



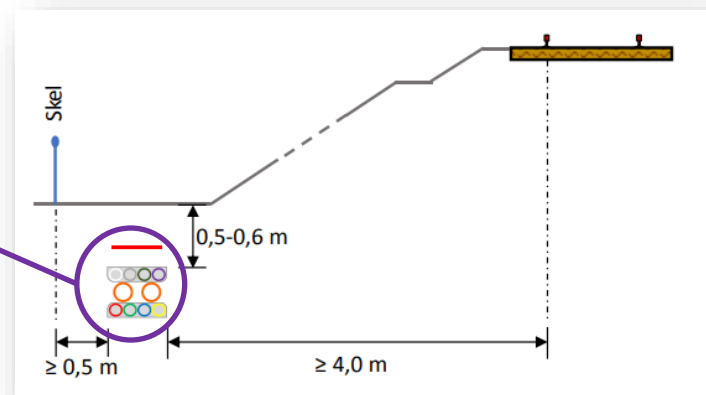
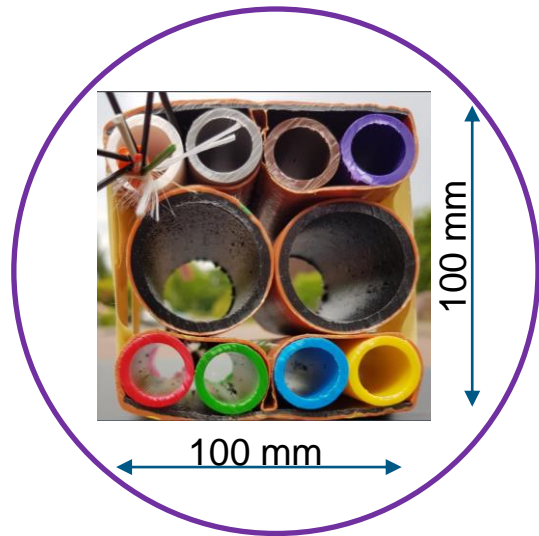
**SNC • LAVALIN**

## B7 - CAD-koordinering på FTN-projektet

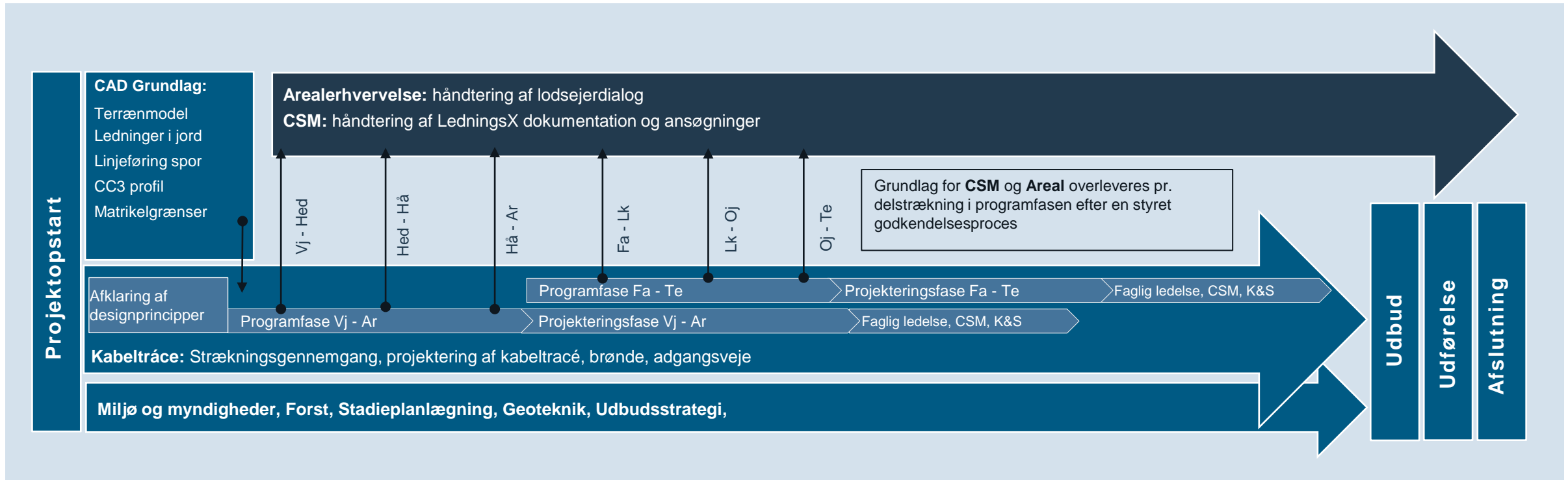
# Opgavens omfang

Nedgravet føringsvej til fiberkabler, der skal bruges til kommunikation langs jernbanen.

- Skal anvendes af **Signalprogrammet** samt til datatransmission for andre **jernbanetekniske anlæg**.
- Brønde placeres, hvor der skal tilsluttes til **tekniske objekter**, hvor banen skal krydses, hvor underføringer skal passeres samt max. for hver 2,2 km (fiberkabler skal iblæses under tryk).
- Udenfor det **sikringstekniske** baneområde, men indenfor **banens skel!**
- Vejle – Aarhus 83 km og Fredericia – Tinglev 95 km

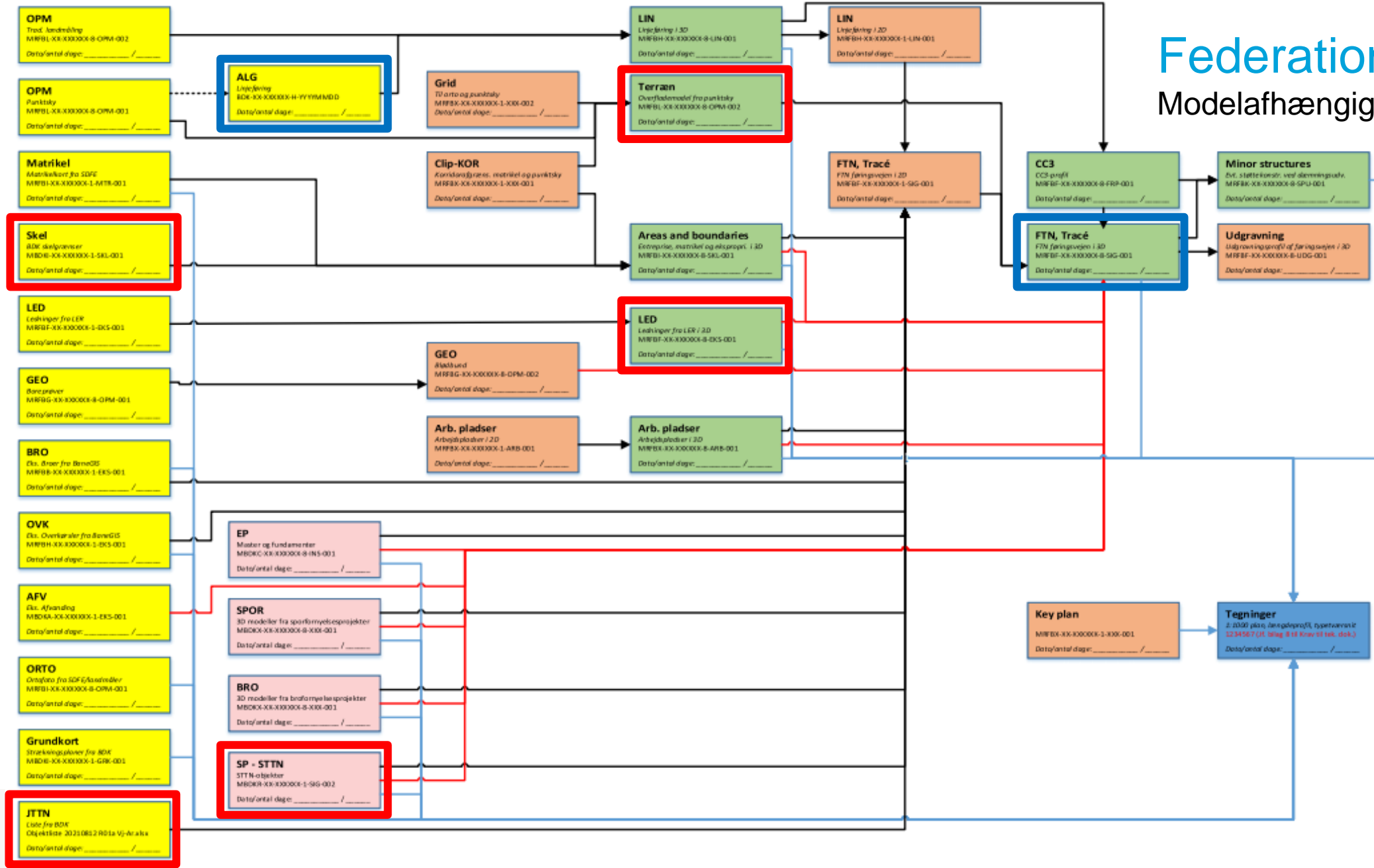


# Den overordnede projektproces

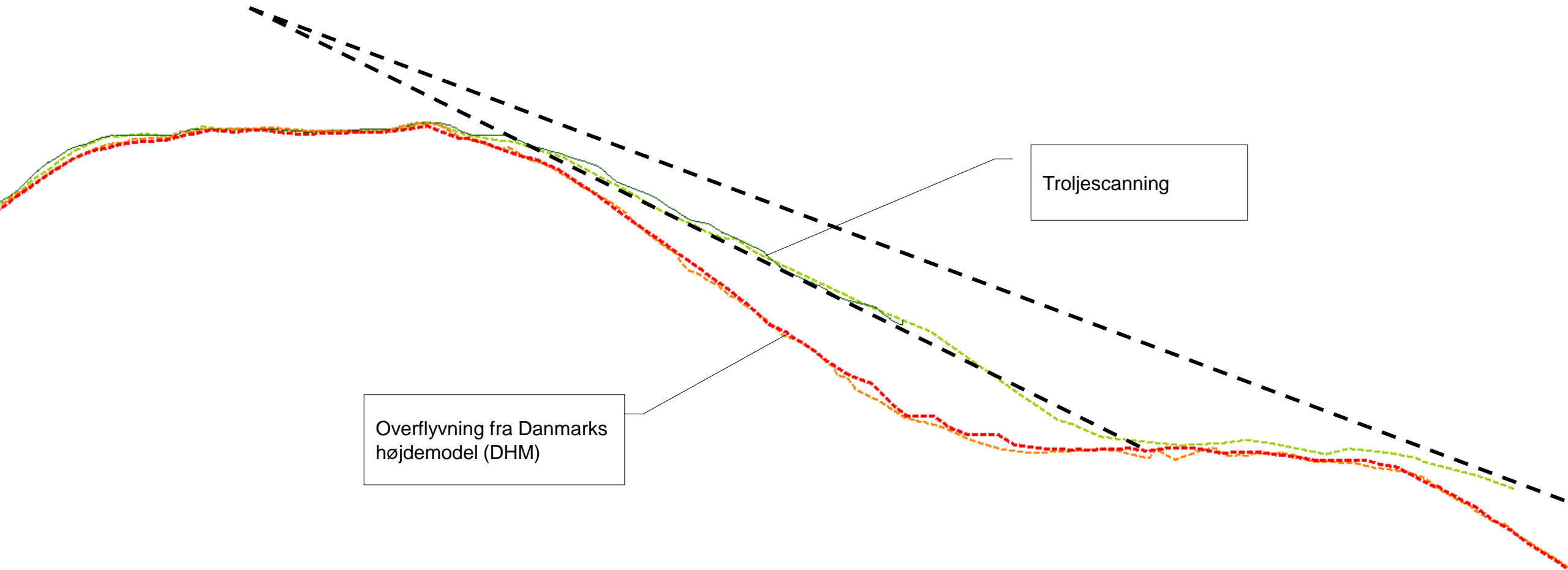


# Federation Strategy

## Modelafhængigheder



# Troljescanning vs. Overflyvning (Begge LIDAR)

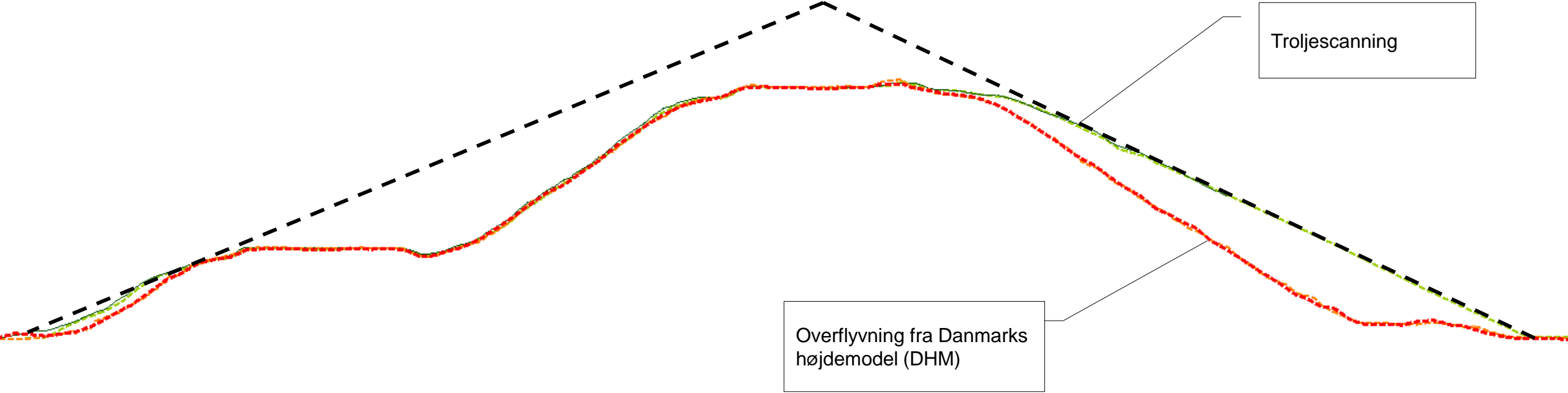


Troljescanning

Overflyvning fra Danmarks højdemodel (DHM)



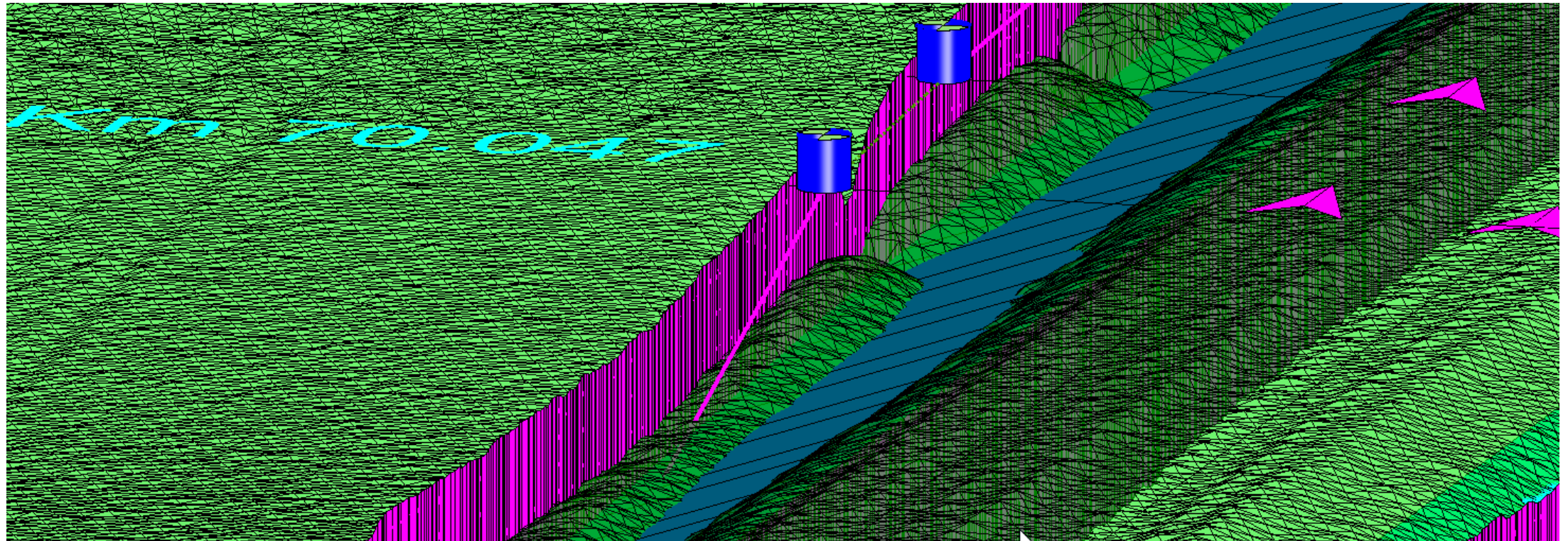
# Troljescanning vs. overflyvning



# Skelgrænse, CC3-profil mm. i 3D

## Krav fra Banedanmark

- til kollisionskontrol



# Banedanmarks punktsky-portal (RILA)

The screenshot displays the FUGRO Banedanmark LiDAR Scanning interface. At the top, there is a navigation bar with the FUGRO logo and menu items for View (2D, 3D), Layers, and Tools. Below this, the page title 'Banedanmark' is shown. A search bar is present, and a 'Current Video' section provides metadata for the selected frame.

Current Video	
Name:	2020-10-02_a_28_J
Frame id:	324
WGS84:	Longitude: 10.161
	Latitude: 56.123
Local:	Easting: 241,127.72
	Northing: 6,222,124.62
Date and Time:	Oct 2, 2020 8:09:08 AM

The main content area features a video player showing a perspective view of a railway track. A 3D point cloud is overlaid on the video, with blue dots indicating specific points of interest. A 'Video Options' panel is visible, allowing for adjustments to the point cloud visualization. The bottom of the interface includes a playback control bar and a small map inset in the bottom right corner.

Logged in as: LIDAR04@bane.dk (logout)  
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# ATKINS

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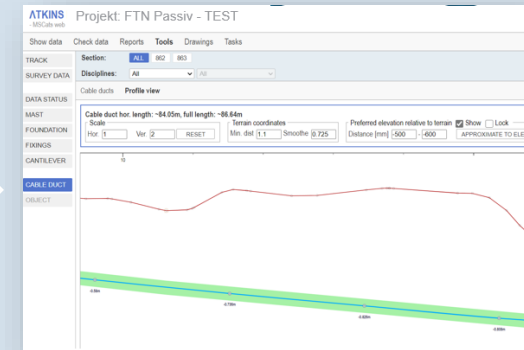
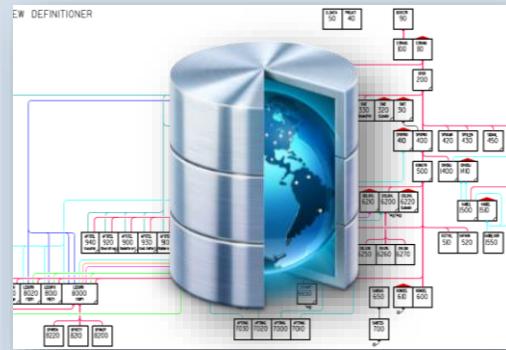
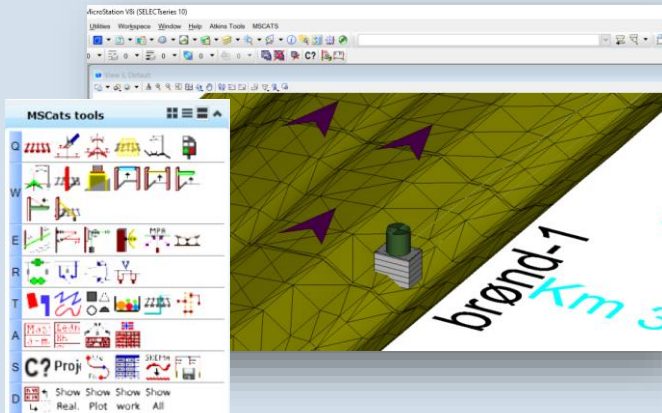
## B8 - Anvendelse af database- værktøjet MSCATS på FTN-projektet

# Alle discipliner gør brug af projektdatabasen og MSCATS værktøjer

MSCats tools (MDL)  
i MicroStation

Database (SQL server)

MSCats web (C#)



- Output via webinterface**
- Vertikal profilering tracé
  - Ledningsprotokol
  - Afsætningsdata
  - Issue-log til lodsejerdialog
  - Mængdeudtræk
  - Regelbaseret kontrol af data

**Input via MicroStation**

- Spor
- CC3-profil
- Terræn
- Arealer og grænser
- Ledninger i jord
- Føringsvej og brønde
- Geoteknik



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Fællesmøde i Atkins d. 8. oktober 2021



Tasks

Tasks

MSCats tools

- Q
- W
- E
- R
- T
- A
- S
- D

Drawing

Drawing Composition

Solids Modeling

Surface Modeling

Mesh Modeling

Terrain Model

Feature Modeling

Visualization

Animation

MSCats login

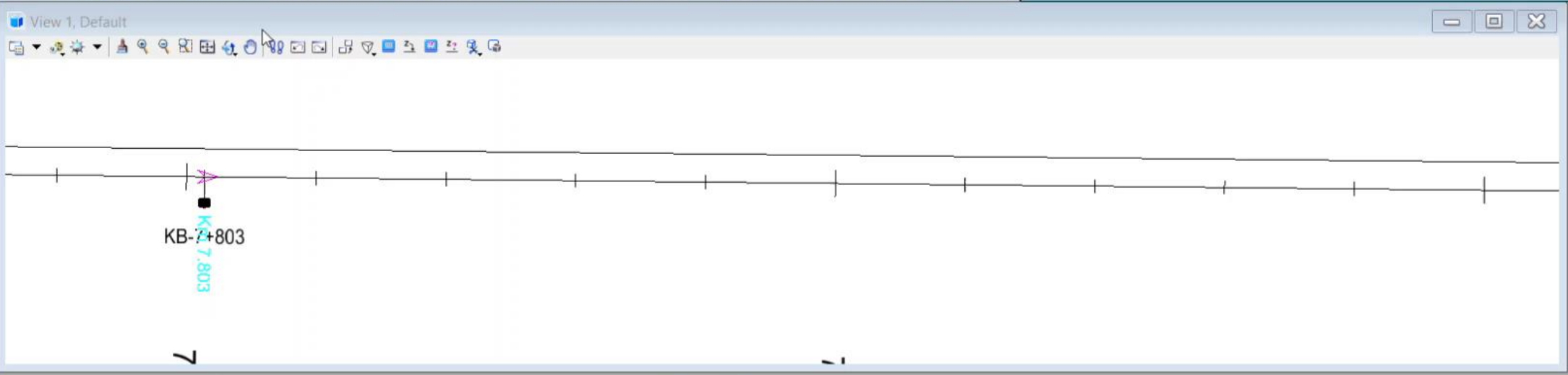
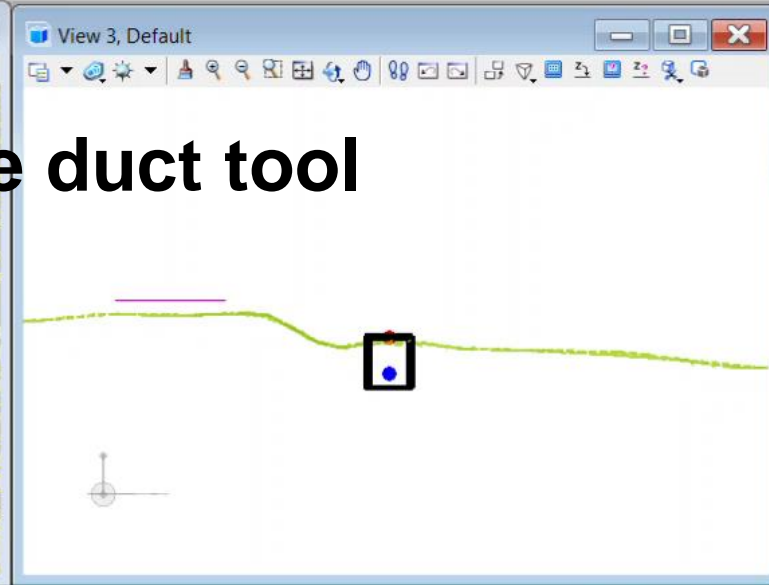
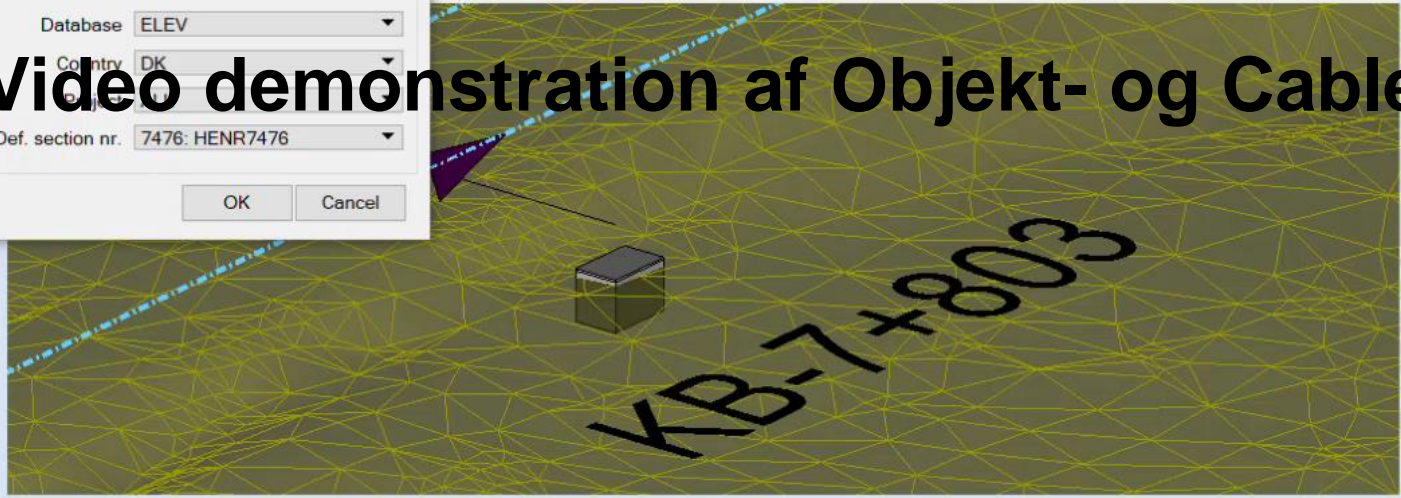
Database: ELEV

Country: DK

Def. section nr.: 7476: HENR7476

OK Cancel

# Video demonstration af Objekt- og Cable duct tool



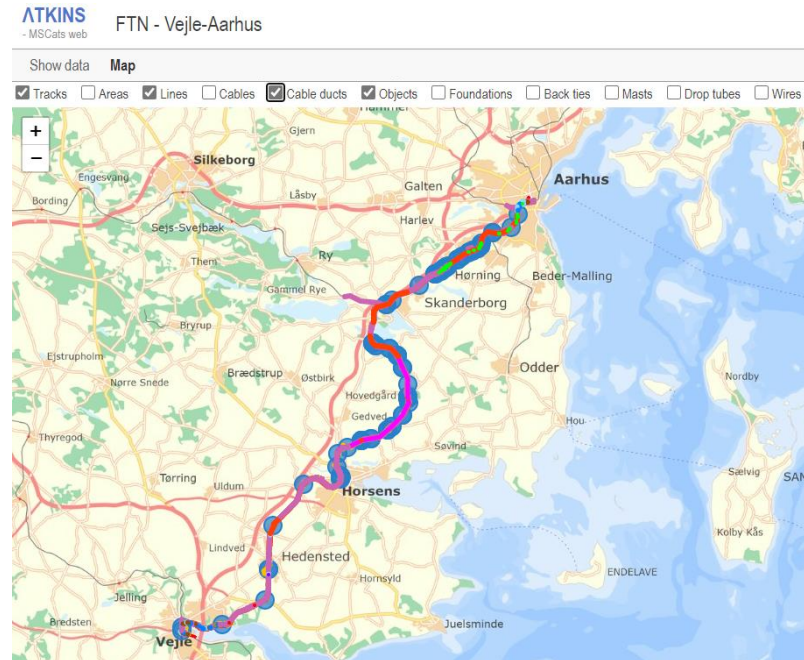
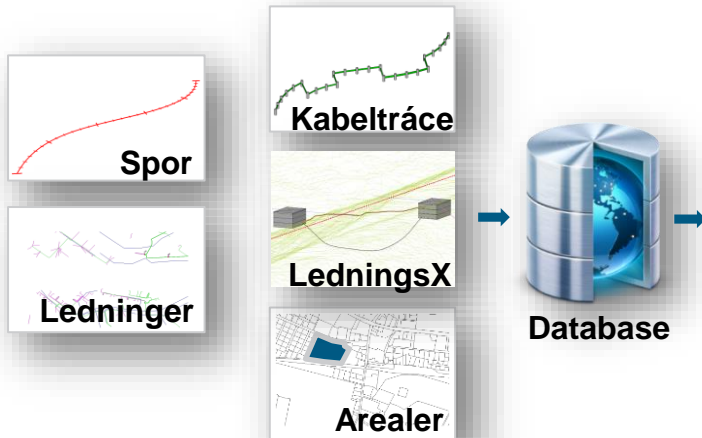
# MSCATS Web Viewer

- en adgang til at se *Design data* sammen med *Åbne data*

MicroStation designmodeller

MSCATS Web Viewer

Åbne data





# Video demonstration af Projektdatabsen, Map og rapporter

Log in  
Welcome to MSCats Web  
Start by locating your project database and log in.

LOG IN

Select database

ELEV MSCATS

Country

CA DK IE NO SV UK TEST TASKS

Database: MSCATS\_DK\_FTN\_VJAI  
Username: FTN\_VJAR  
Password:

Project

ART BUD FBFL FSB FTN GBDSB HBAB IG INGB KAST KBB KHGB KKHOT NKLS NVN ODDE RBF RG2 TD UHRE

UND VSA

Stage

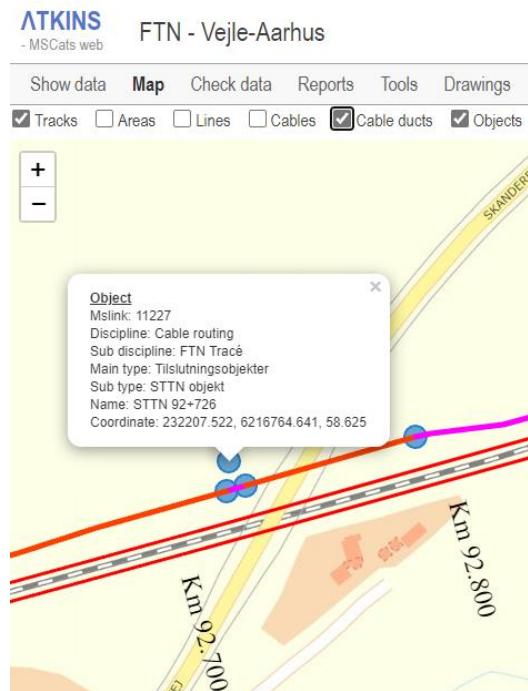
VJAR

Project: FTN - Vejle-Aarhus  
No. sections: 6 stk: 232 (Fredericia - Vejle), 233 (Vejle), 234 (Vejle - Skanderborg), 235 (Skanderborg), 236 (Skanderborg - Aarhus H), 237 (Aarhus H)  
Km interval: 25.3688 - 105.66  
No. structures: 0  
No. objects: 338

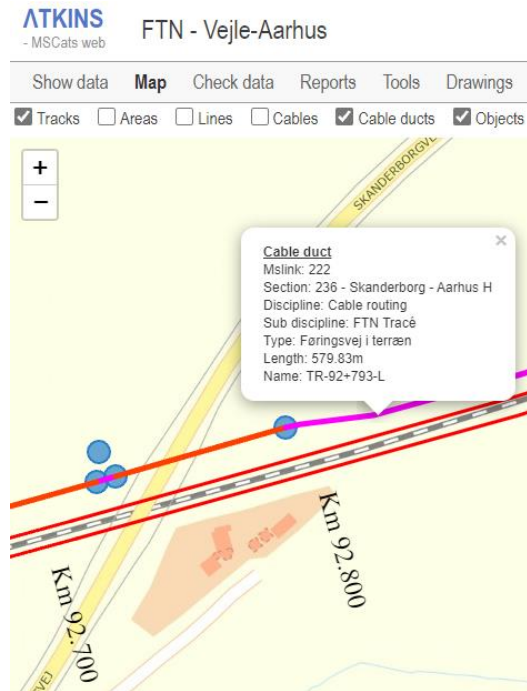
# MSCATS Web Viewer

- man vælger selv hvilke *Design Data* man vil se

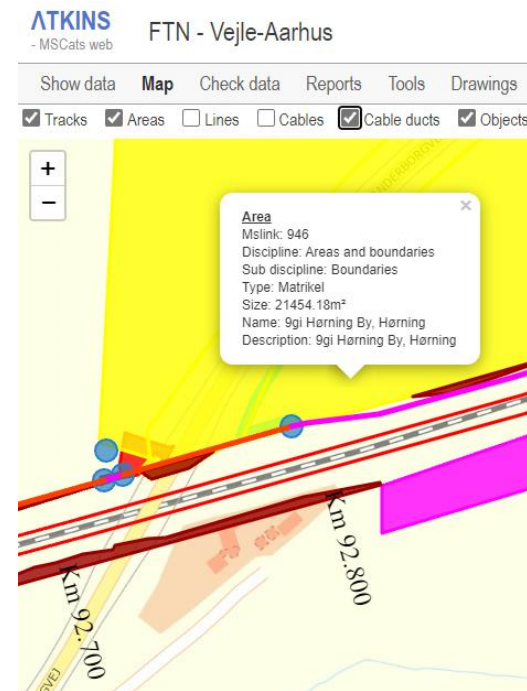
**Objekter**, brønde, STTN, JTTN, boregruber m.m.



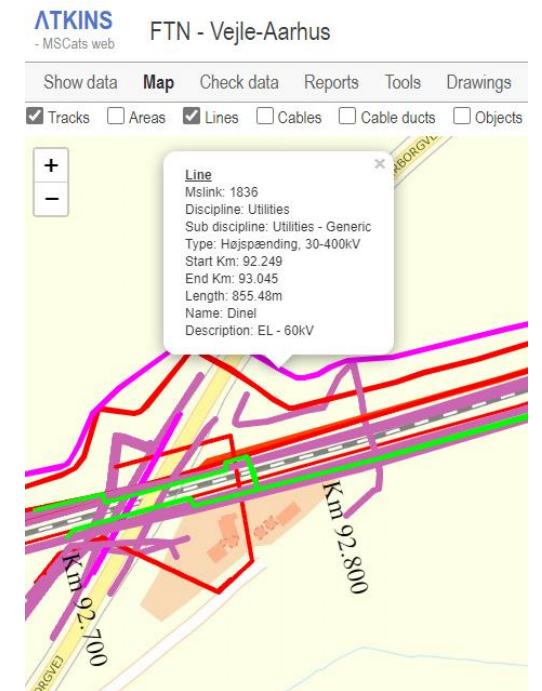
**Kabeltracé**, i terræn, styret underboringer, i kabelrende m.m.



**Arealer**, f.eks. fredskov, matrikler, beskyttet områder m.m.

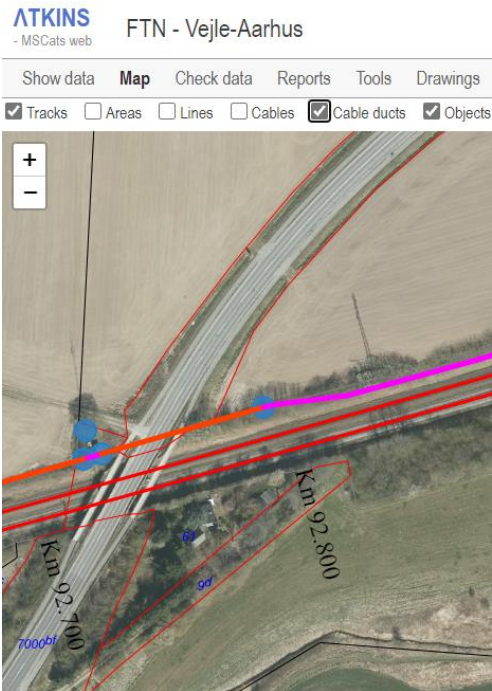


**Ledninger i jord**, LER-oplysninger og Bandedanmark ledninger

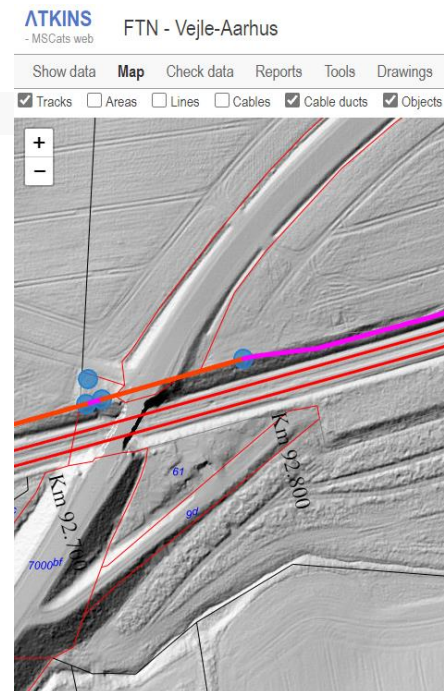


# MSCATS Web Viewer man vælger selv hvilke *Åbne data* man vil se sammen med designdata

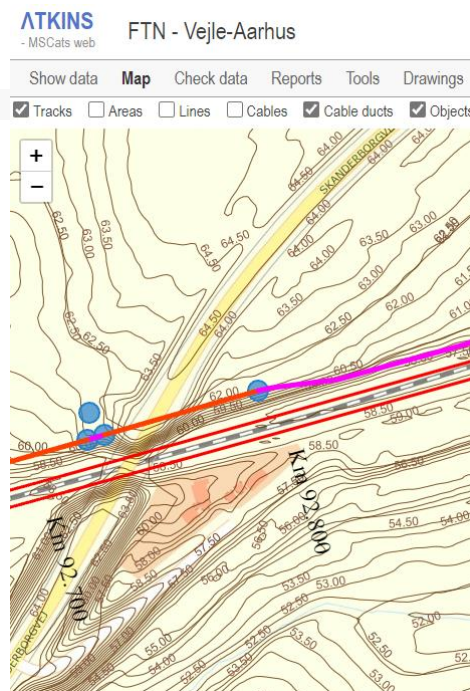
## Ortofoto



## Skyggekort, terræn Baseret på Danmarks højdemodel

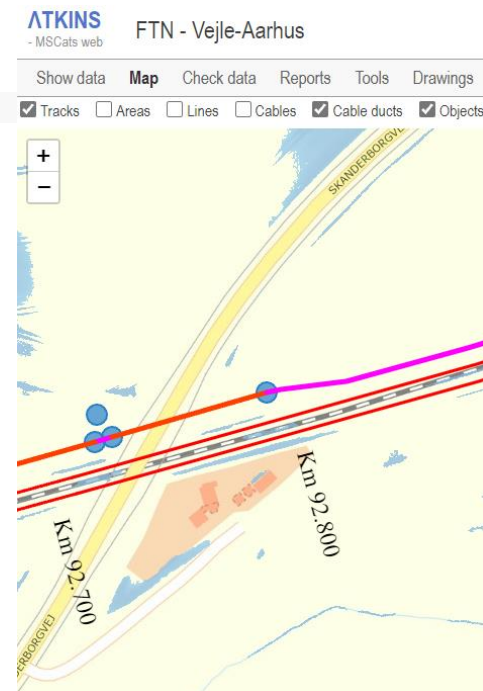


## Højdekurver



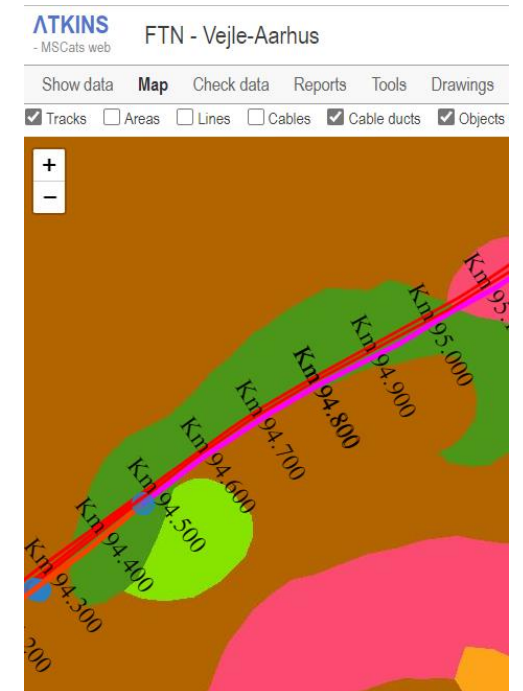
## Bluespot

Lavninger i terræn der fyldes  
med regnvand



## Jordartskort

Jordarter i typisk 1 meters dybde



# MSCATS Web – Registrering af designlog, rapporter for afsætningsdata, mængder, div. lister

ATKINS - MSCats web FTN - Vejle-Aarhus

Show data Map Check data Reports Tools Drawings **Design log** Tasks

AREAS  
LINES  
CABLE DUCTS  
CABLES  
**OBJECTS**  
SETUP  
TEAMS  
TEAM MEMBERS

Disciplines: Cable routing All  
Object type: Beton brønde All  
Object: All

ID #	Specific Item	Title	Priority	Initials	Date
7	KB-97+909-R	Designlog		LEBE8478	8/24/2021 7:56:15 AM
8	KB-96+486-R	Designlog		LEBE8478	8/24/2021 8:27:57 AM
12	KB-99+349-R	Designlog		LEBE8478	8/26/2021 1:19:38 PM
14	KB-94+153-R	Designlog		LEBE8478	8/26/2021 2:28:05 PM
15	KB-94+161-R	Designlog		LEBE8478	8/26/2021 2:28:11 PM
16	KB-94+265-R	Designlog		LEBE8478	8/26/2021 2:29:37 PM
20	KB-99+015-R	Designlog		LEBE8478	8/26/2021 2:45:23 PM
21	KB-99+021-R	Designlog		LEBE8478	8/26/2021 2:45:33 PM
22	KB-101+464-R	Designlog		LEBE8478	8/26/2021 2:52:04 PM
23	KB-92+722-L	Designlog		LEBE8478	8/27/2021 1:20:31 PM

Title: Designlog  
Description: Adgangsvej Eksisterende adgangsvej gennem Høring st. parkeringsplads. Kobles til STTN objekt.

ATKINS - MSCats web FTN - Vejle-Aarhus

Show data Map Check data **Reports** Tools Drawings Design log Tasks

Section: ALL 232 233 234 235 236 237  
Disciplines: Cable routing FTN Tracé  
Object type: All All

CREATE REPORT EXPORT TO CSV CSV Format DA: 1.23 ; 4.56

Section Nr	Km	Type	Track
233	25.388	STTN objekt	6
233	25.779	JTTN objekt	5
233	25.779	M-JTTN-L	5
233	25.953	M-THROUGH-L	6
233	25.955	M-THROUGH-L	6
233	26.18	STU grube	4
233	26.296	STU grube	4
234	26.78	STU grube	H-spor
234	26.89	STU grube	H-spor
234	26.89	STU grube	H-spor
234	27.676	M-THROUGH-L	H-spor
234	31.028	STTN objekt	H-spor
234	37.112	STTN objekt	H-spor
234	40.692	STTN objekt	3
234	40.706	JTTN objekt	2
234	42.003	M-THROUGH-L	H-spor

Downloads

Objects (1).csv  
[Open file](#)

[See more](#)

AutoSave [ON] Objects (2).csv

File	Home	SNCL	Insert	Page Layout	Formulas	Data	Review	View
A	B	C	D	E	F	G		
1	Date:	08-10-2021 - kl 08:41						
2								
3								
4	Section Nr	Km	Type	Track	Name	X	Y	
5	233	25,388	STTN objekt	6	STTN 25+388	202260,508	6175268,69	
6	233	25,779	JTTN objekt	5	JTTN 25+779	202324,612	6175663,386	
7	233	25,779	M-JTTN-L	5	KB-25+779-L	202325,638	6175663,255	
8	233	25,953	M-THROUGH-L	6	KB-25+953-L	202352,75	6175833,655	
9	233	25,955	M-THROUGH-L	6	KB-25+955-L	202352,981	6175835,633	
10	233	26,18	STU grube	4	BG-26+180-L	202444,15	6176049,505	
11	233	26,296	STU grube	4	BG-26+296-L	202530,214	6176129,431	
12	234	26,78	STU grube	H-spor	BG-26+780-L	202995,773	6176222,685	
13	234	26,89	STU grube	H-spor	BG-26+890-L	203103,016	6176194,352	