



Ekolodning – Single-beam eller Multi-beam – Vad ska jag välja?

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Kapten AFRY

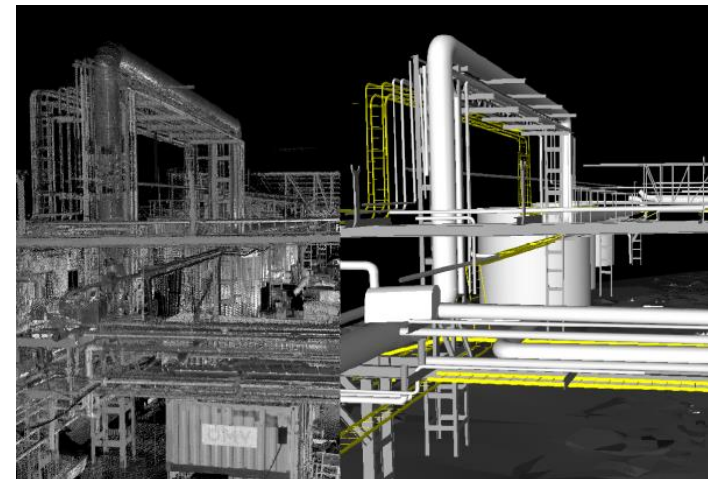
Who we are

- 40-50 people with different backgrounds; Technical Surveyors with University degrees, Surveying Engineers, GIS and CAD engineers.
- Broad and deep expertise to be able to cover everything in Geodesy and Surveying.
- Different specialties and partners guarantee good quality in turnkey solutions and more advanced projects.
- Access to a wide range of equipment and software, as well as competences to find the right approach and delivery for each project.
- A number of carefully selected partners

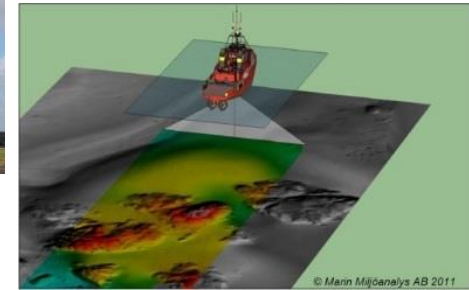
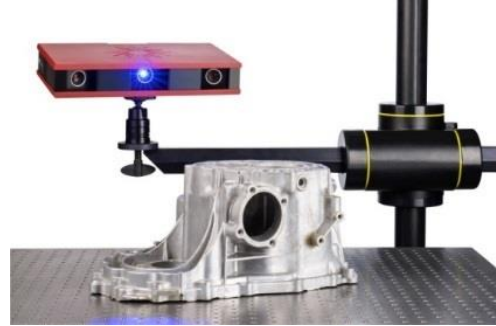


Things we do

- **Geodetic Infrastructure** - Establish and verify networks in plane & elevation
- **Responsible for Survey** - Handling Survey needs for Infrastructure projects (Road, Railway, etc..)
- **As Built survey** - For various kinds of projects and structures
- **Simulations** - Using VR/AR/MR for visualizations, 4D -models
- **Point clouds** - Creating point clouds and modelling from different sources
- **Monitoring**
- **Collision control** Static or dynamic for various projects
- **Reverse engineering**
- **Conventional survey**



Hardware



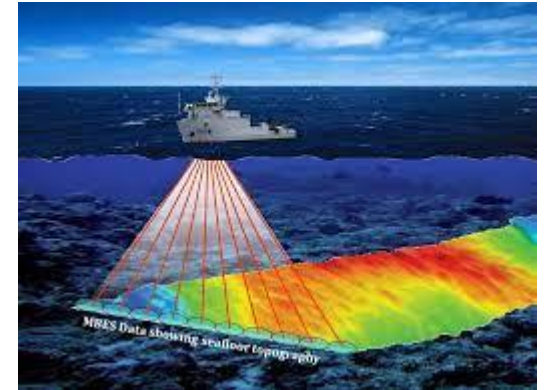
Hur vi gör

- Mycket planering
- Isättningsplats
- Körschema
- Logistik
- Kundens behov (Single beam /Multi beam jmf TS/skanner)
- Databearbetning

Single beam Echo Sounder



Multibeam Echo Sounder



Svårigheter

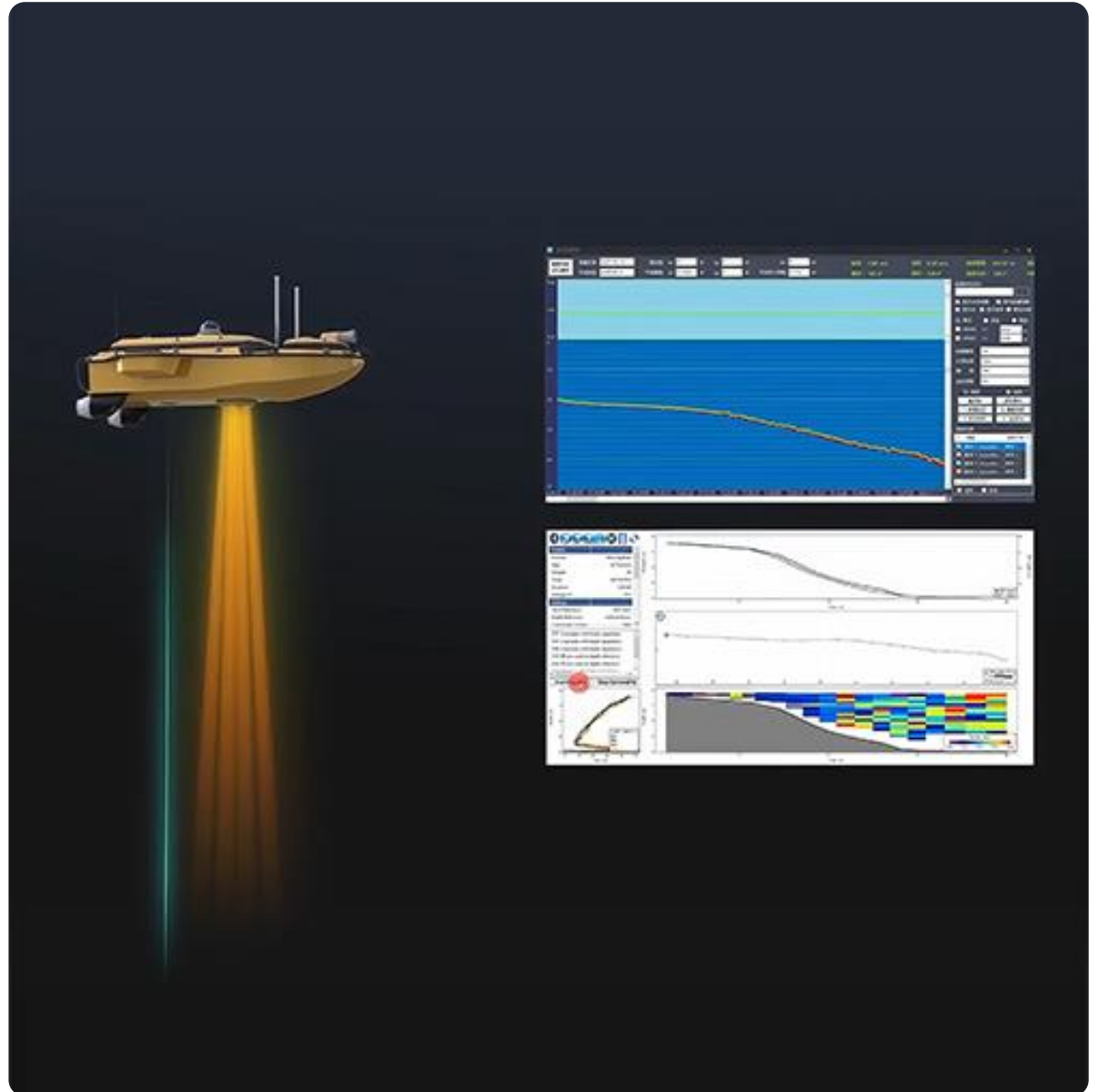
- Kommunikation (kunden, data, internet, mobil)
- Planering (känner inte alla förutsättningar)
- Hinder (i vattnet, tillgänglighet)
- Möta kundens kravbild
- Farliga moment



Single beam & Multi beam

Plattform

CHCNAV Apache 4



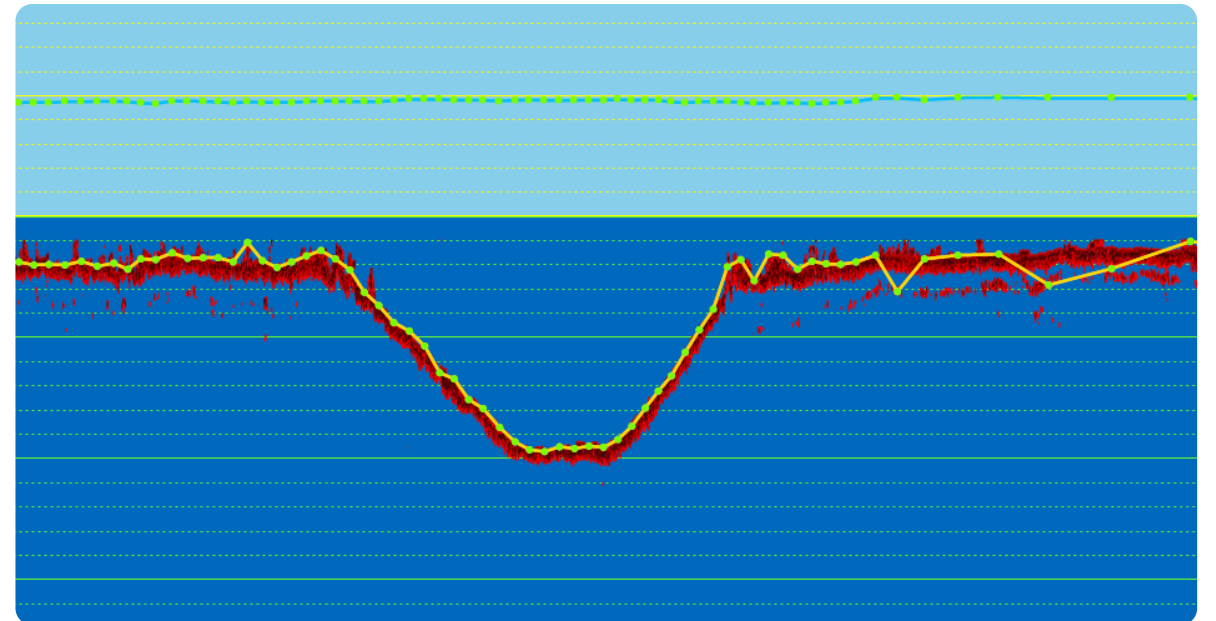
Single beam - teknik och användningsområden

Hur fungerar single beam

- En stråle rakt ned - punktvis djupmätning
- Lämpligt för insjöar, dammar, vattendrag o dyl
- Oftast tillräckligt för att kunna skapa beräkningsmodell av botten

Fördelar

- Enkel setup
- Bra precision vid raka profiler
- Mindre tid i fält och bearbetning av data



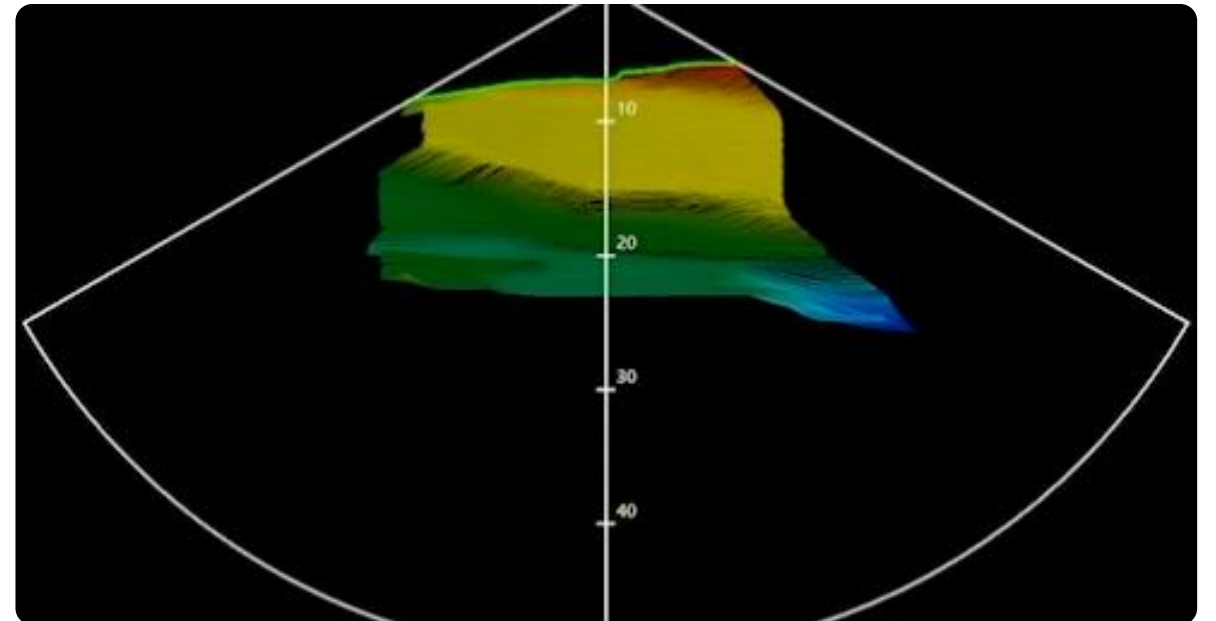
Multi beam – teknik och användningsområden

Hur fungerar multi beam

- Flera strålar i en solfjäderform
- Ger full täckning av botten om det utförs med överlapp
- Liknar skanning

Fördelar

- Hög detaljupplösning
- Visar objekt som kan finnas på botten, el-kablar, fundament eller andra strukturer.



Single beam - teknik och användningsområden

Täckning

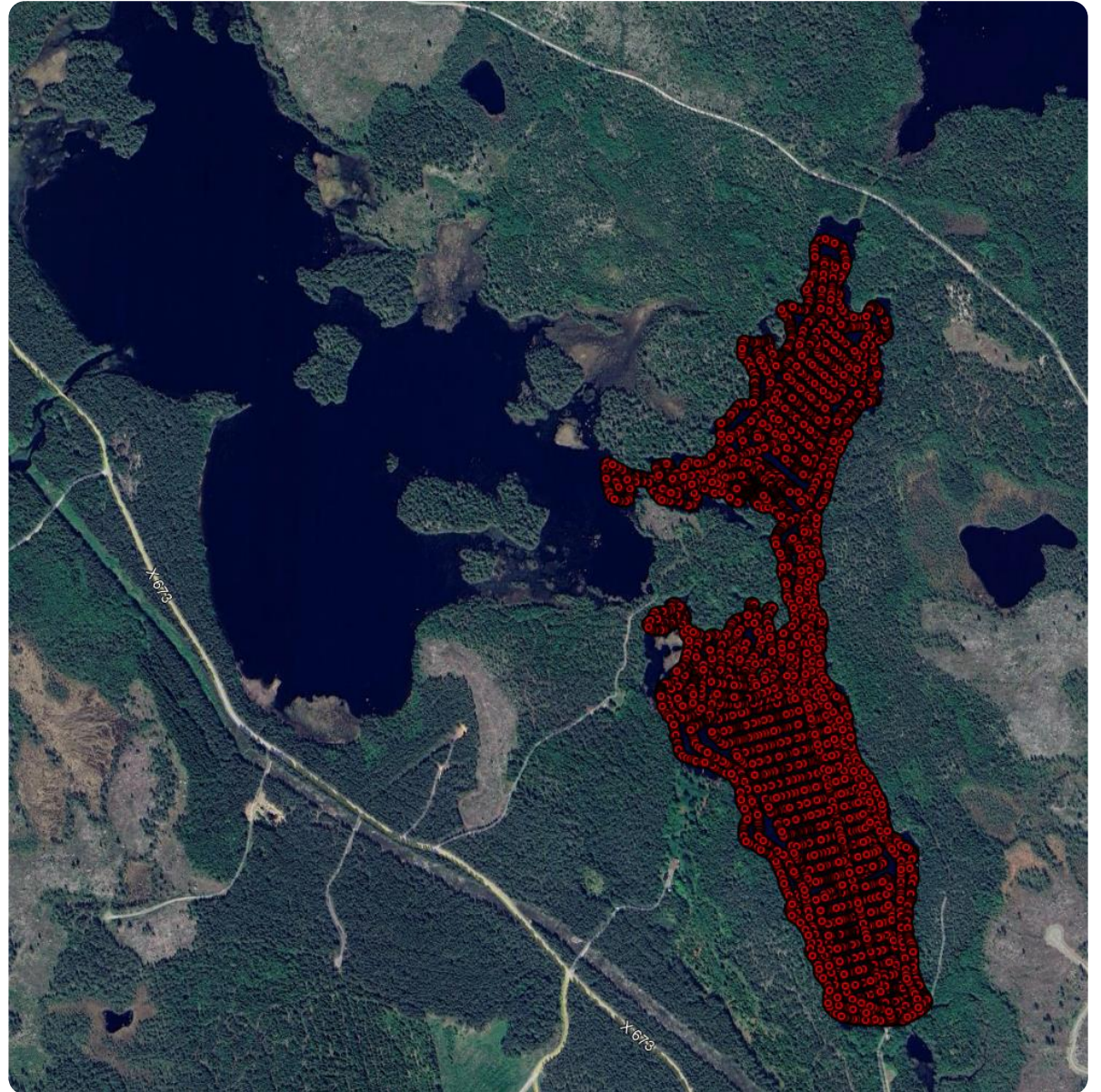
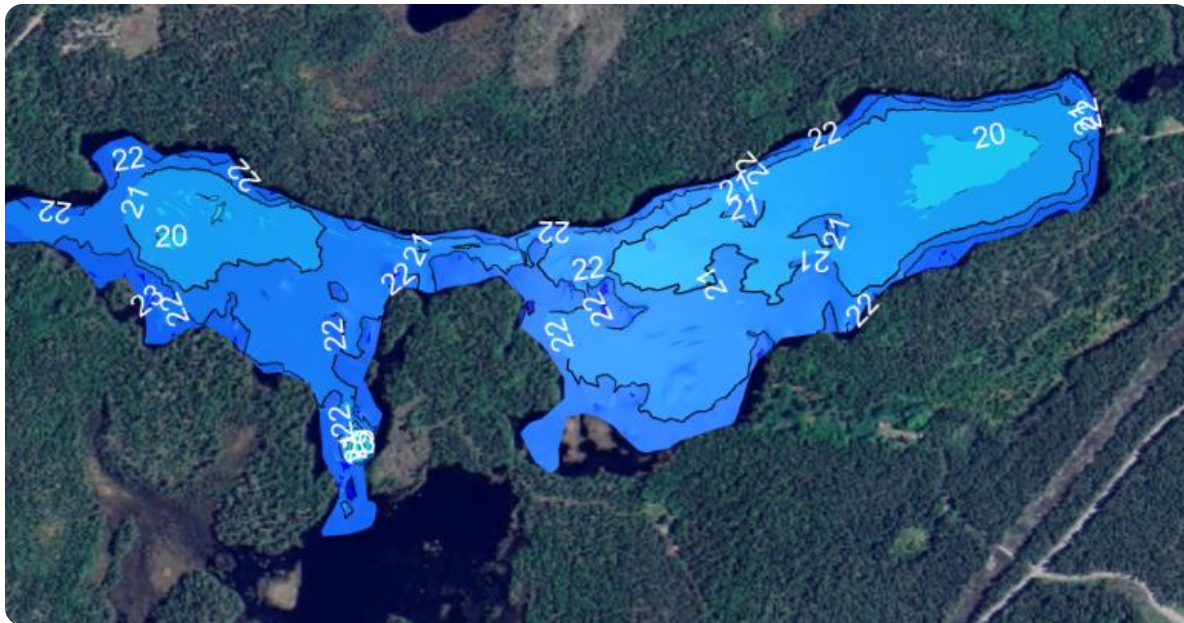
Utfört med single beam

Ca 21 000 punkter

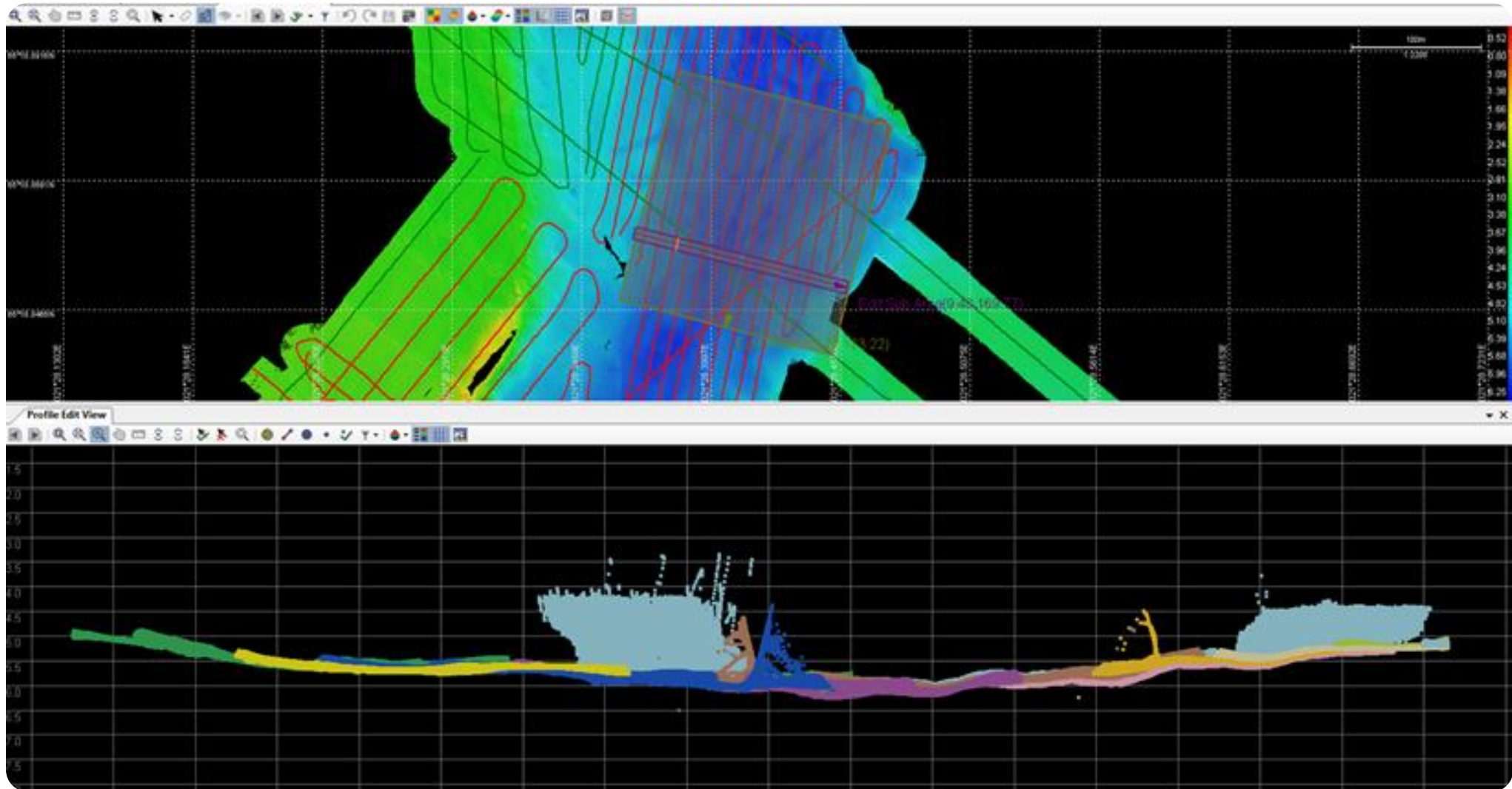
Ca 33ha

Modell/Djupkarta

Heltäckande modell och djupkarta



Multi beam



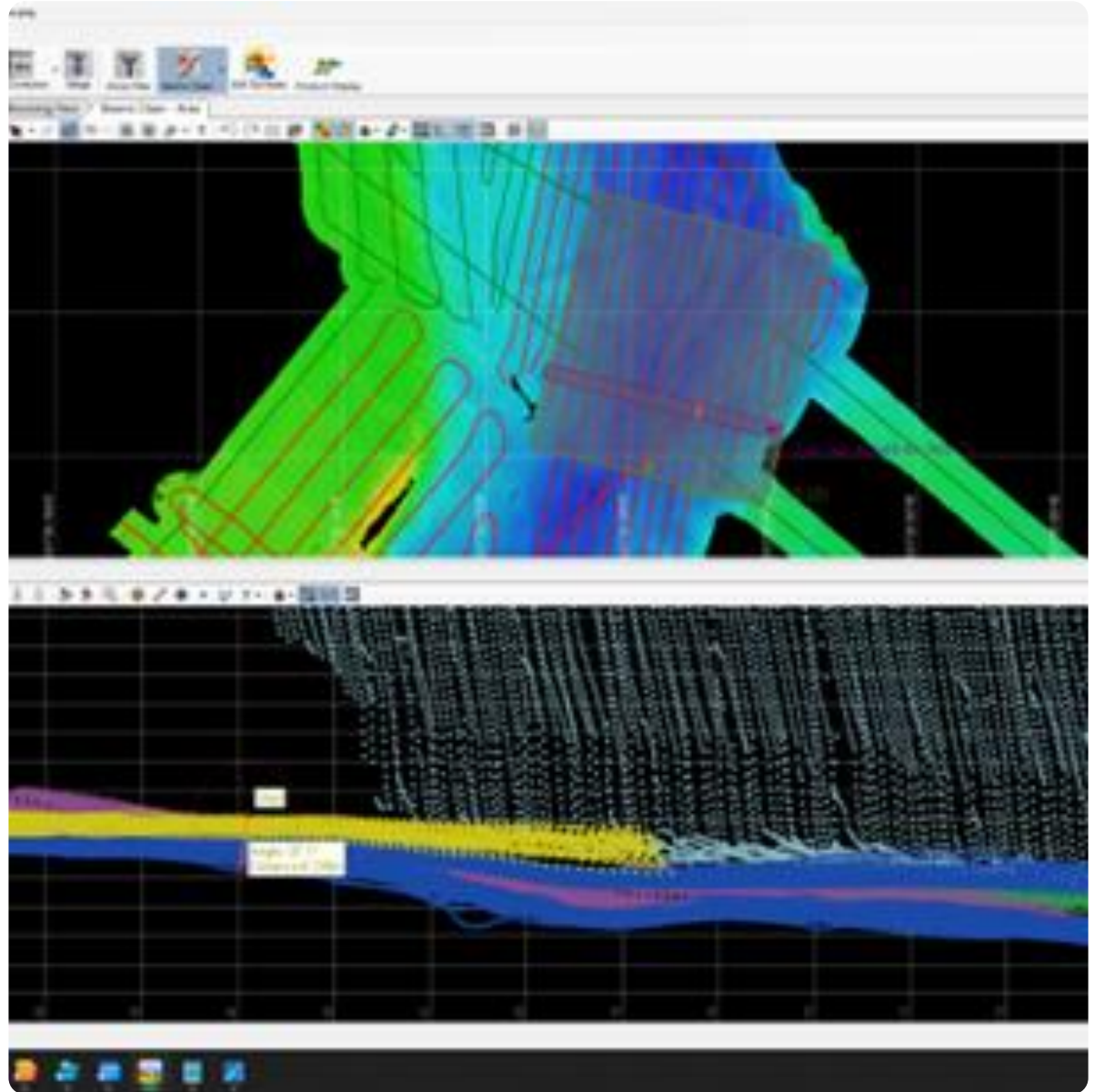
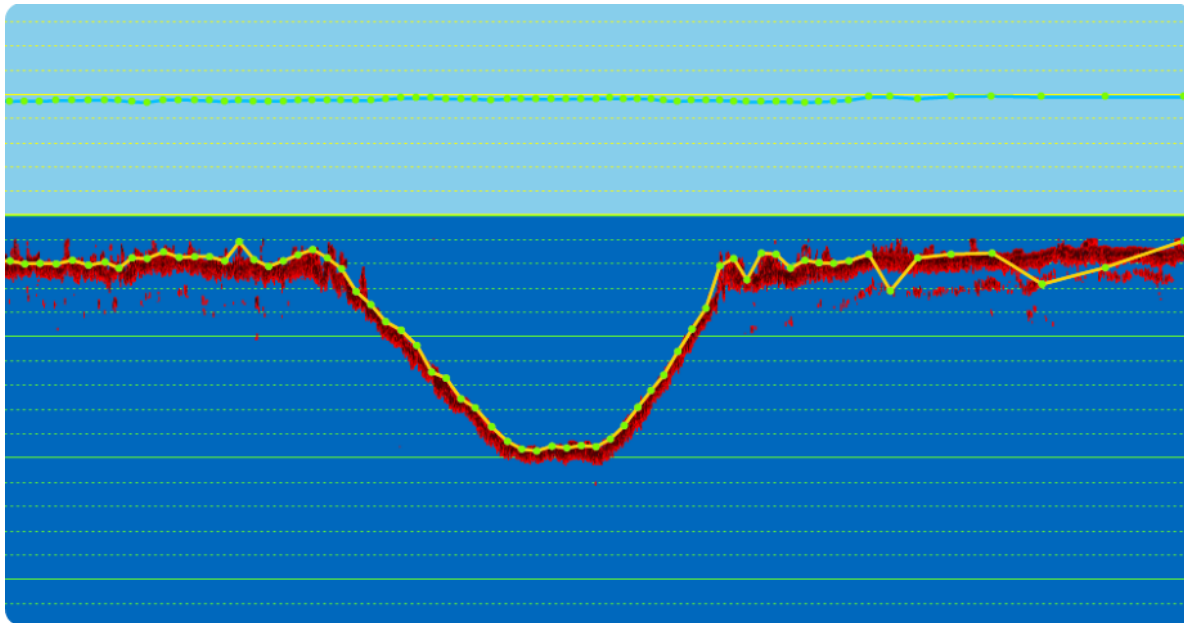
Single beam & Multi beam

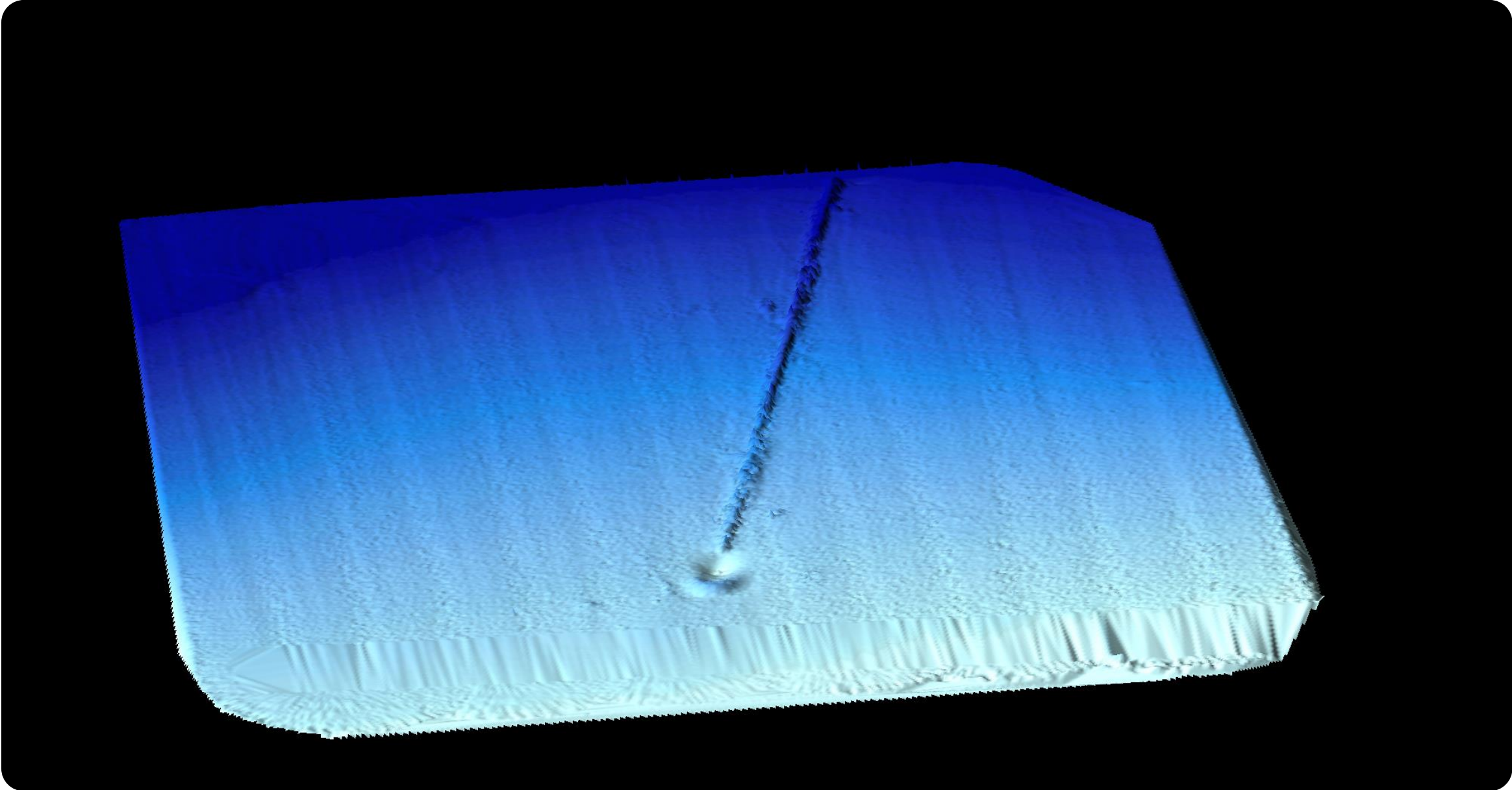
Datamängder

Skillnad mellan single & multi beam

Bearbetning

Stor skillnad i hantering och arbete med data

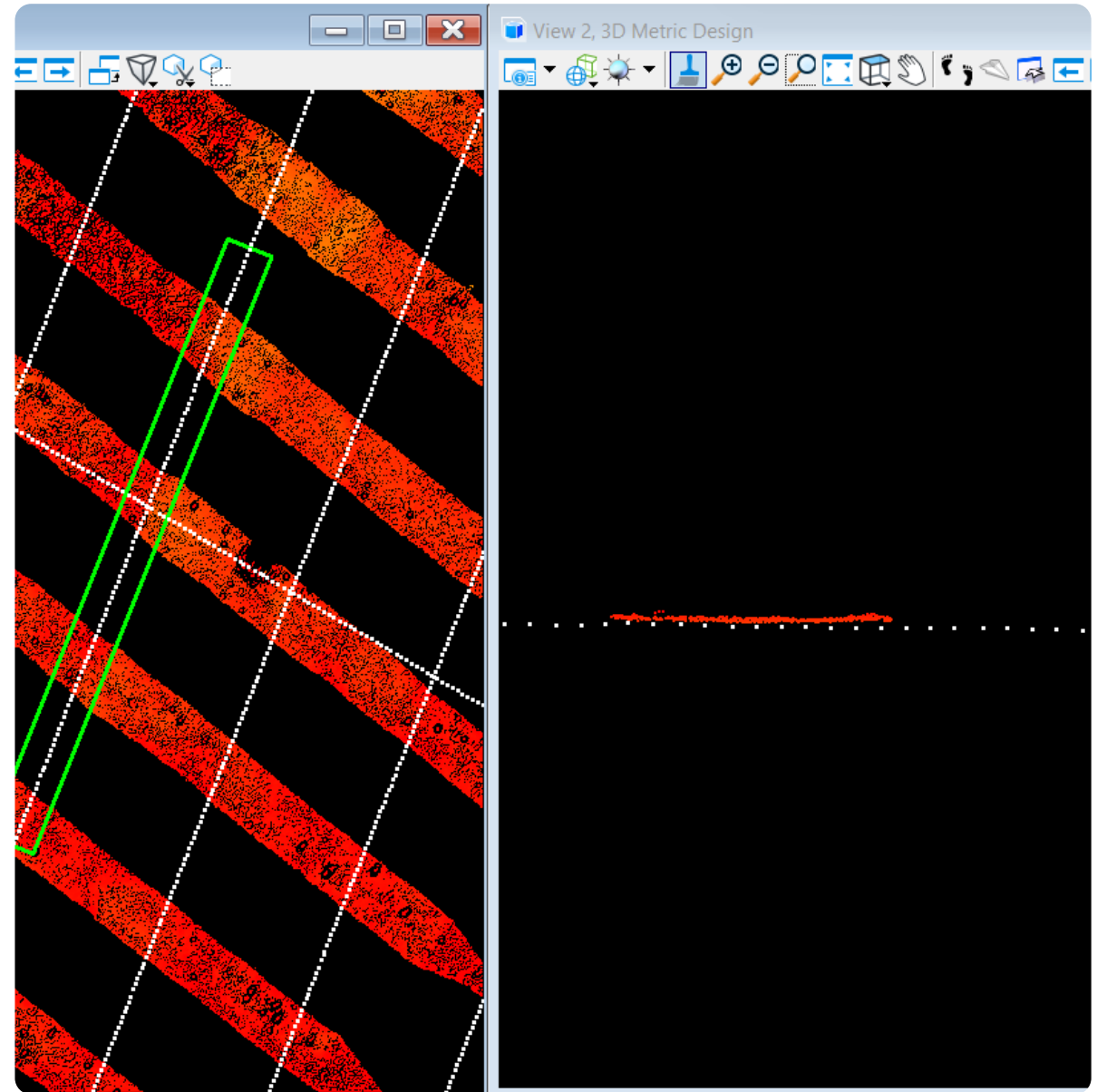
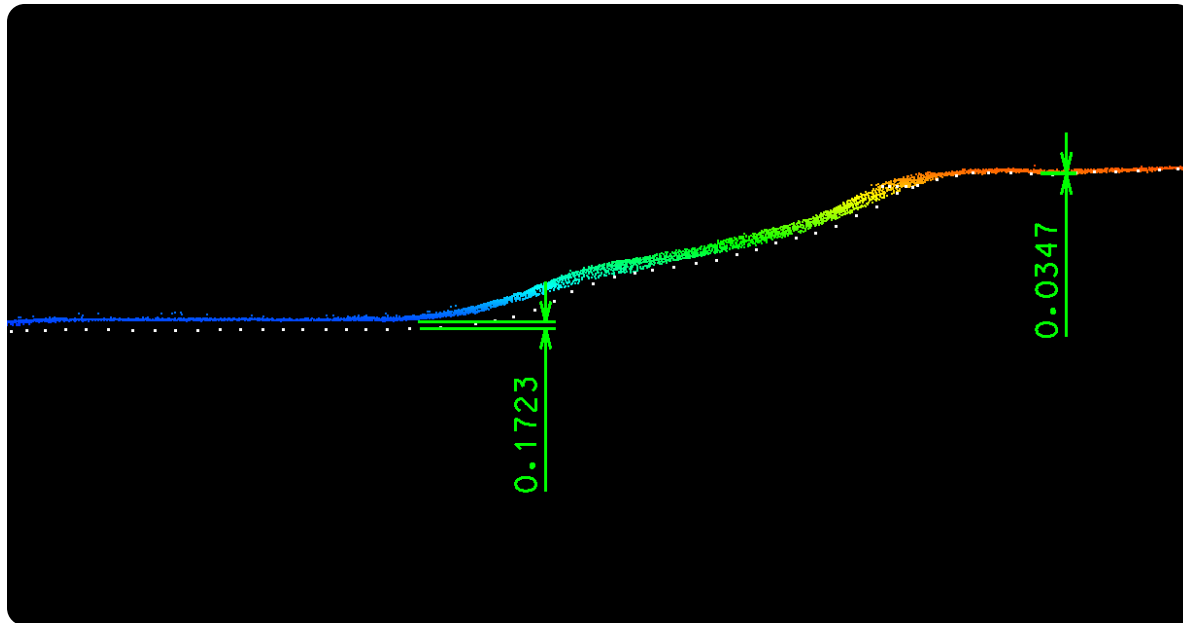


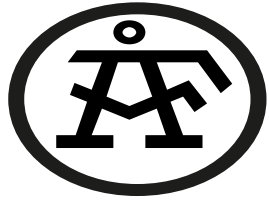


Single beam & Multi beam

Jämförelse mellan dataset

Skillnad mellan single & multi beam





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Tack för att ni tog er tid

