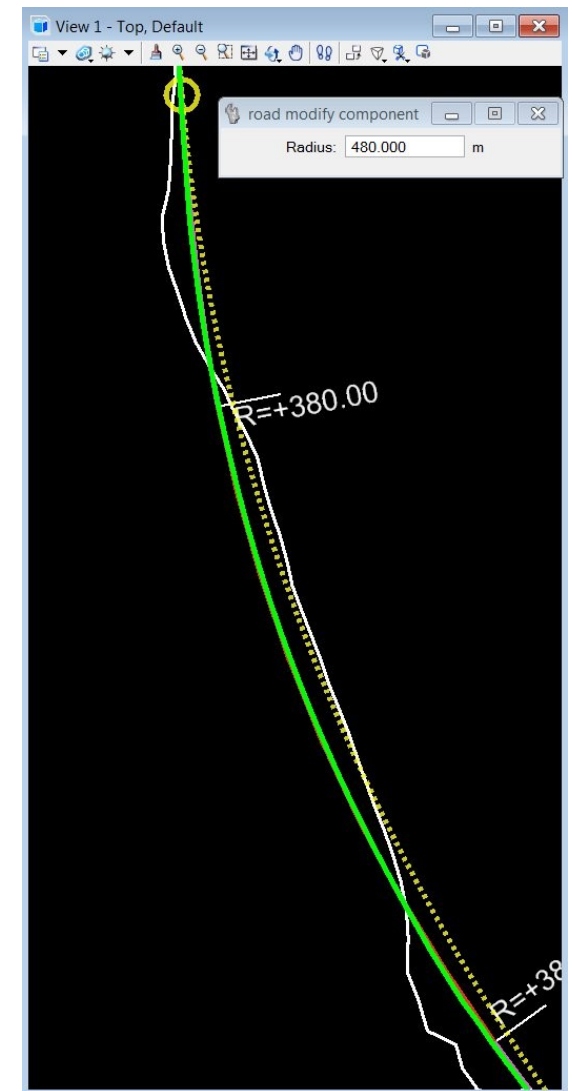


TerraScan Component Fitting



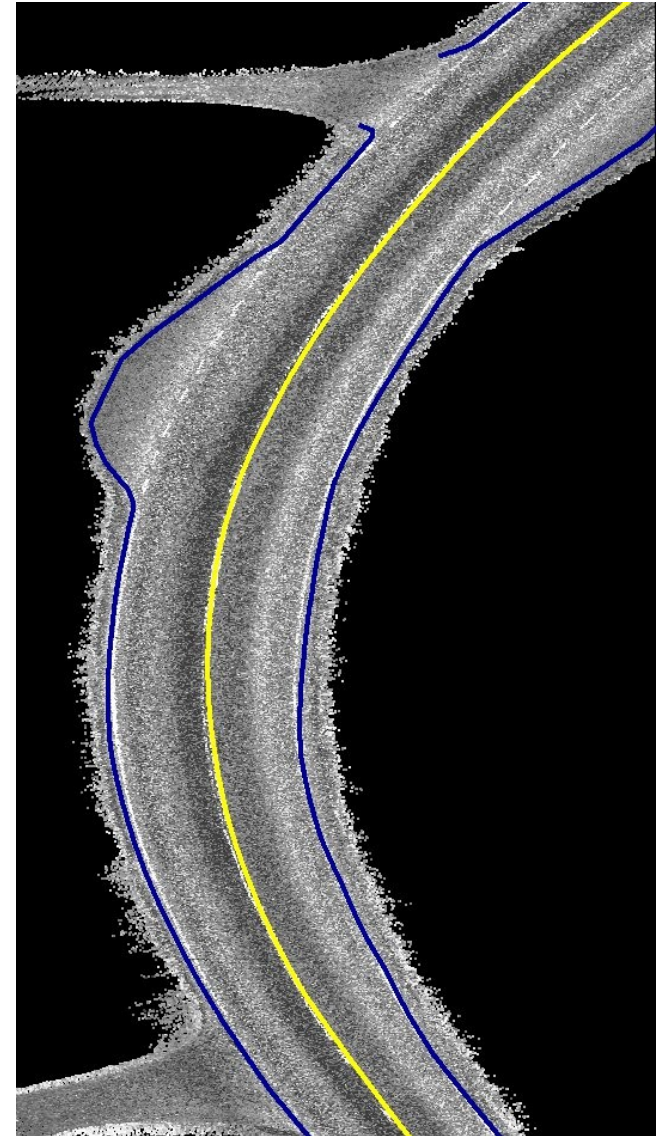
- Creation of preliminary alignments based on a survey vector
- Modification: joining, changing and refitting components
- Continuity preserved

Goal: Starting point for a design software with information on the quality.



Today's Training: Vt6

- A national road in eastern Finland
- Speed limit 80-100 km/h
- 8 km of center line and pavement edges from mobile mapping



Today's Training: Railway

Horizontal geometry from the rail center line.

- Generation of a geometry
- Addition of the transition components
- Starting vertical geometry based on the horizontal alignment

