AI Clearing

DENYS

AI-POWERED

Construction Progress Tracking

Desteldonk-Opwijk Gas Pipeline

The Desteldonk – Opwijk project: a missing link

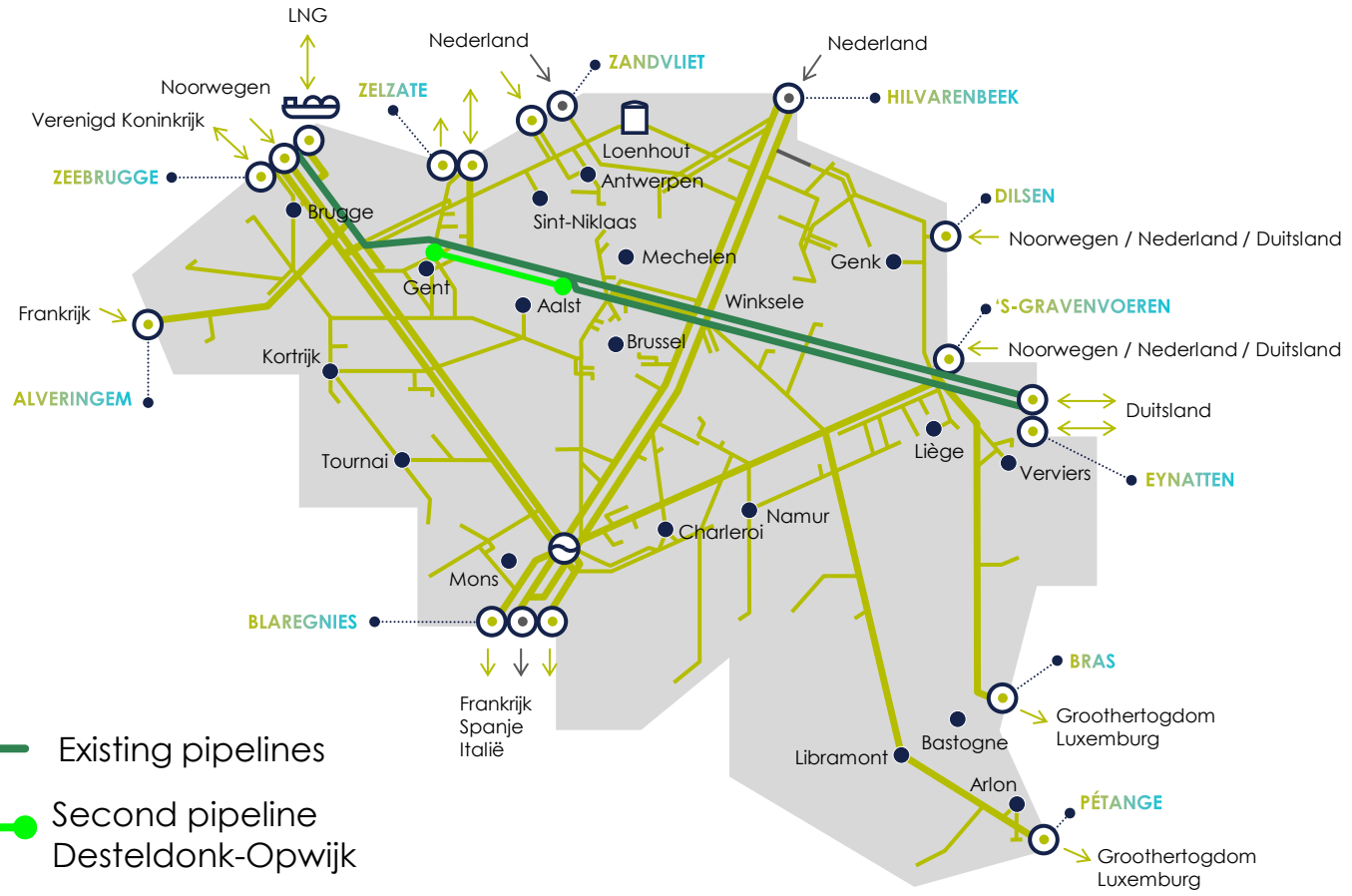
Fluxys-net
4.000 km
HP
Network

1 pipeline
Double purpose

Today extra capacity for natural gas

Tomorrow capacity for hydrogen

REPowerEU



Existing pipelines

Second pipeline
Desteldonk-Opwijk

2 types of Investments from Denys

New way of monitoring the projects

- Monitoring by drone
- Improving and using a program focused on pipelines

AI Clearing

DENYS

1 + 1 > 2

Investing in new technologies and people

„Our company invested in drones and operator training which is an investment that will translate into more efficient monitoring of our construction sites in the future”

AI Clearing collaborated with DENYS on the Desteldonk-Opwijk project providing cyclical reports based on AI analysis & drone images

Project details:

Project type: Gas Pipeline Construction

Project length: 44 km, divided into two sections:

- Section 1 – 30 km
- Section 2 – 14 km

Construction corridor width: 30 m

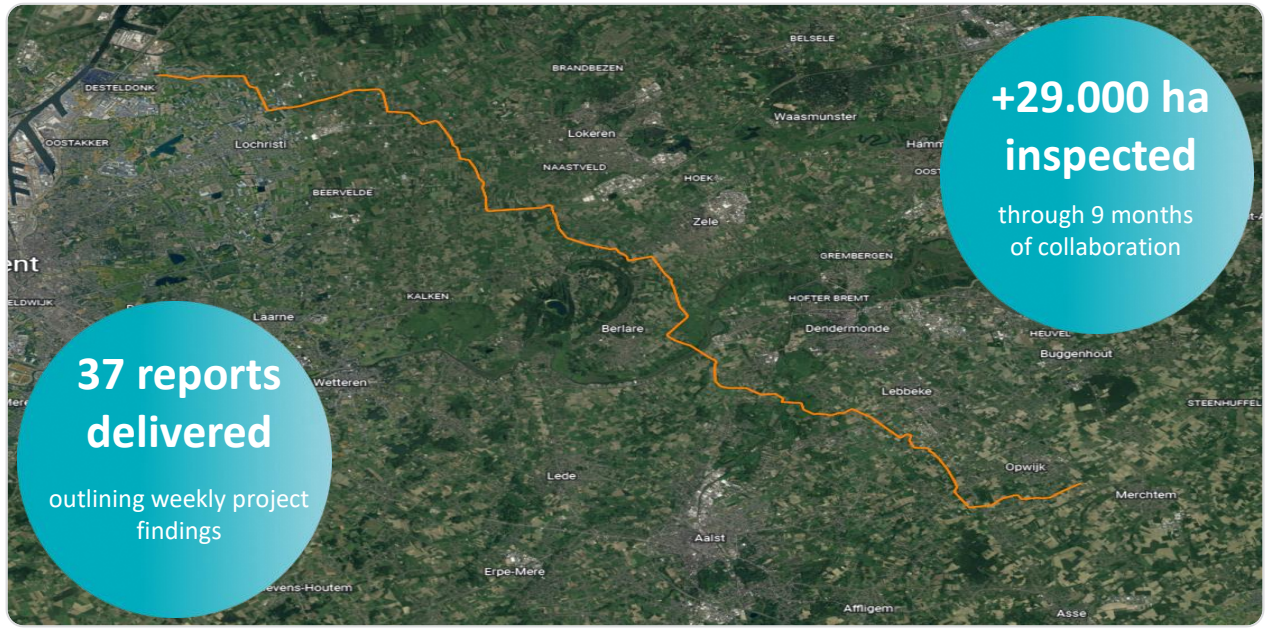
Reporting extent: Entire linear progress of the pipeline construction

Reporting frequency: Weekly

Reporting start: March 2023

Project duration: 9 months

Characteristics of the cooperation: Preparation and delivery of cyclical AI-based reporting, containing construction progress updates on pre-agreed KPIs and adherence to the design, with possible Health&Safety tracking delivered through an interactive online Dashboard.



+20 Activities Monitored

- Clearing & Grading
- Topsoil removal
- Pipe stringing
- Pipe welding
- Welds coating
- Trenching
- Backfilling
- Missing drilling
- Gas station - foundations
- Gas station - piping
- Gas station - trenching
- Assembly zone violations
- People without helmets
- Proximity to the existing pipeline
- Pipeline route different than designed

AI Clearing

BASE INFORMATION:

Founded:	2020
Headquarters:	Austin, Texas

KEY PARAMETERS:

Less than 24h
Report Delivery

8 times faster
than legacy solutions

ORACLE INTEGRATIONS:

Primavera P6, Unifier, Aconex & others...

Pipelines

Railways

Highways

SOLUTION:

Reality Capture

Mobile App

Design

Schedules

Budgets

Progress Tracking
Assess current state of your infrastructure project

Quality Control
Inspect execution quality in the field with automated error detection

Payment Release Validation
Settle payments based on objective and fraud-proof progress quantifications

CLIENTS & GLOBAL PRESENCE:

DENYS

NEOM نيوم

MOTA-ENGIL

SOGEA SATOM

SKANSKA

VINCI

GAZ system

LARSEN & TOUBRO

BECHTEL

COLAS RAIL

KRAEMER

EllisDon

PCL

All our linear inspections cover an area of:

44 635 HA

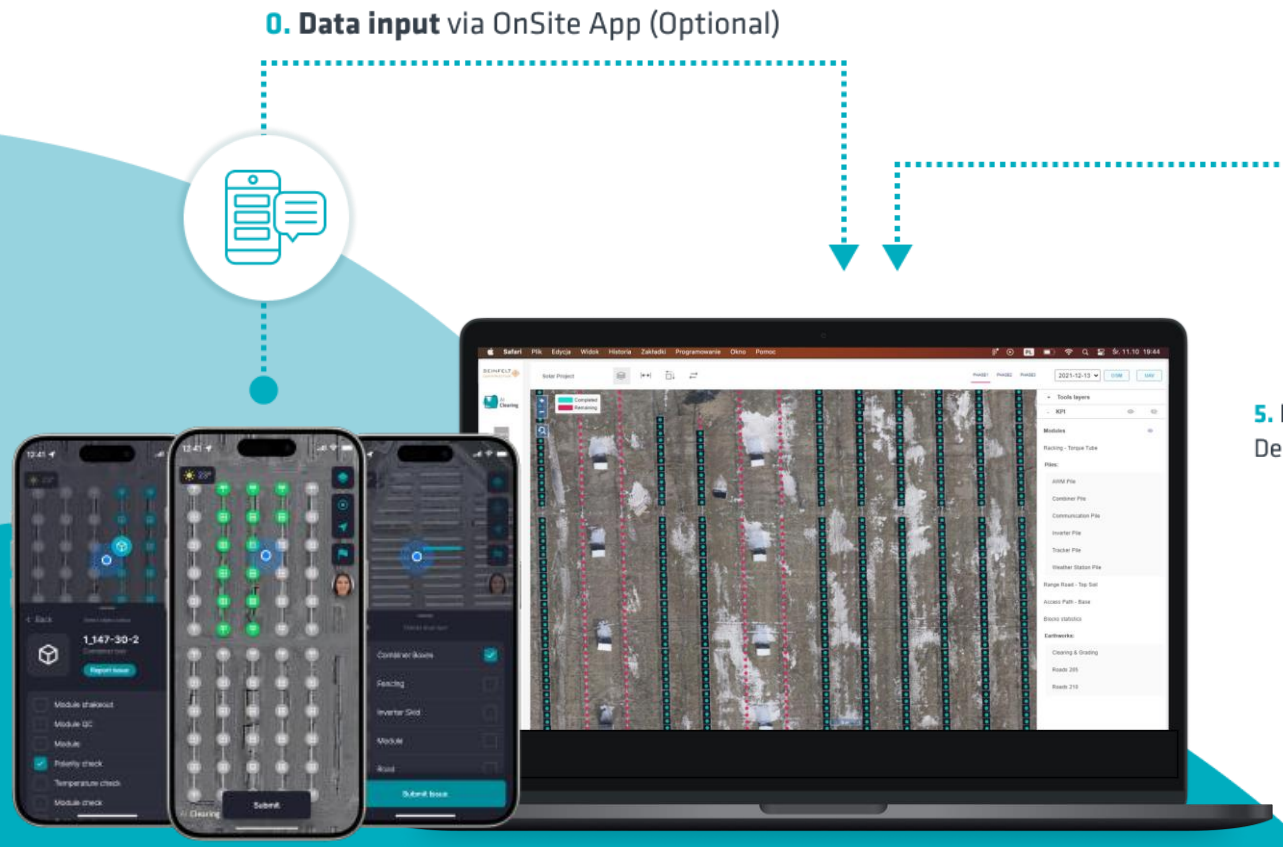
All our inspections cover an area of:

221 334 HA → **21x** area of Paris

Proud IPLOCA member

IPLOCA

Daily reporting cycle with AI analysis & drones support



0. Data input via OnSite App (Optional)

1. Drone operations

2. Drone images upload to **AI Clearing**

3. Raw Aerial Data Cleaning

4. AI Analytics

5. Reports Delivery

~24 h*

Onsite Tracking

Manual data acquisition mobile application for onsite teams allowing up to daily inspections

AI Clearing CORE

Online Dashboards provide digital access to the construction site conveniently through a unified online dashboard

** for inspections up to 500 ha*

Challenge: Monitor successfully the entire construction site faster & more efficiently than in a traditional method (by on-site surveyors)

Orthomosaic map processed from drone imagery

Intuitive dashboard enabling easy access to all of the modules

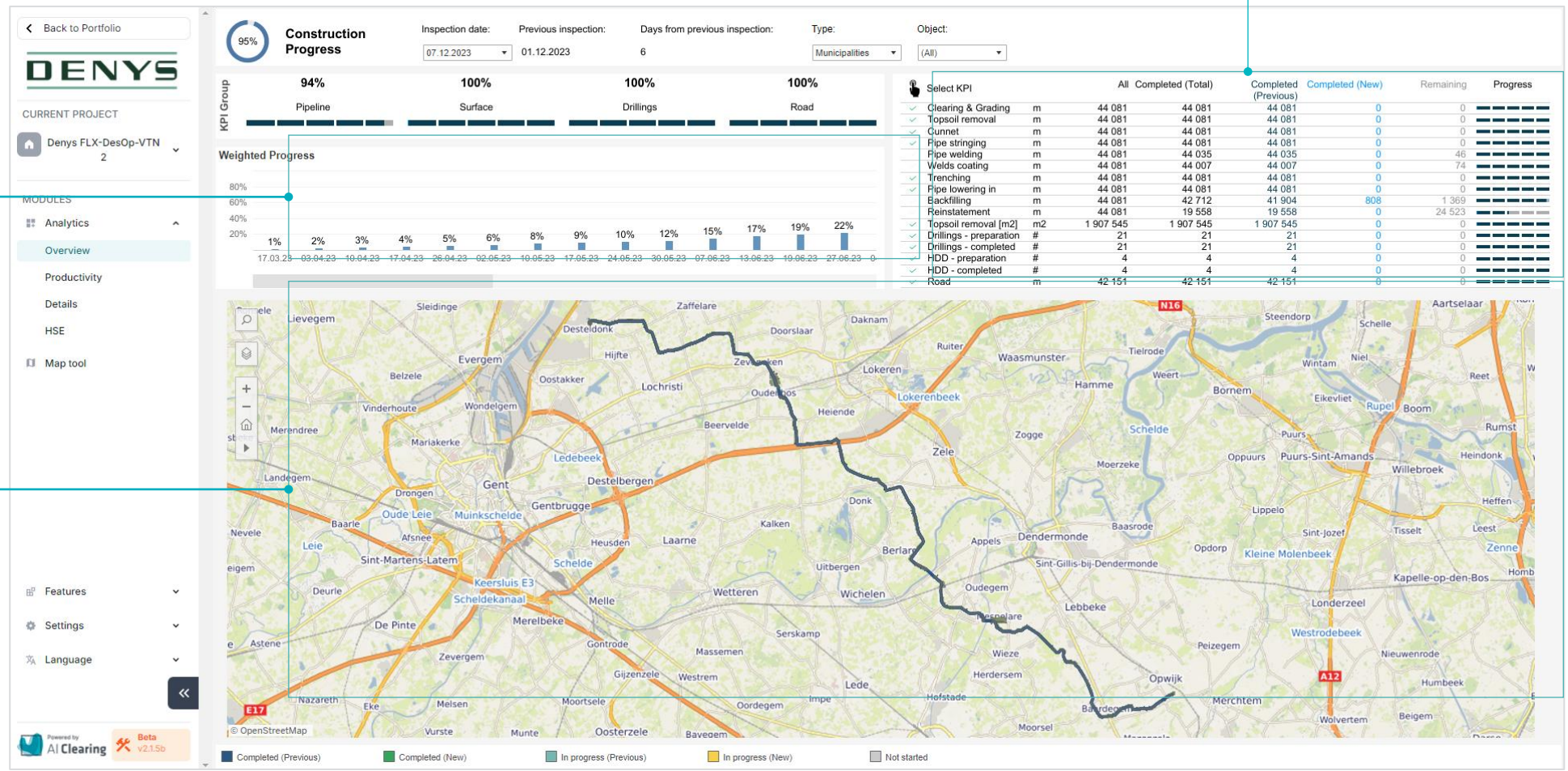
Adaptable filtering options regarding objects (vector layers) displayed on the map

Challenge: Receive all relevant information on pipeline construction progress in a short period of time

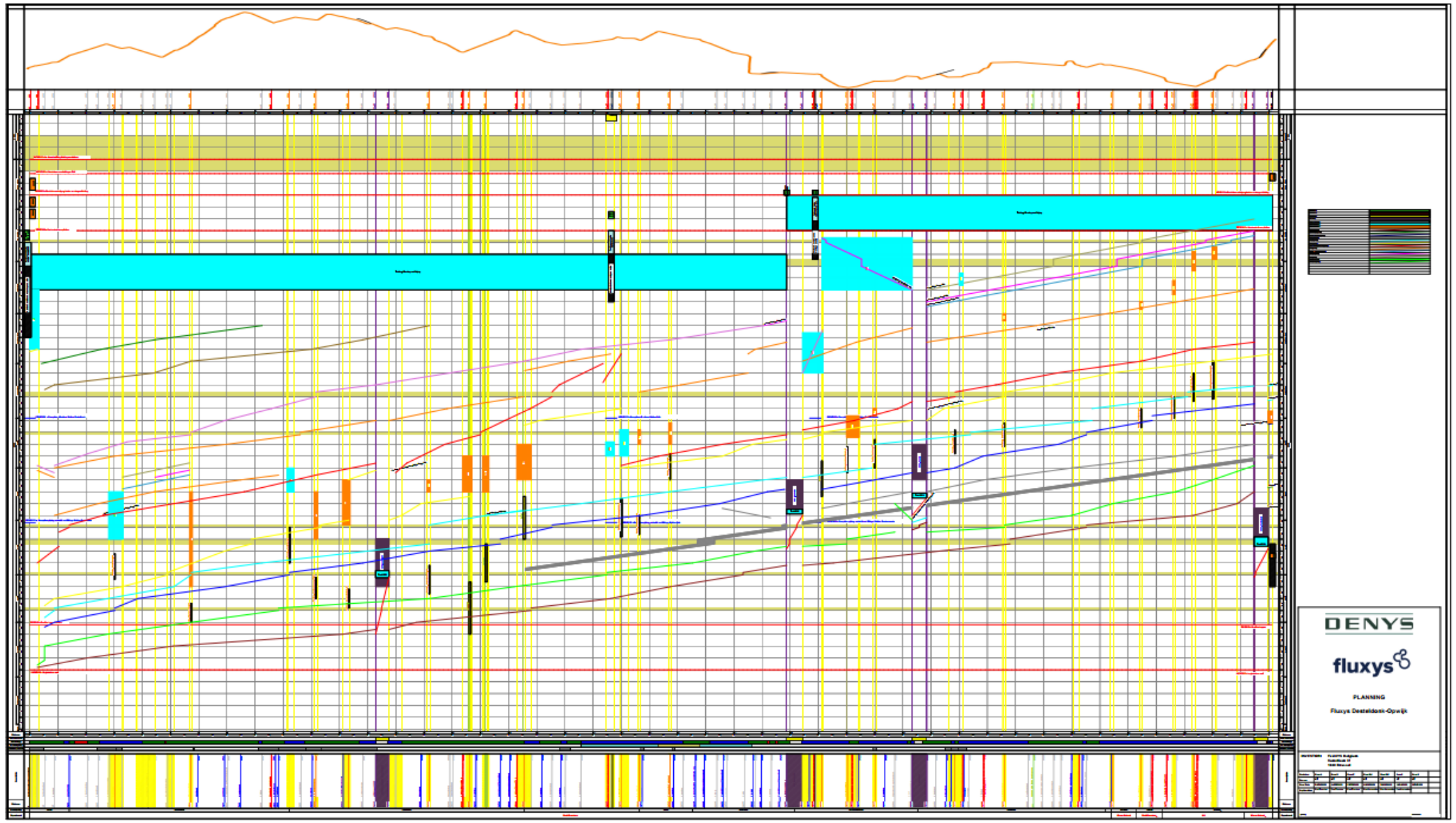
Detailed statuses of activity completion are displayed in the table

Each activity had its weight, which was set at the very beginning of the project. This allowed the progress of the work to be **truly presented** in percentage figures

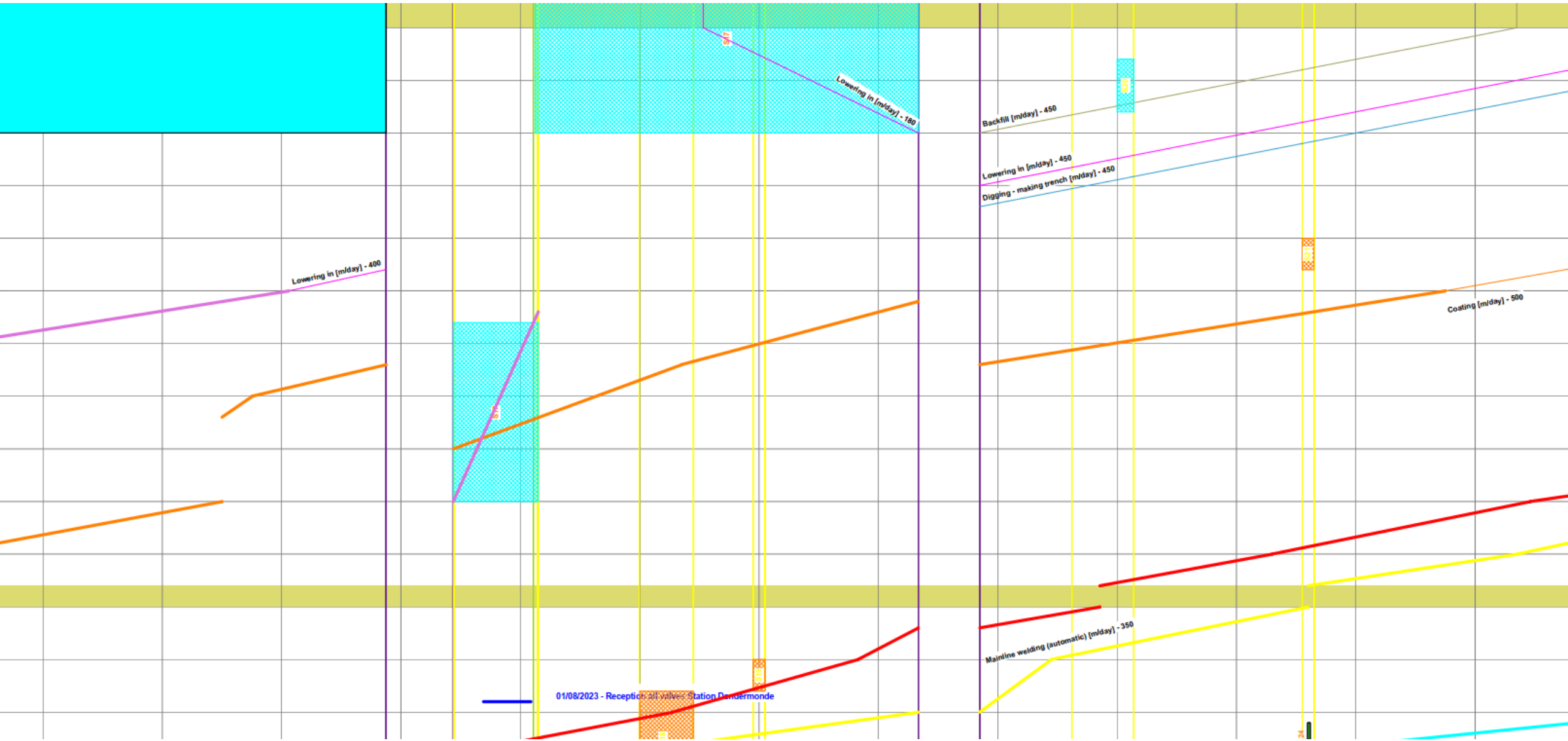
Pipeline project displayed on the interactive map



Initial Tilos planning



Initial Tilos planning

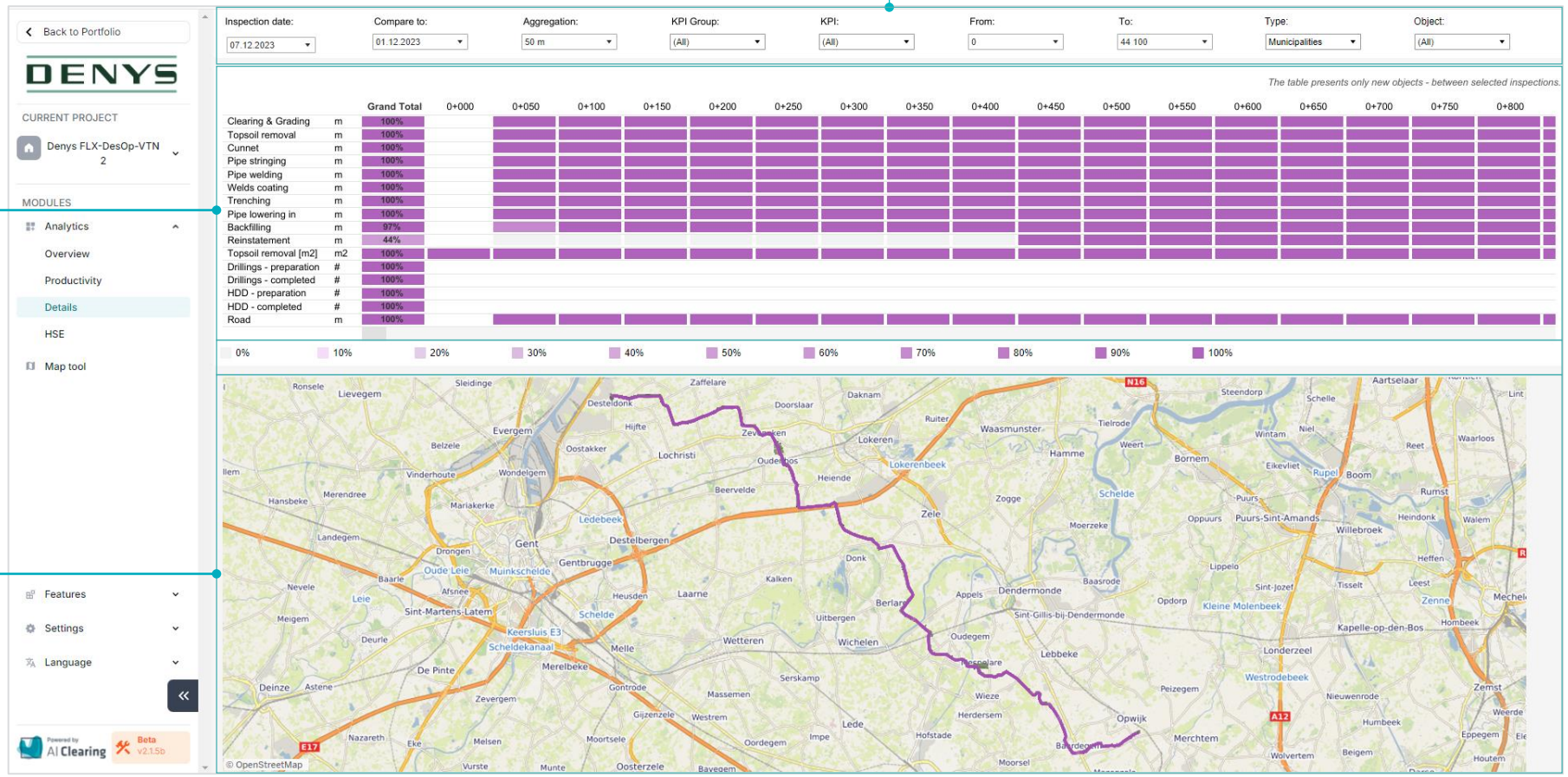


Completion stages for tracked activities could also be defined for specific sections of the pipeline

Different filtering and aggregation options

Important transparency:
The mileage from Tilos software is the same mileage implemented on the platform

Data on the completion status of specific pipeline sections is also displayed on the map



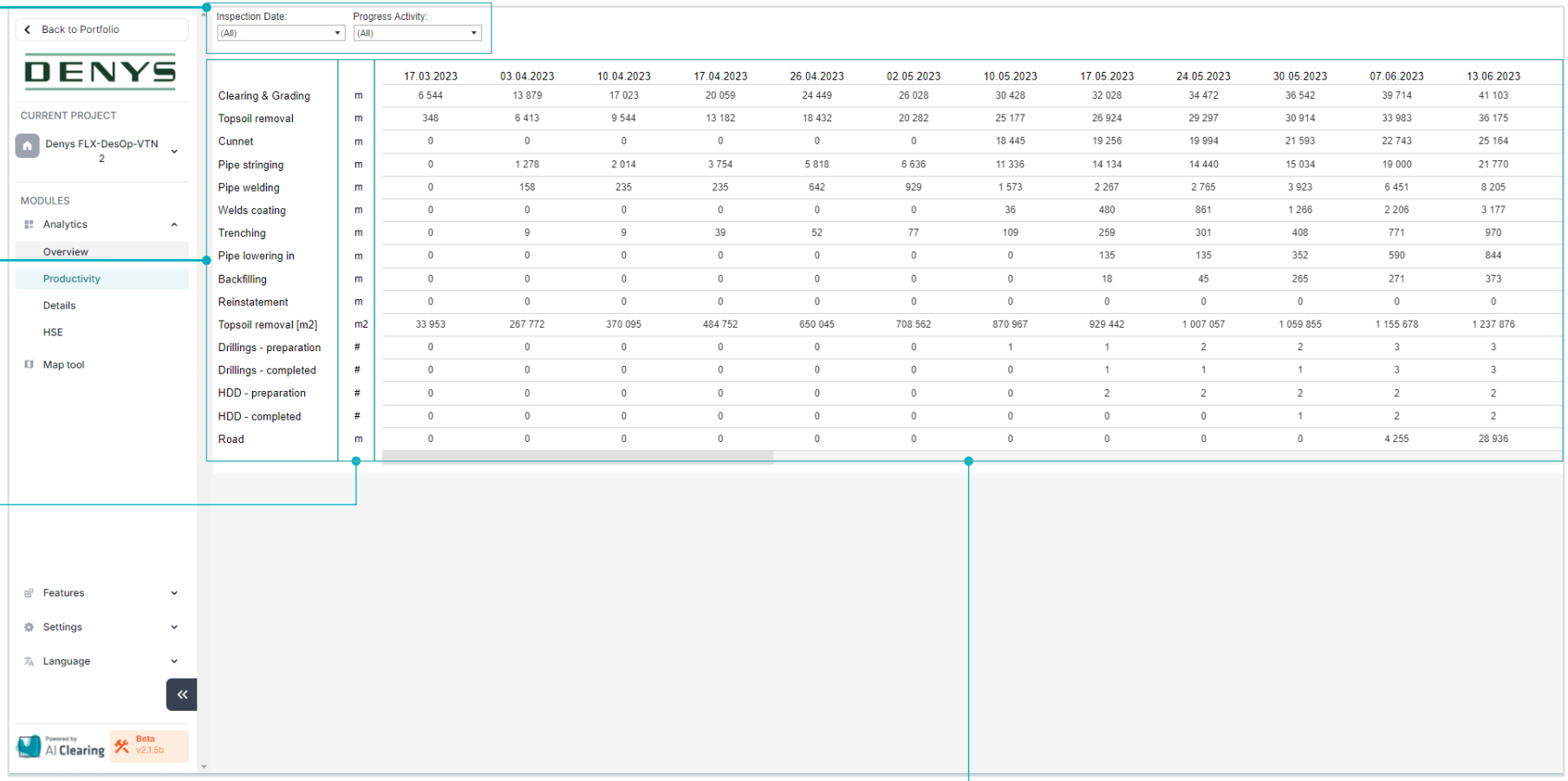
Productivity breakdown provided information about work performed defined for a certain point in time

Data can be sorted by certain activities and timeframes

Activities pre-defined by Denys

Completion of work is measured in specified units

Each column of the table represents the numerical values for each activity at weekly intervals



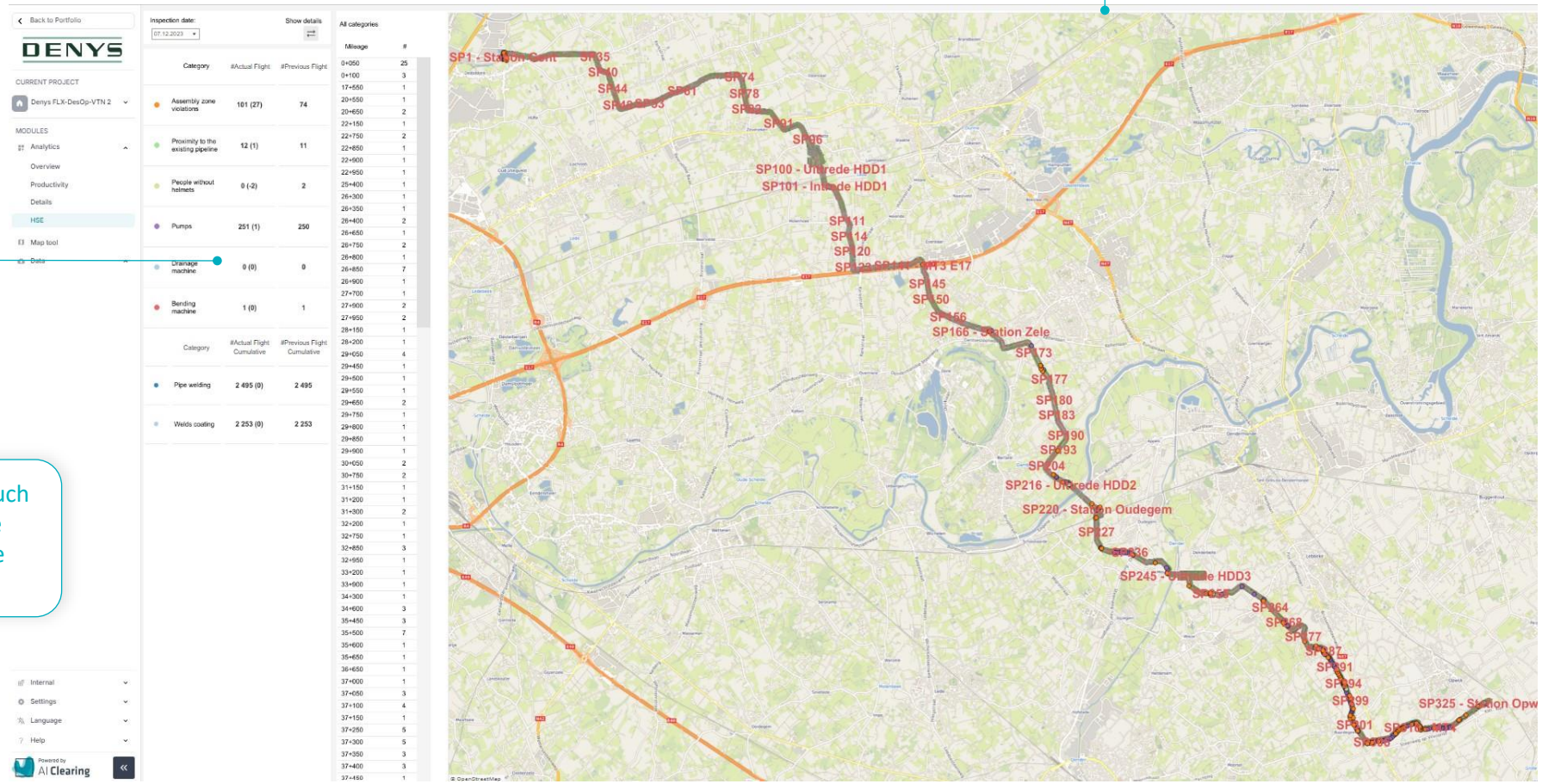
		17.03.2023	03.04.2023	10.04.2023	17.04.2023	26.04.2023	02.05.2023	10.05.2023	17.05.2023	24.05.2023	30.05.2023	07.06.2023	13.06.2023
Clearing & Grading	m	6 544	13 879	17 023	20 059	24 449	26 028	30 428	32 028	34 472	36 542	39 714	41 103
Topsoil removal	m	348	6 413	9 544	13 182	18 432	20 282	25 177	26 924	29 297	30 914	33 983	36 175
Cunnet	m	0	0	0	0	0	0	18 445	19 256	19 994	21 593	22 743	25 164
Pipe stringing	m	0	1 278	2 014	3 754	5 818	6 636	11 336	14 134	14 440	15 034	19 000	21 770
Pipe welding	m	0	158	235	235	642	929	1 573	2 267	2 765	3 923	6 451	8 205
Welds coating	m	0	0	0	0	0	0	36	480	861	1 266	2 206	3 177
Trenching	m	0	9	9	39	52	77	109	259	301	408	771	970
Pipe lowering in	m	0	0	0	0	0	0	0	135	135	352	590	844
Backfilling	m	0	0	0	0	0	0	0	18	45	265	271	373
Reinstatement	m	0	0	0	0	0	0	0	0	0	0	0	0
Topsoil removal [m2]	m2	33 953	267 772	370 095	484 752	650 045	708 562	870 967	929 442	1 007 057	1 059 855	1 155 678	1 237 876
Drillings - preparation	#	0	0	0	0	0	0	1	1	2	2	3	3
Drillings - completed	#	0	0	0	0	0	0	0	1	1	1	3	3
HDD - preparation	#	0	0	0	0	0	0	0	2	2	2	2	2
HDD - completed	#	0	0	0	0	0	0	0	0	0	1	2	2
Road	m	0	0	0	0	0	0	0	0	0	0	4 255	28 936

Support in verifying Health & Safety related activity detection during the construction process.

Incidents marked on the map

Type of incident/object

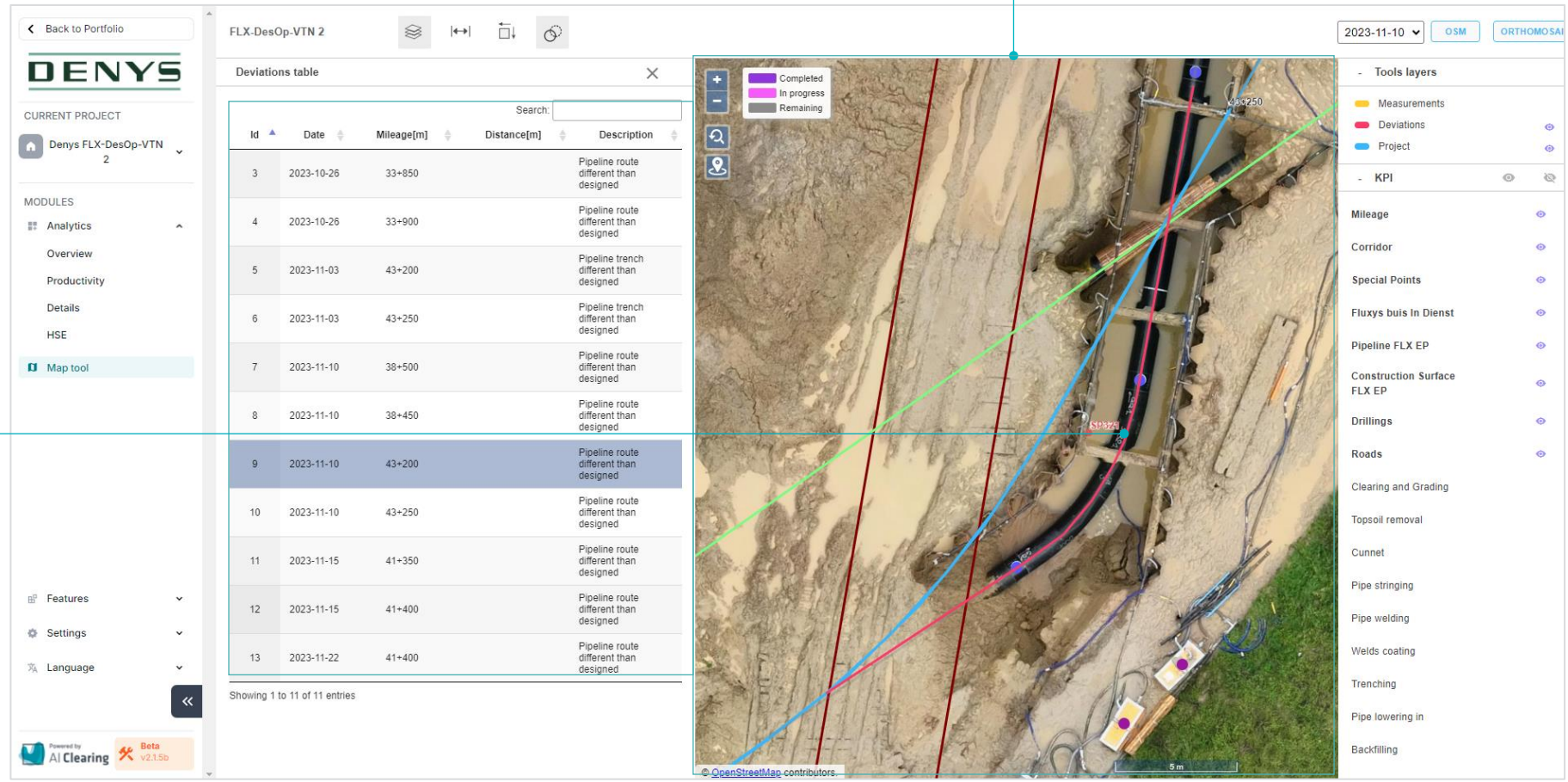
Detection of heavy construction equipment such as: HDD drilling machines, pumps, drainage machines allows the **forecast of work** in the coming days on a specific mileage section



Quickly provided information on changes that were not in accordance with the design

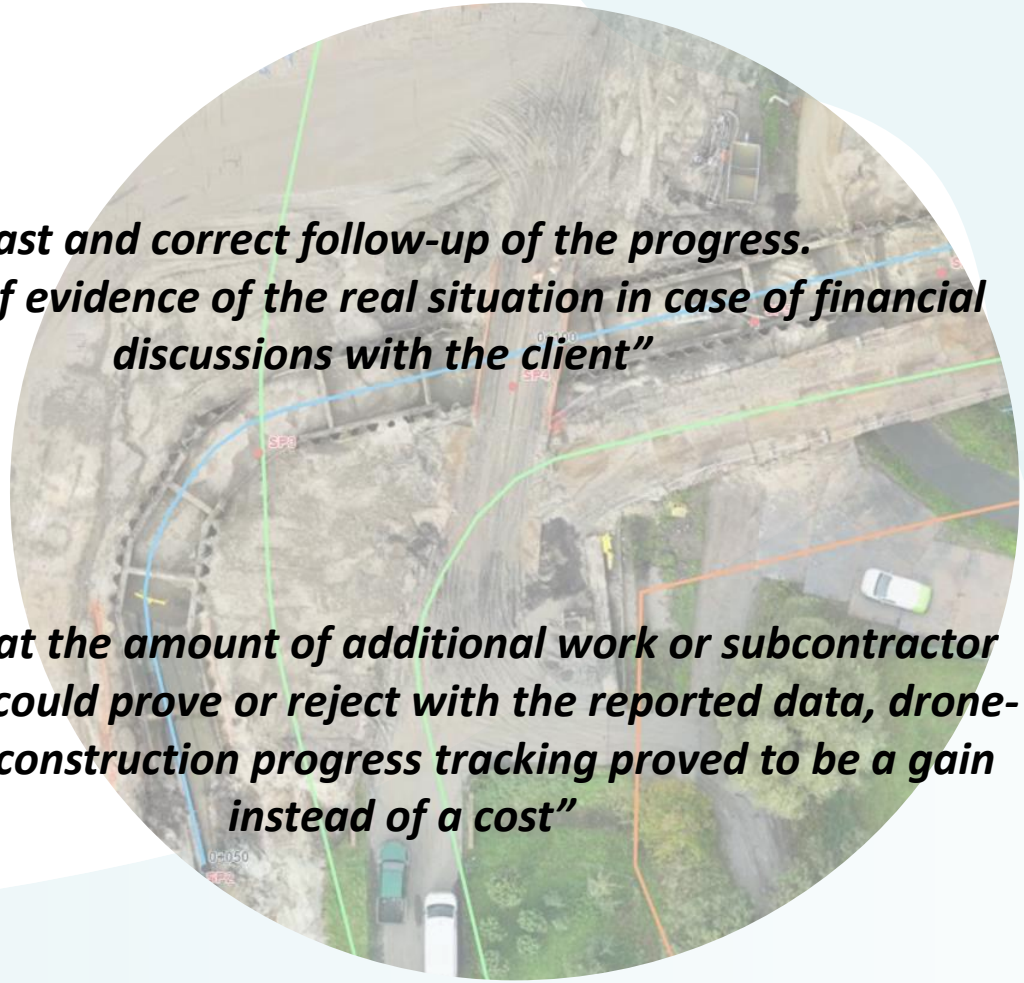
Construction deficiencies are detected and highlighted automatically.
The proper location foreseen in the design is also marked on the map (blue line)

Safety is essential
The user can easily check whether we are at the right distance from other objects (such as pipelines, and coexisting infrastructure) or prohibited areas.



Benefits of using the solution

- ✓ Strong support in quantitive surveying
- ✓ Reduced risks like deficiencies, changes, additional works, or other project-related threats.
- ✓ Real-time verification of the subcontractors work
- ✓ Valuable component of as-built documentation



„Fast and correct follow-up of the progress. Great set of evidence of the real situation in case of financial discussions with the client”

„Looking at the amount of additional work or subcontractor claims we could prove or reject with the reported data, drone-powered construction progress tracking proved to be a gain instead of a cost”

„The drone images proved to be great evidence in discussions with the subcontractors about progress, real execution, and additional work. The real proof is needed while working with claims from subcontractors and clients – it paid itself back”.

eng. Bram Taelman, Project Manager

AI Clearing

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THANK YOU

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