SITECH

SITECH Norway as

Per-Ola Berntsen

Supportmanager

My background

- Mapping and surveying college, Rud 1993
- Norkart and Blom ASA 1993-2009
  - Topographical mapping
  - Ortophoto production
  - Terrainmodelling
  - Triangulation
  - LIDAR editing
  - Some terrestrial photogrammetry
- Norgeodesi 2009-2011
  - Support manager
- SITECH Norway 2011 –
  - Support manager, Application engineer Software

About SITECH

- SITECH is an international brand owned by Trimble
- SITECH has offices in more than 60 countries worldwide
- SITECH is the Trimble Heavy and Civil Construction dealer
- SITECH Norway is owned by PON Holding in Holland
- Established in 2011

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What we deliver:

- Trimble products range
  - (Tekla among others)
- Machine control GCS900
- Site control SPS and SCS900
- Business Center CAD software
- TCC two-way data (Cloud)
- Installation, training and consulting

LandXML today

- The use of LandXML for road designs is used extingtivly, but still a bit to go to be the main data exchange format. If that is the target.
- Tunnel format in LandXML is also «on its way».

Customers

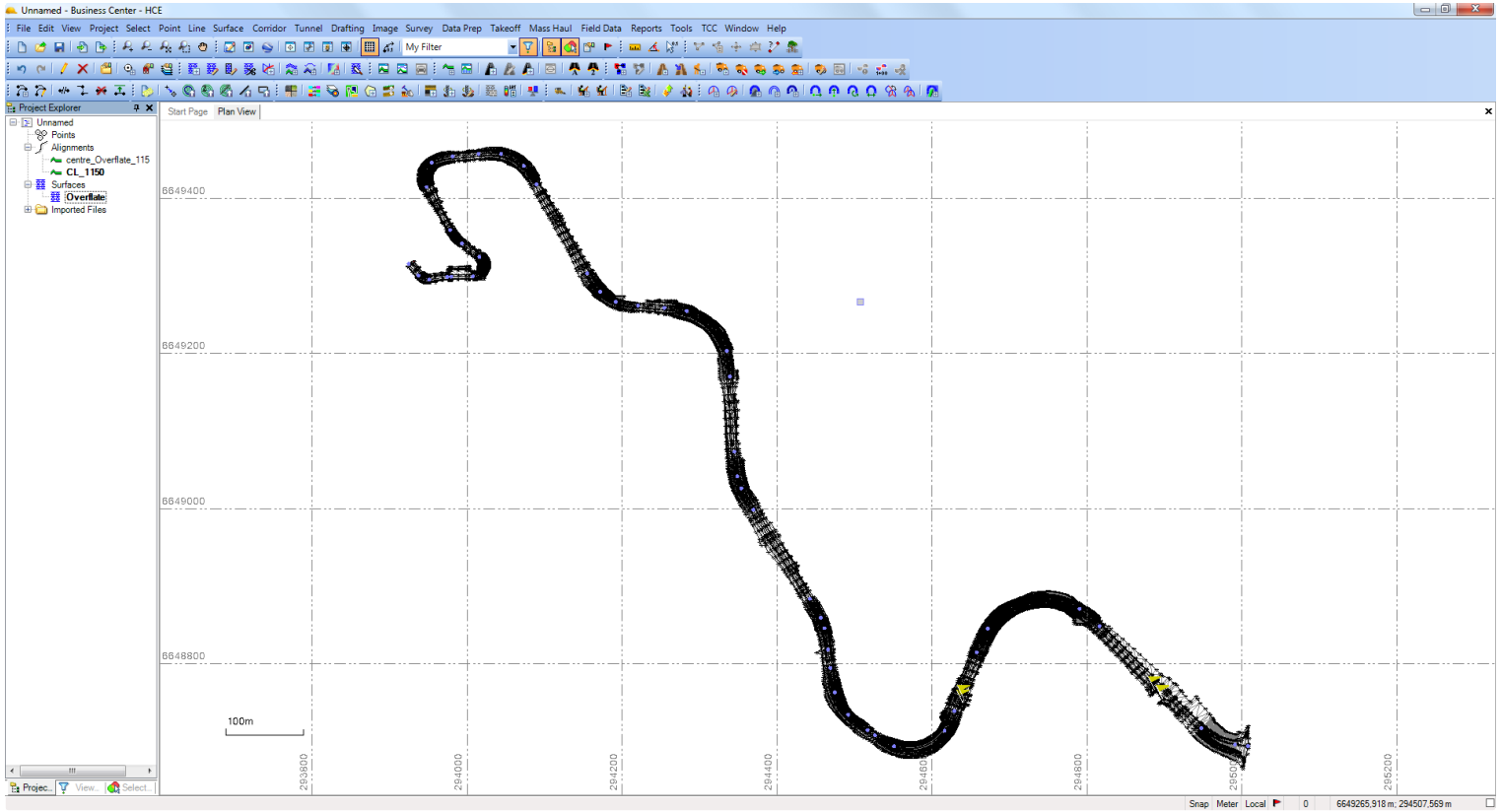
- Quite many small entrepreneurs
- Less then 10 employees
- Has little or no knowledge about geodesi.
- Used to work with machines
- Must enter the computer world now.
- They have a computer, and that is about it.
- Some know VIPS. (ViaNova, Novapoint)
- For many people, VIPS is the same as road design.

LandXML

- For Trimble software users, this is a data conversion format.
- Trimble does not have a direct import into the machine or field controller.
- Main reason for this is the variations that can be found in the LandXML
- We want to control the data before we send it out for field use.
- As far as I know, the other manufactorers do the same, more or less.
- Some claim to use LandXML directly in the macine, but it is a special version of it.

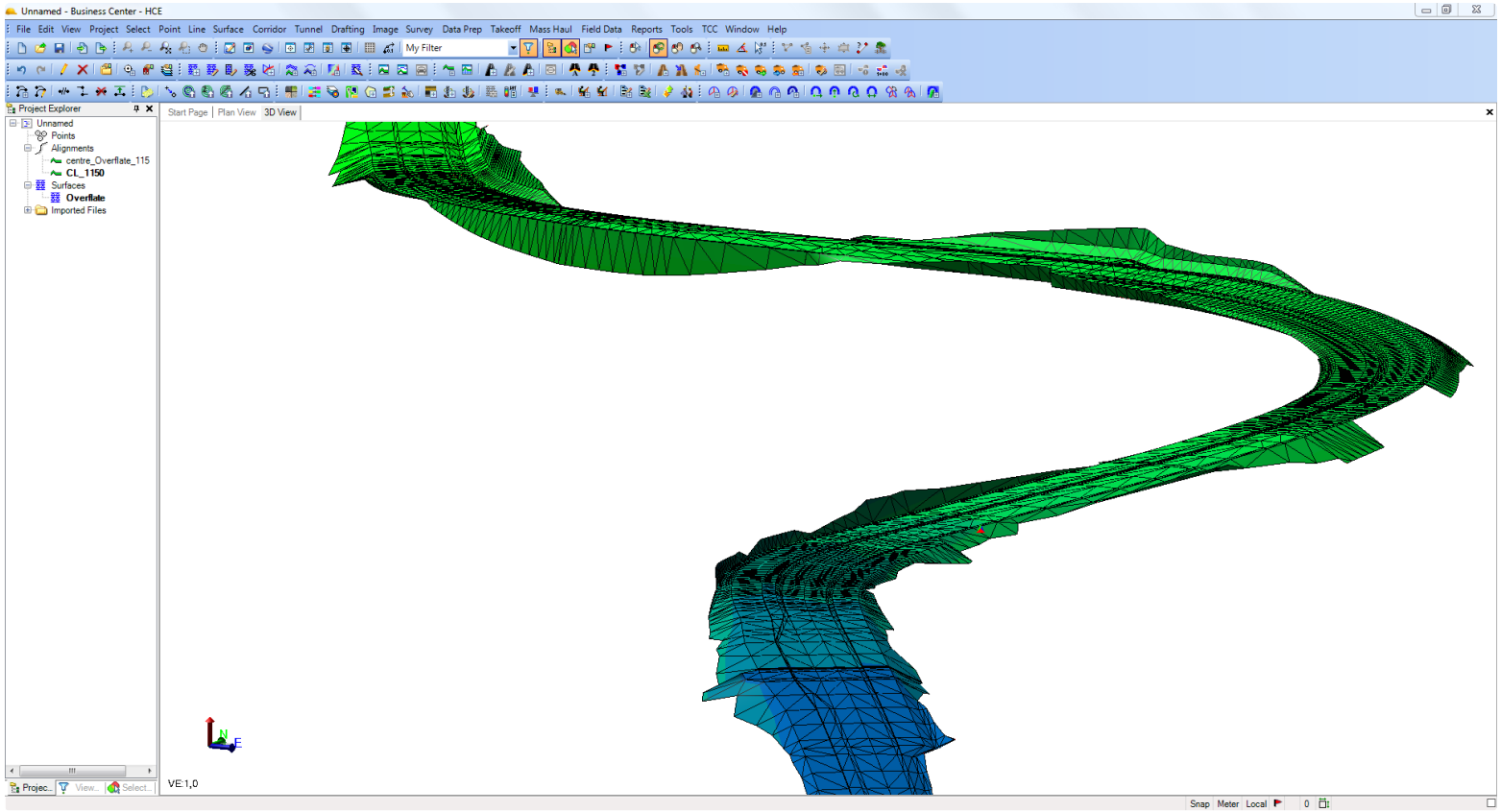
How we manage

- **We import the LandXML to Business Center**



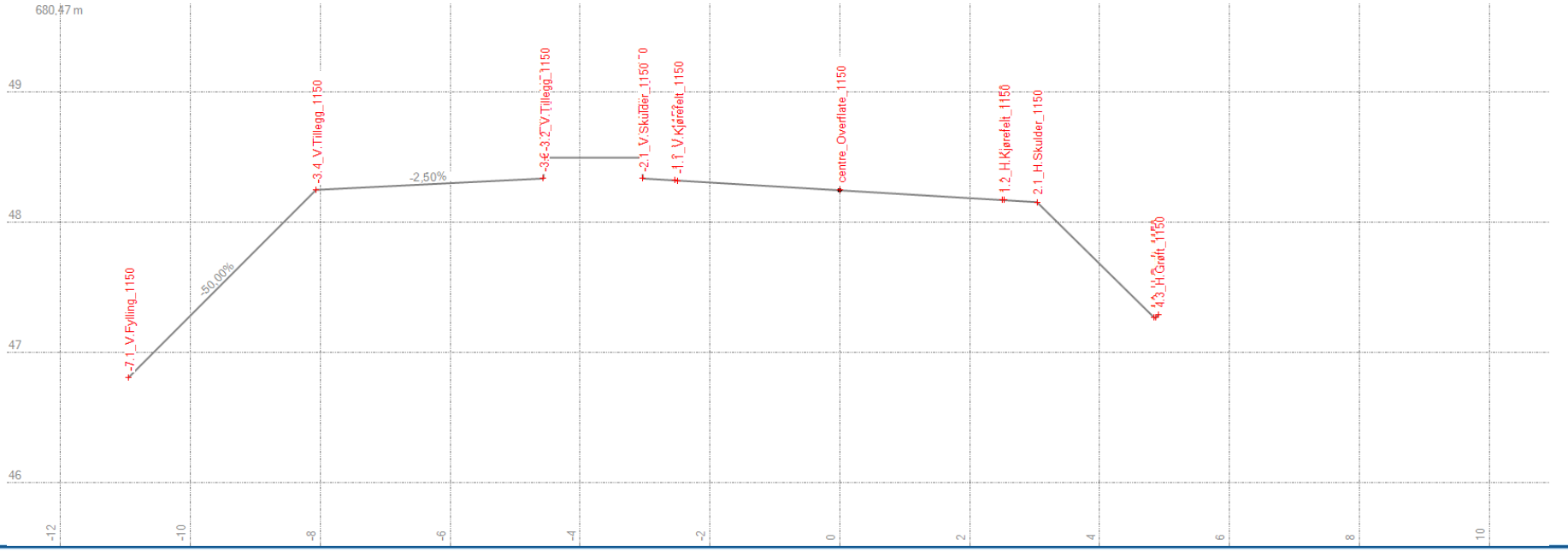
We check the data

- We set the coordinate system
- And check for errors.



We can:

- Edit the Alignment
- Edit the surface
- Create or edit cross sections
- Offset the surface



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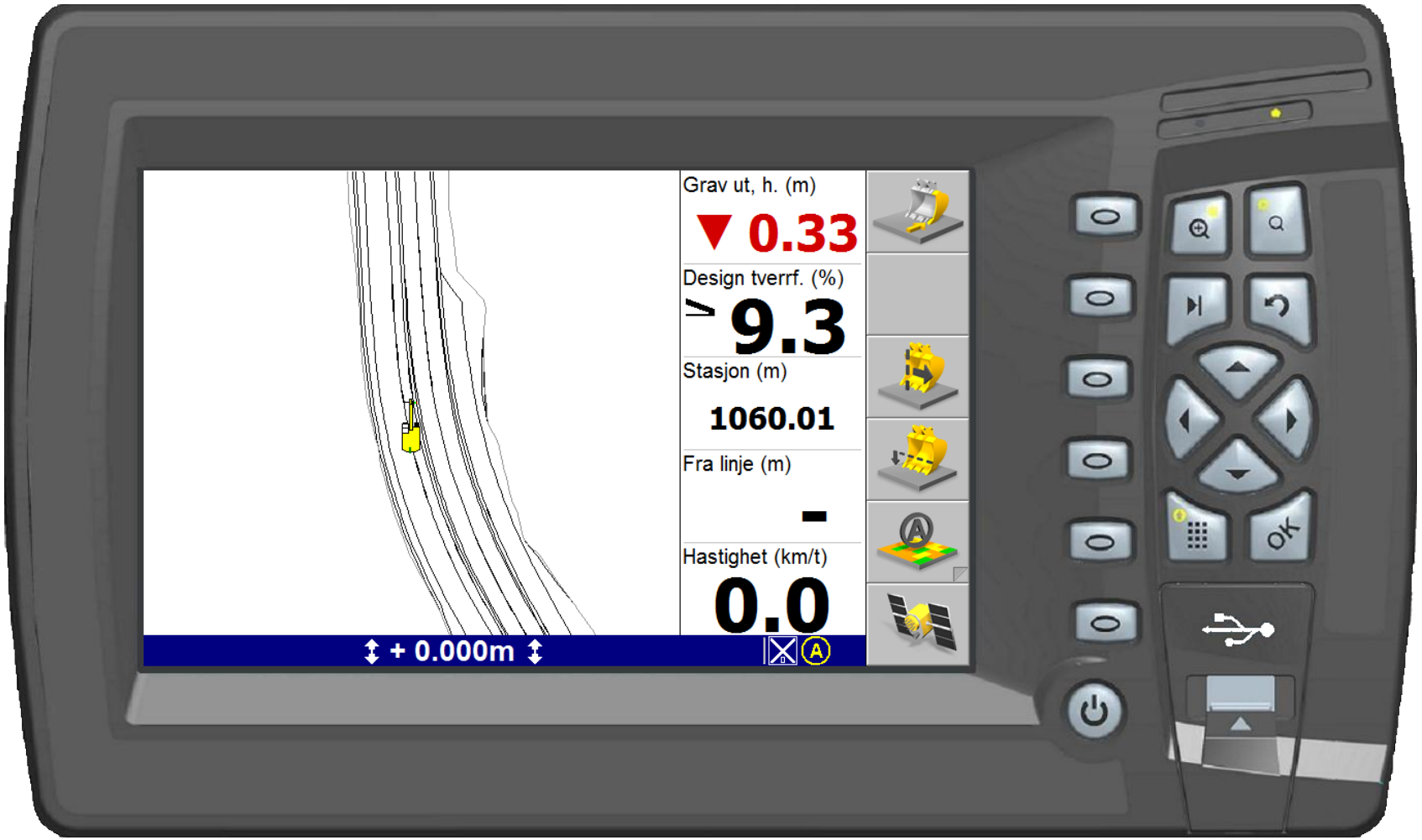
Then we export to field

- To machine or to field controller
- In our own format
- And the machine gets guidance
- Can stakeout road designs
- Check as-built
- Make reports
- «Dead end?» Will LandXML be more dynamic?

In different views



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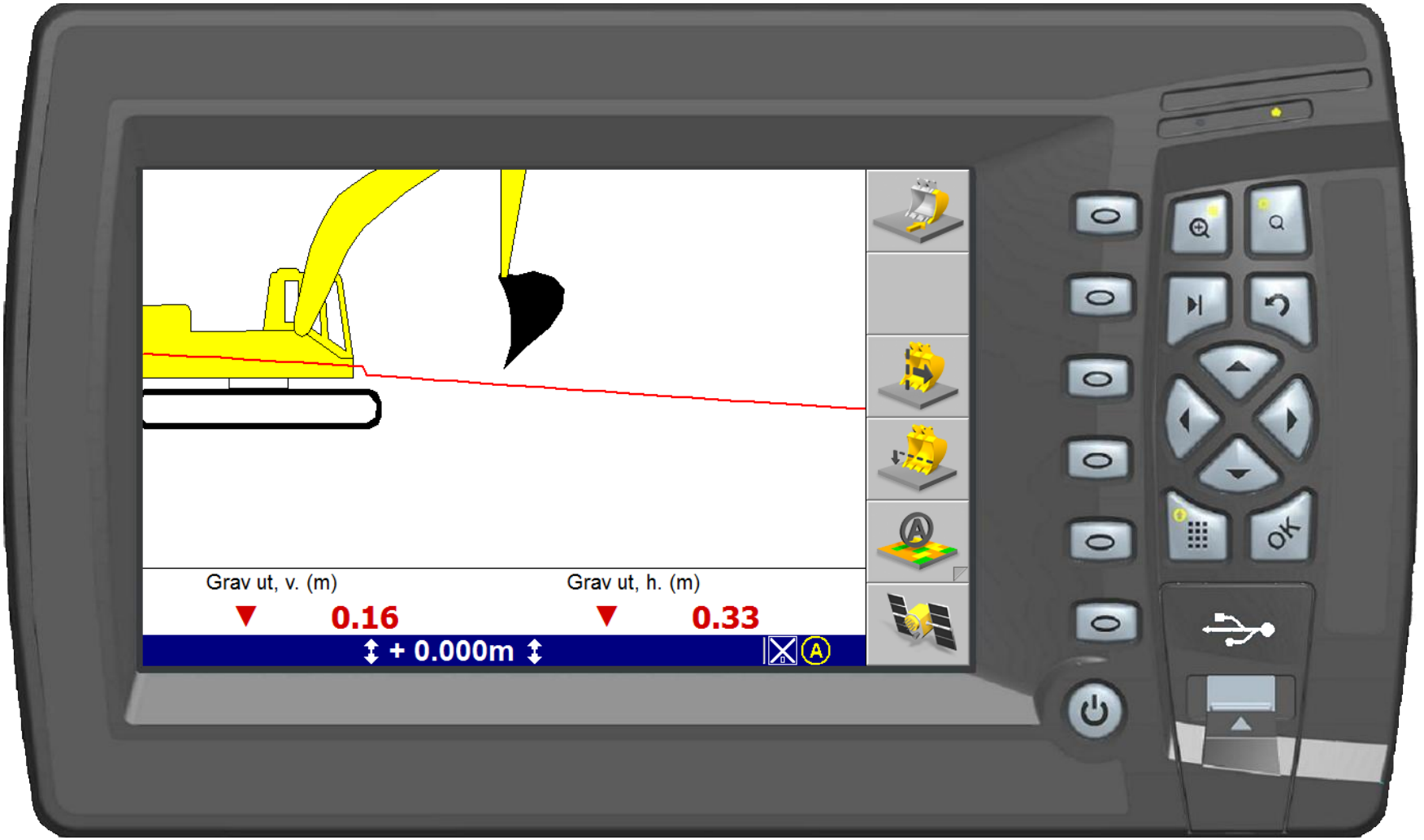
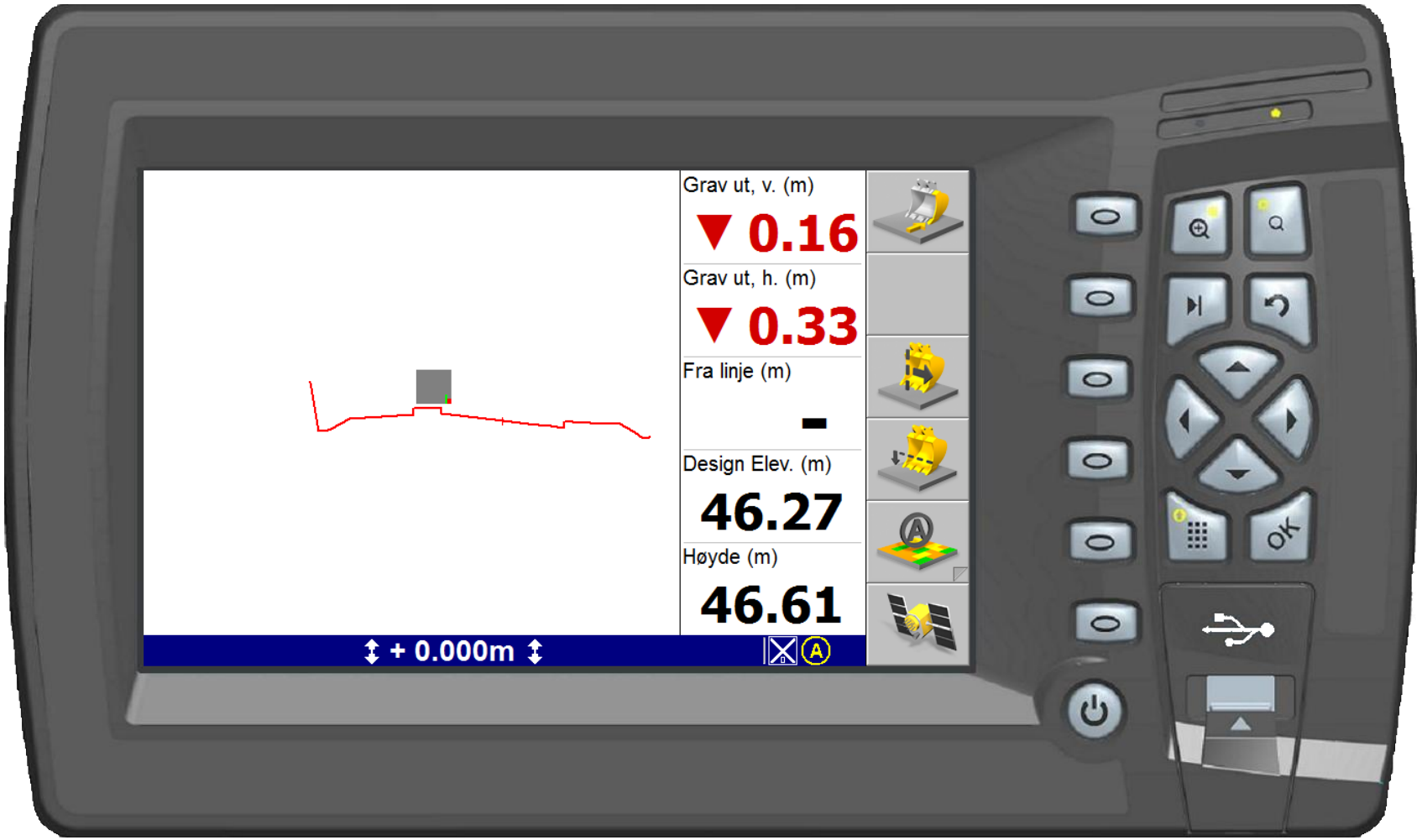
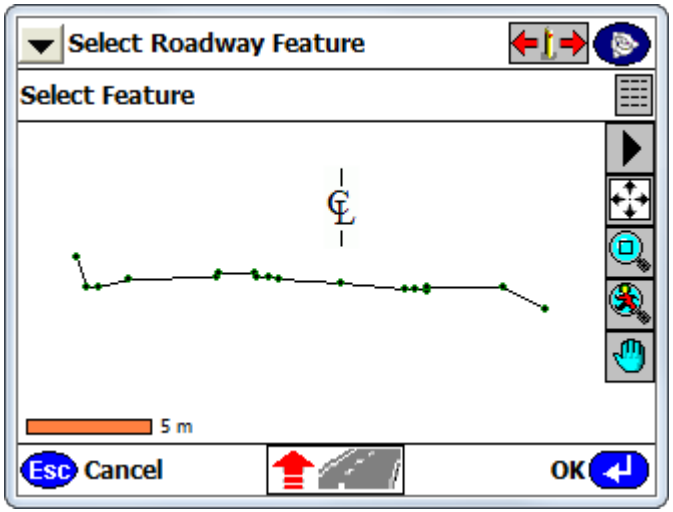
GCS900

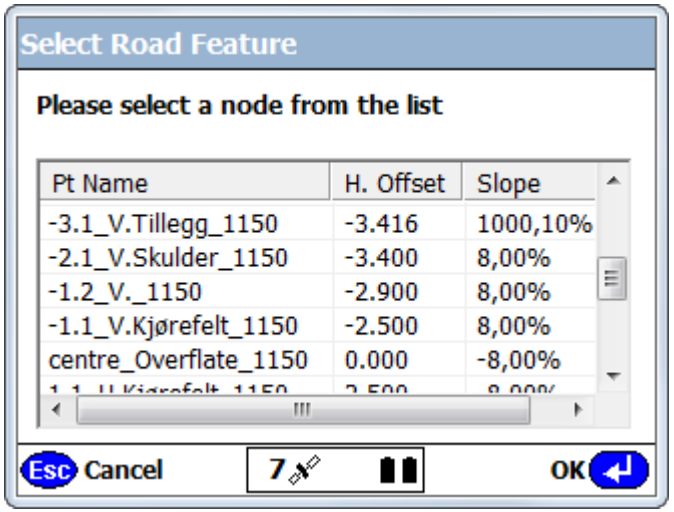


GCS900

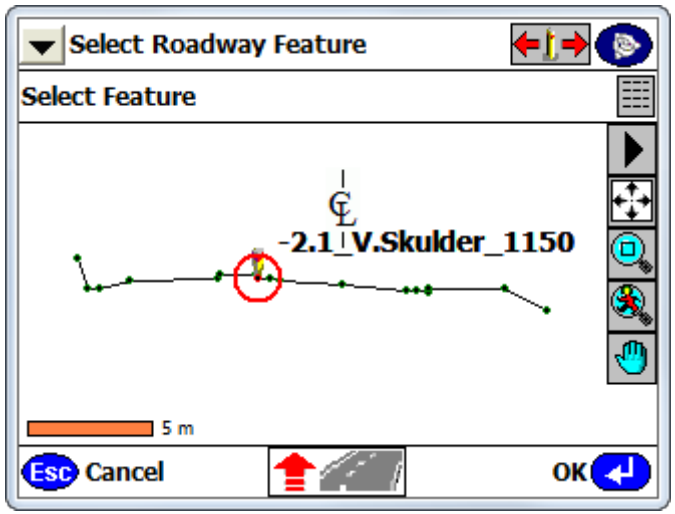

Grav ut, v. (m)
▼ 0.16
Grav ut, h. (m)
▼ 0.33
Fra linje (m)
-
Design Elev. (m)
46.27
Høyde (m)
46.61
+ 0.000m
OK

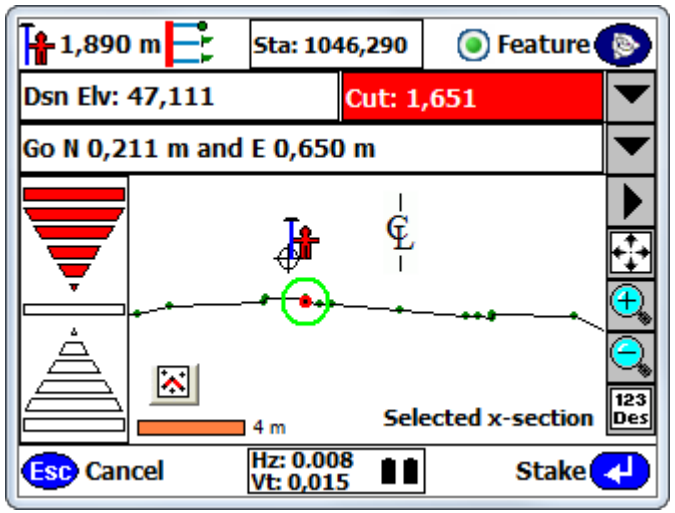
Or in the Controller





SCS900


Select Roadway Feature
Select Feature
-2.1_V.Skulder_1150
5 m
Esc Cancel
OK


1,890 m
Sta: 1046,290
Feature
Dsn Elv: 47,111
Cut: 1,651
Go N 0,211 m and E 0,650 m
4 m
Selected x-section
123 Des
Esc Cancel
Hz: 0.008
Vt: 0,015
Stake

Benefits

- Relatively small files
- Almost «standard»
- Can be exchanged to other systems
- Gives us what we need
- Most software systems can handle it

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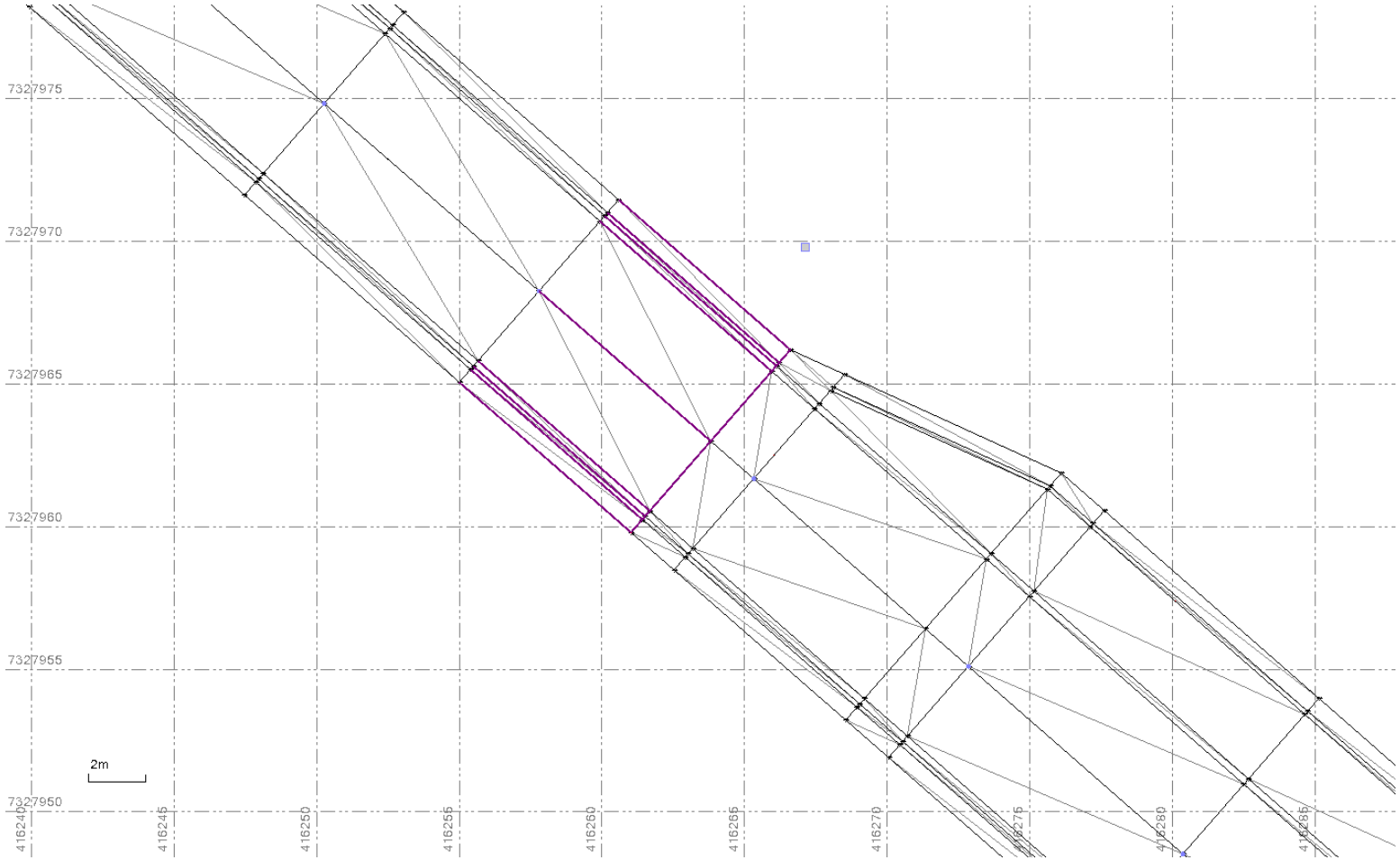
Out of LandXML

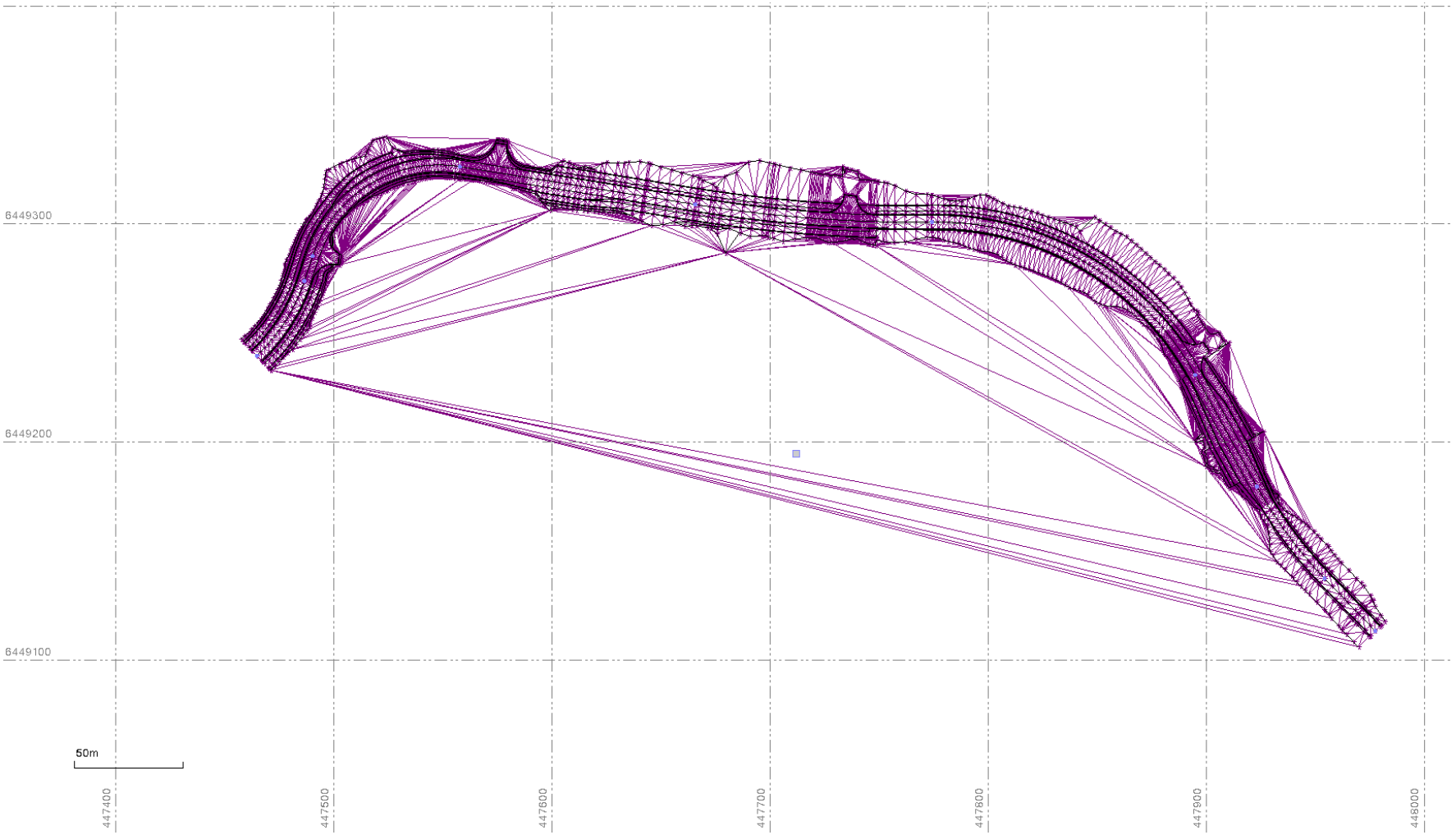
- We get surface
- We get alignments
- We get 3D lines
- We can work with high accuracy
- Typically <3-4 cm with GNSS
- Get it right first time
- Save time, resourses and money

Issues

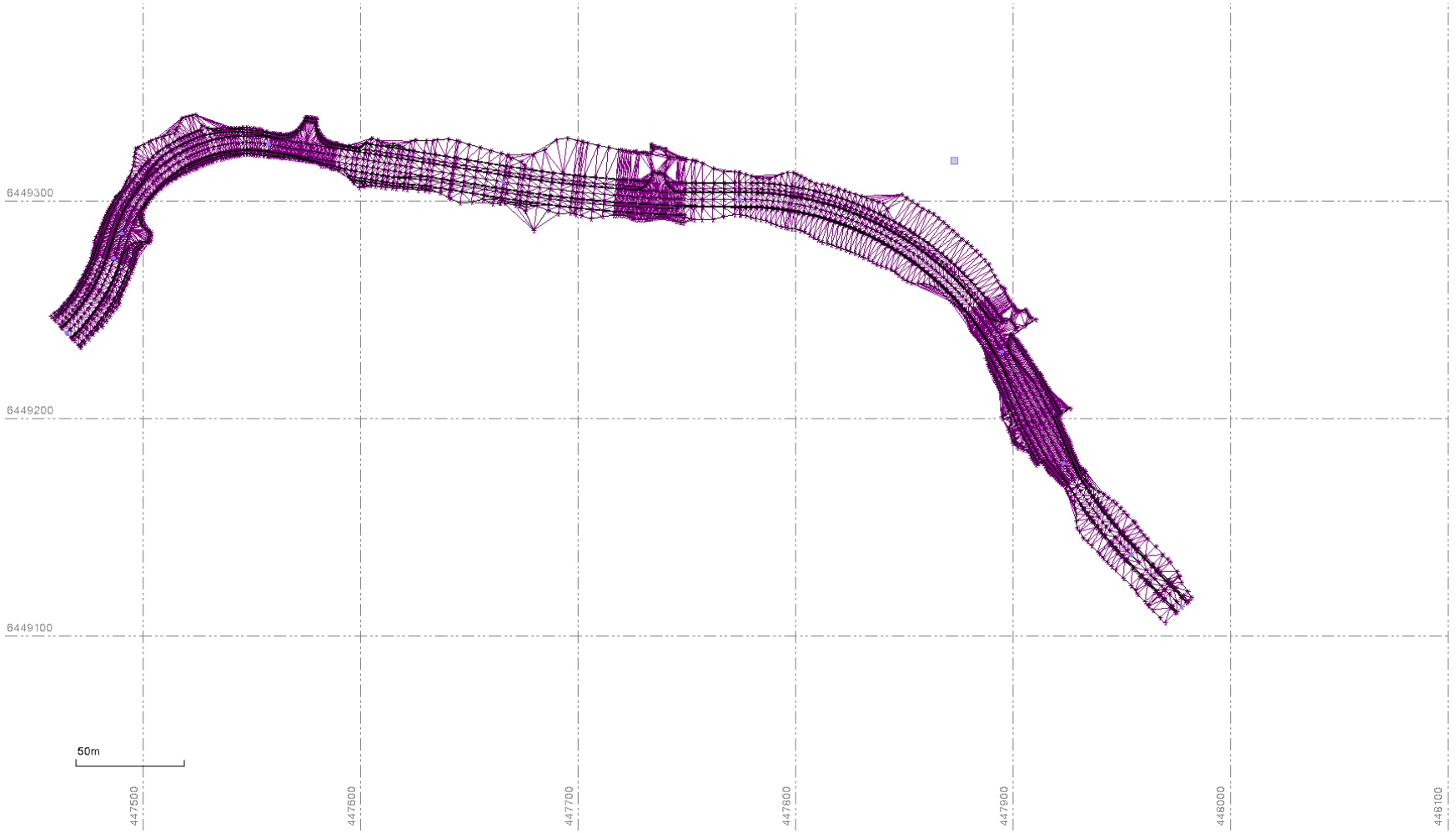
- We see some issues in the difference between 3D lines and Cross Sections from various software
- Cross Sections seems to make «blocks» in the road.
- Then we loose guidance when crossing over to the next «block»
- Surface is generated when imported, must be cleaned up and made Alignment Based


7327975
7327970
7327965
7327960
7327955
7327950
2m
416240
416245
416250
416255
416260
416265
416270
416275
416280
416285

Surface cleanup



Cleaned up


6449300
6449200
6449100
50m
447500
447600
447700
447800
447900
448000
448100

More issues

- We also see that some consultants does not deliver LandXML as standard.
- They deliver VIPS, PDF or some ASCII formats.
- Then the road must either be generated from the VIPS.
- Or it must be made from other formats, and be built in proper software.

Future

- We advice our customers to use LandXML
- But still it needs to be checked prior to production.
- Can we in the future rely on the format?
- Will variuos software producers make one version of the LandXML format?
- What can be delivered as-built in LandXML?

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Questions?