BIO TECH SRL

“…nu am fost primii…dar…

incercam sa fim cei mai buni…”

Oferta de servicii si lucrari

- Detectie pierderi de apa potabila din conducte
- Localizare trasee conducte
- Colectare date din teren (relevee, masuratori debite si presiuni) in vederea calibrarii retelelor de conducte
- Modelare Hidraulica
- Inspectii video in conducte

ASTERRA

BIO TECH SRL

Prezentare Generala

https://asterra.io

Utilis / ASTERRA – Despre noi

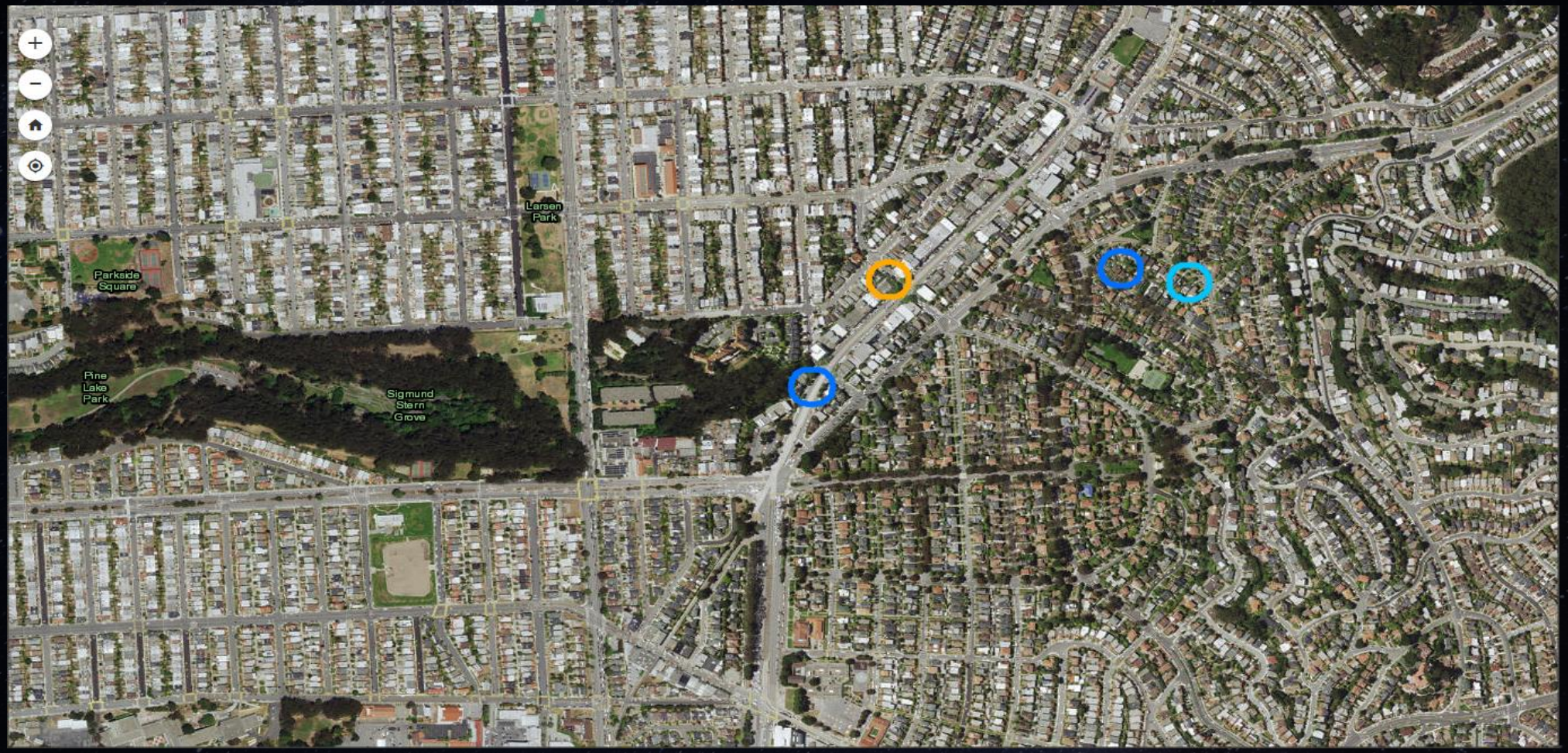
- Companie infiintata in Israel, in Feb. 2013

- Pe baza tehnologiei utilizate pentru descoperirea apei pe alte planete, dl. Lauren Guy – co-fondator ASTERRA a dezvoltat o solutie software pentru detectarea scurgerilor de apă tratata în sistemele urbane de alimentare cu apă, prin analiza imaginilor spectrale obținute prin intermediul sateliților.

- Companie fondata de investitori privati, de Fonduri de Investitii, si de Biroul de Cercetare Stiintifica al Ministerului Economiei din Israel

Solutia ASTERRA

Prezentarea globala a retelei



Procedura – ASTERRA

1

Obtinere imagine spectrala prin satelit

Imagini brute ale zonei obtinute prin SAR

2

Corecturi radiometrice

ASTERRA prelucreaza datele brute si le pregateste pentru analiza, prin reducerea zgomotului produs de cladiri si alte obiecte artificiale, vegetatie, etc.

3

Analiza algoritmica

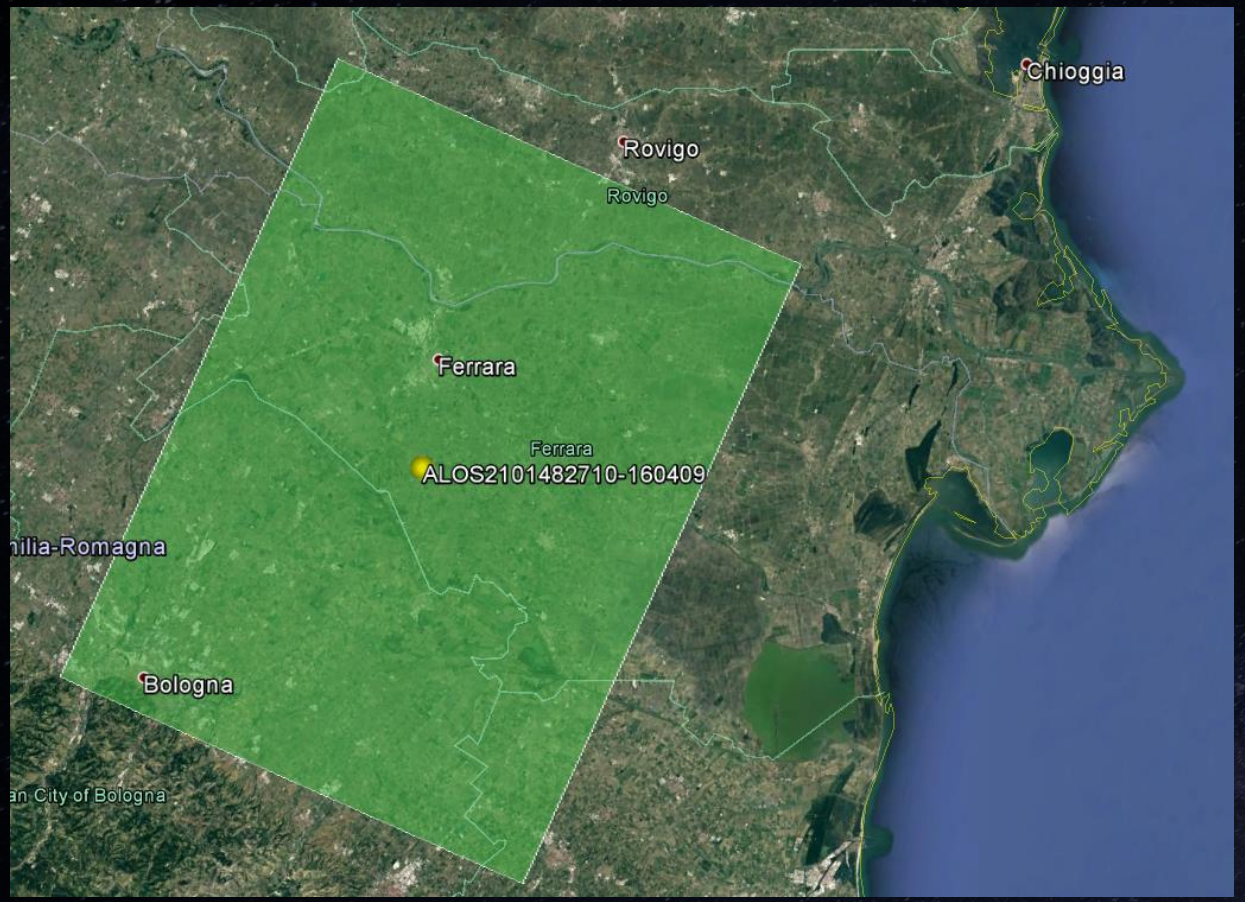
Utilizand analiza algoritmica avansata Utilis pentru a identifica “semnatura” spectrala a apei tratate si a interactiunii acesteia cu solul

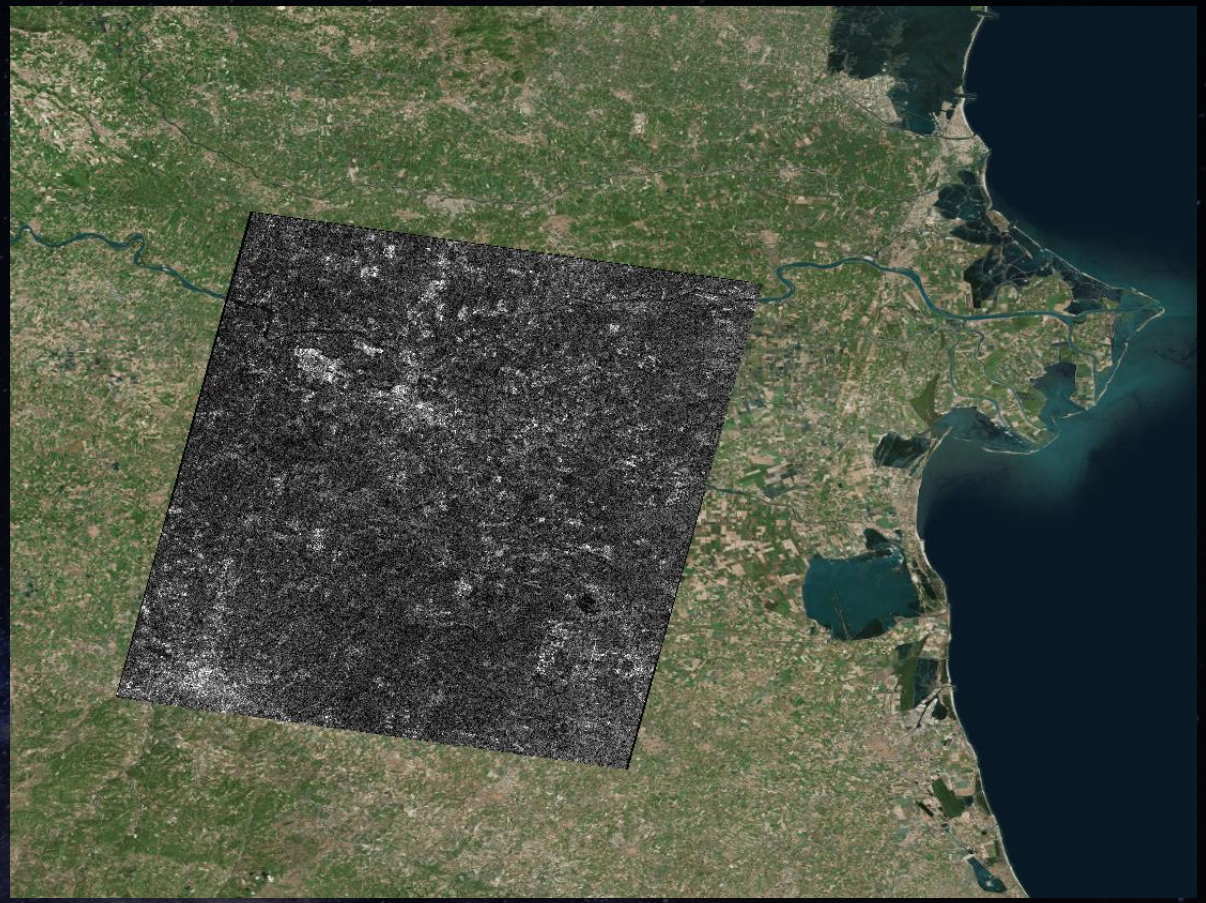
4

Rezultate

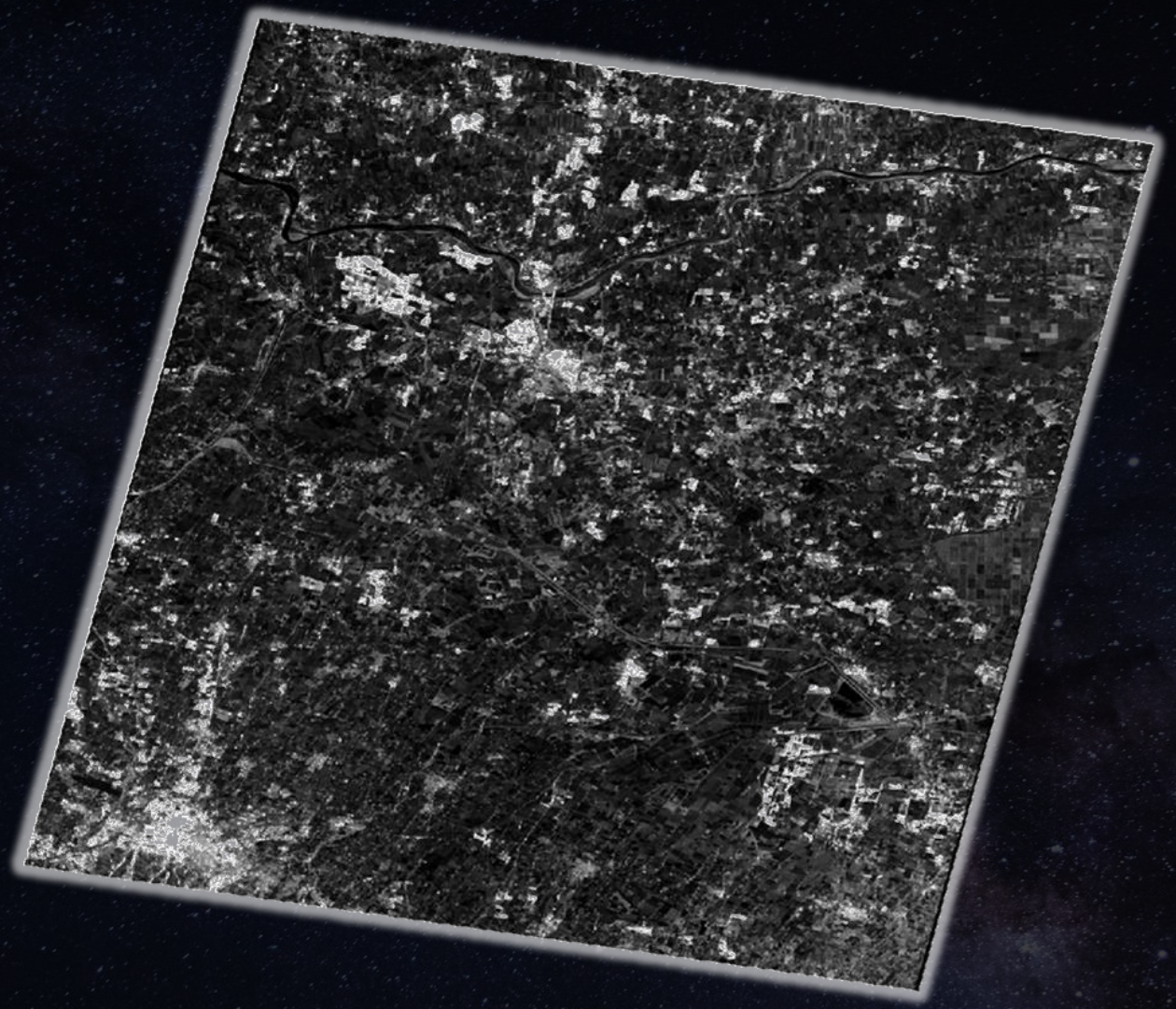
Pierderile sunt afisate pe diverse tipuri explicite de interfata GIS

Etapa 1: alegerea zonei si captarea imaginii

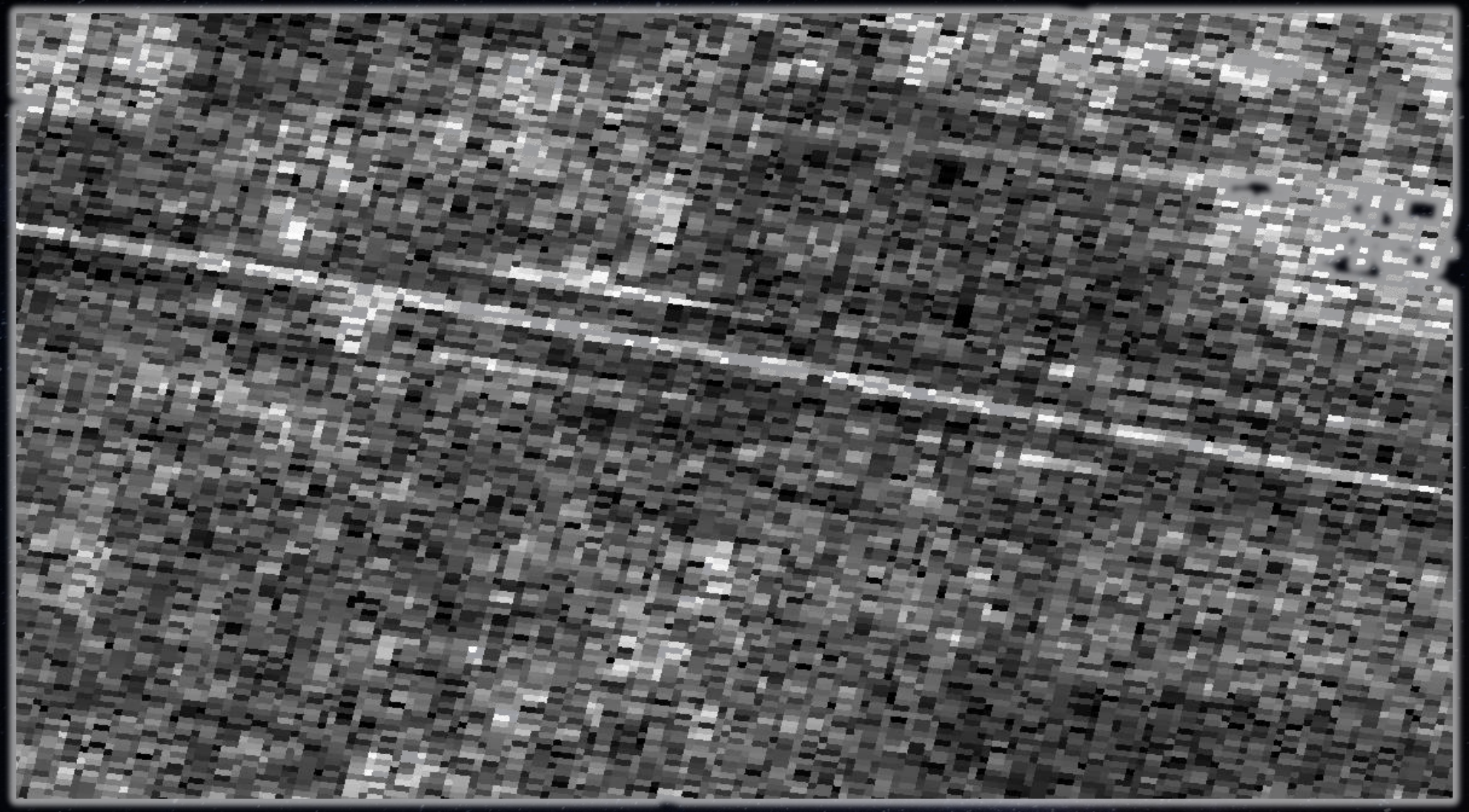




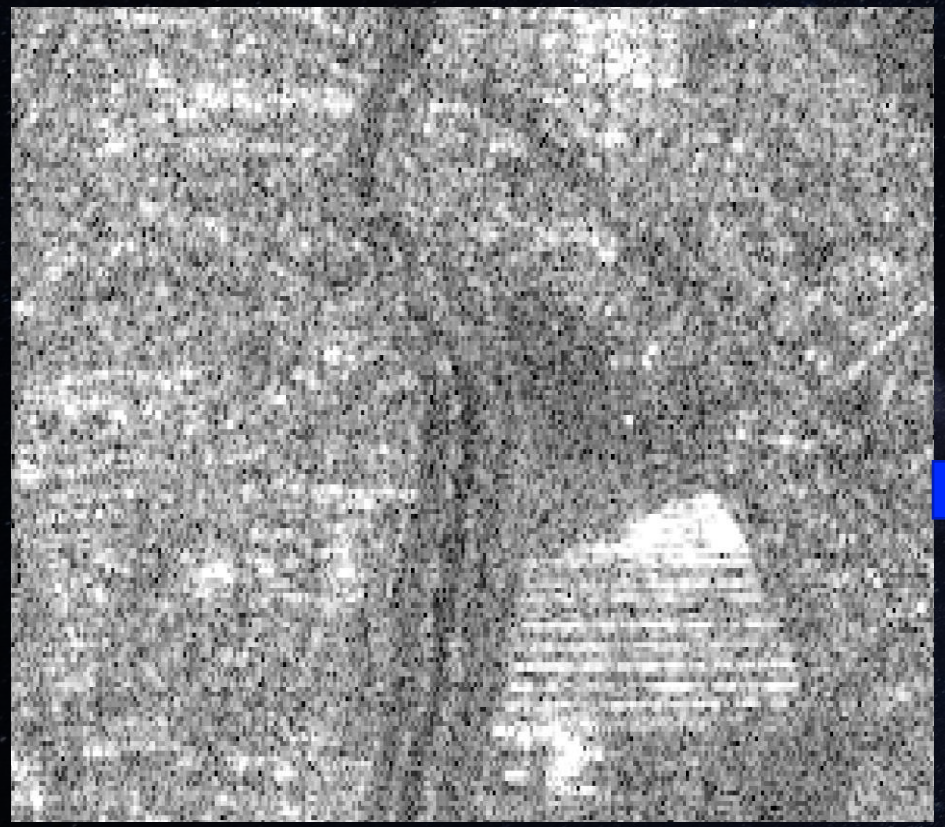
Etapa 2: Corectii radiometrice



Etapa 3: Analiza algoritmica



Etapa 3: Analiza algoritmica



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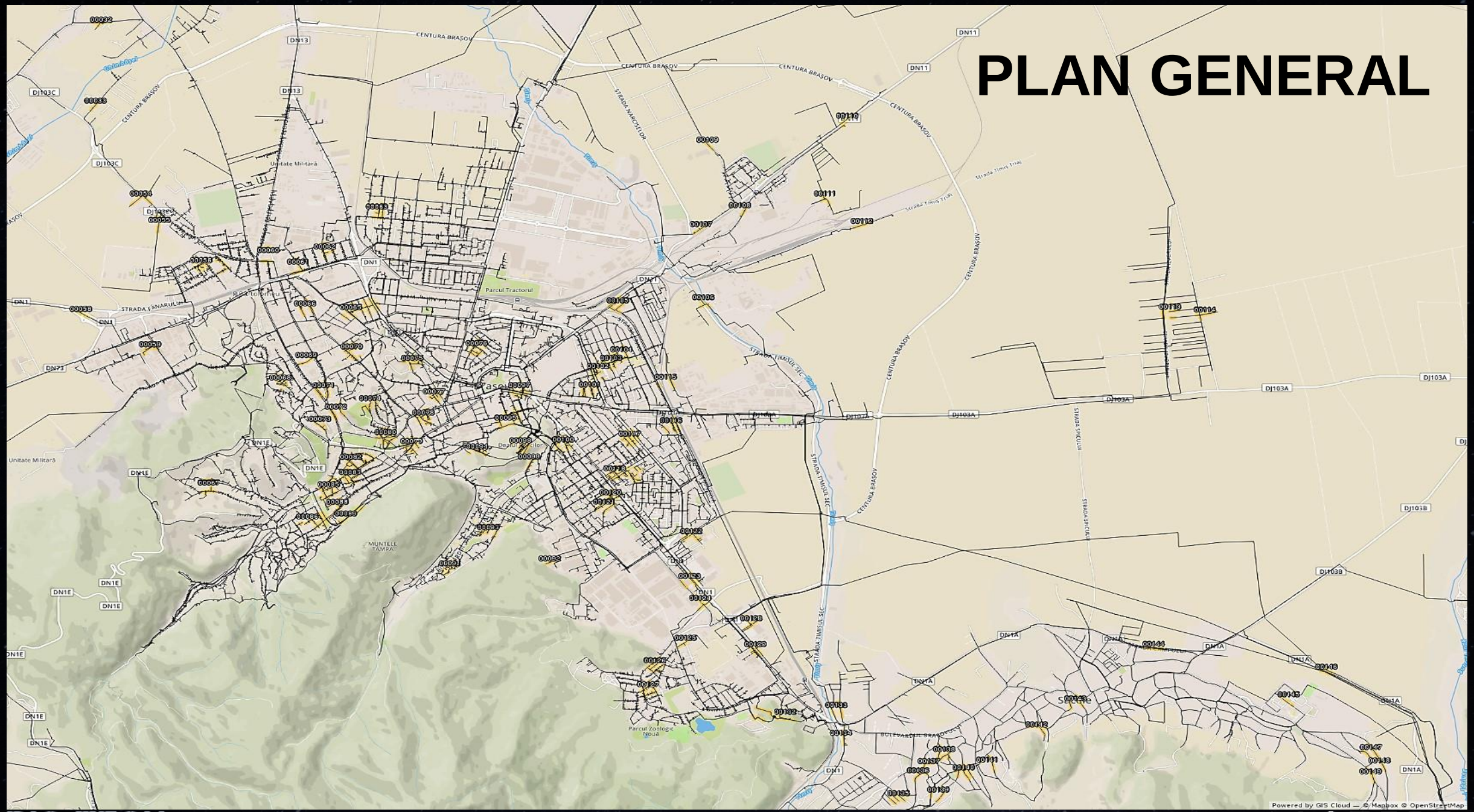
PLAN GENERAL

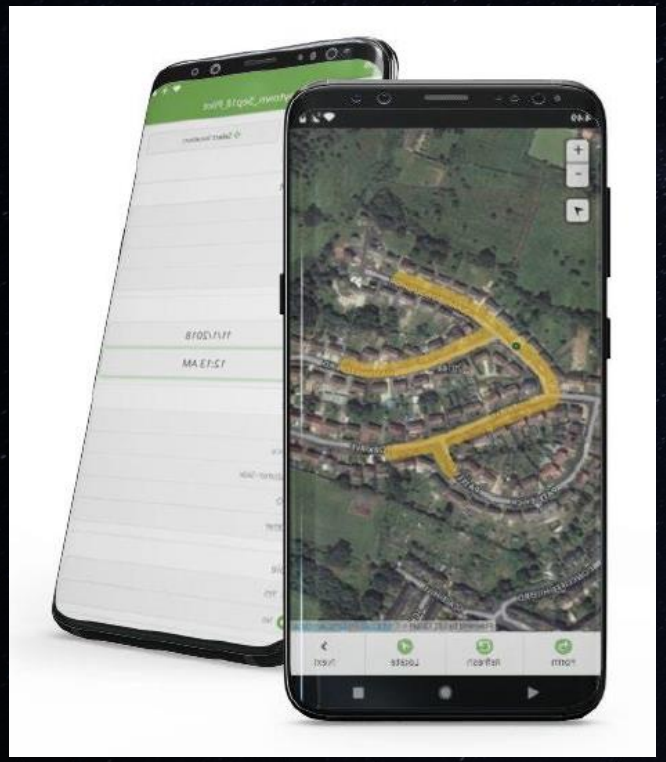


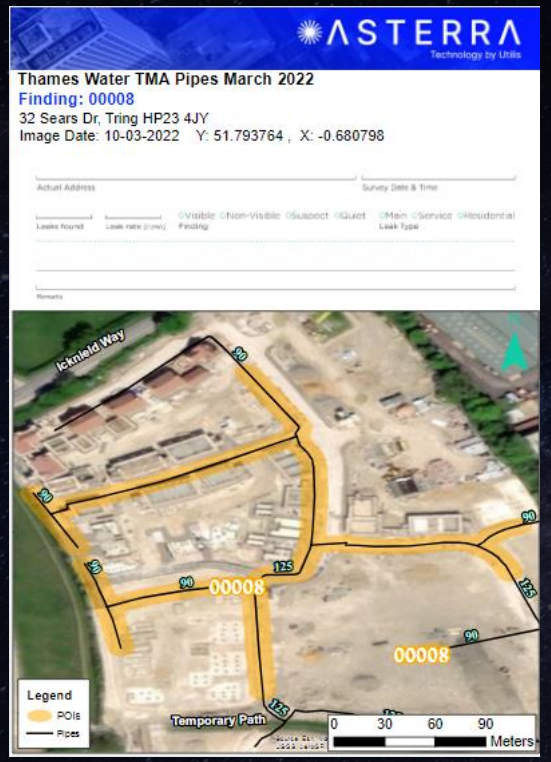
BIO TECH SRL

ASTERRA

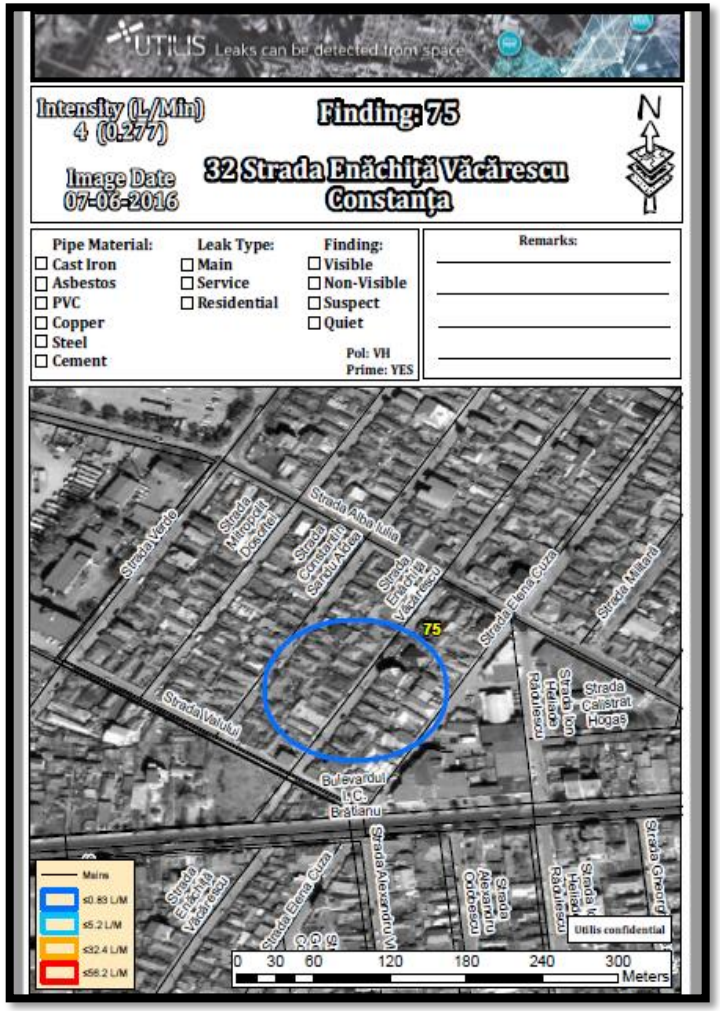
Etapa 4: Rezultate

- Fisier SHP
- Aplicatii web U-View & U-Collect / Dashboard
- Fisa pierderi





CASE STUDY



Fisa punctului de piedere

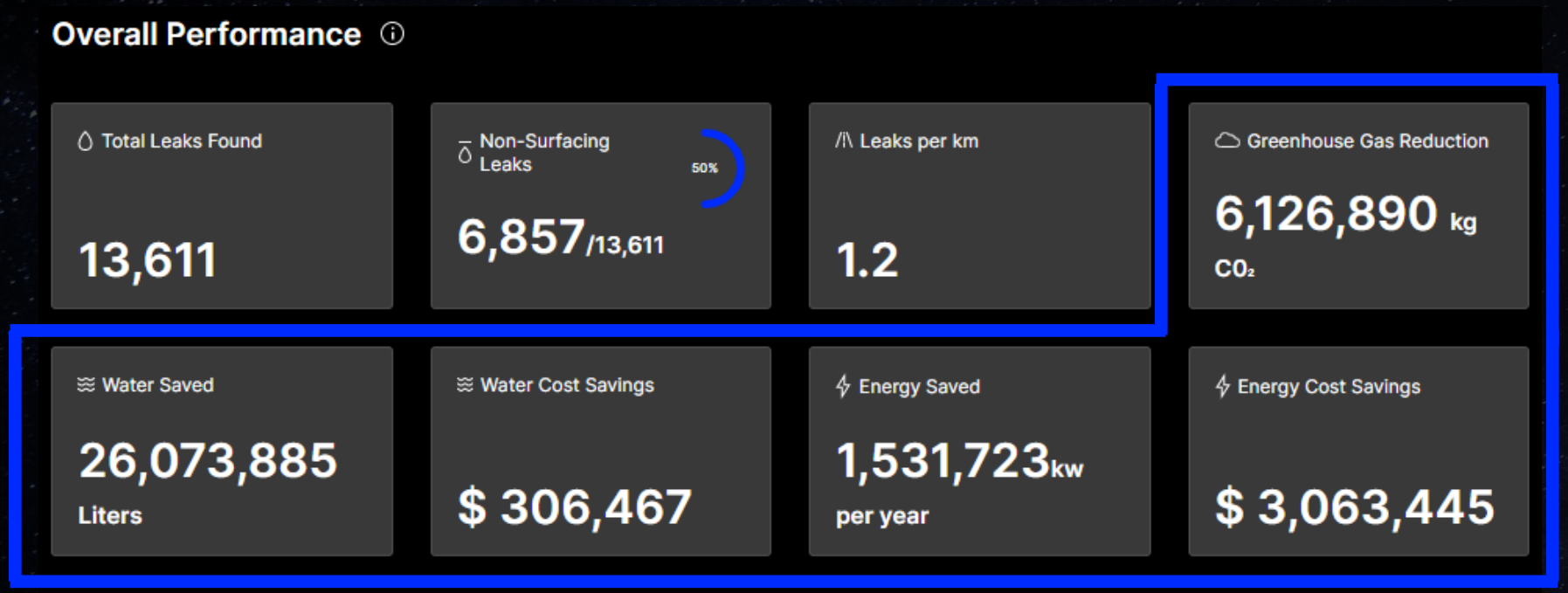
Investigatia locala

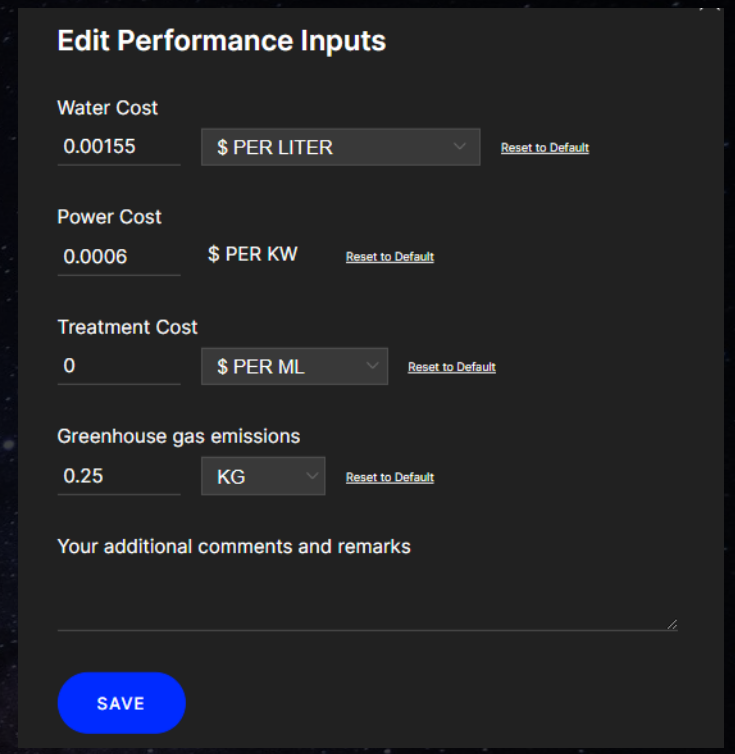
Detectare si marcare

BIO TECH SRL

ASTERRA

EO Discover





EO Discover va calcula automat valorile de performanță pe baza datelor de intrare.

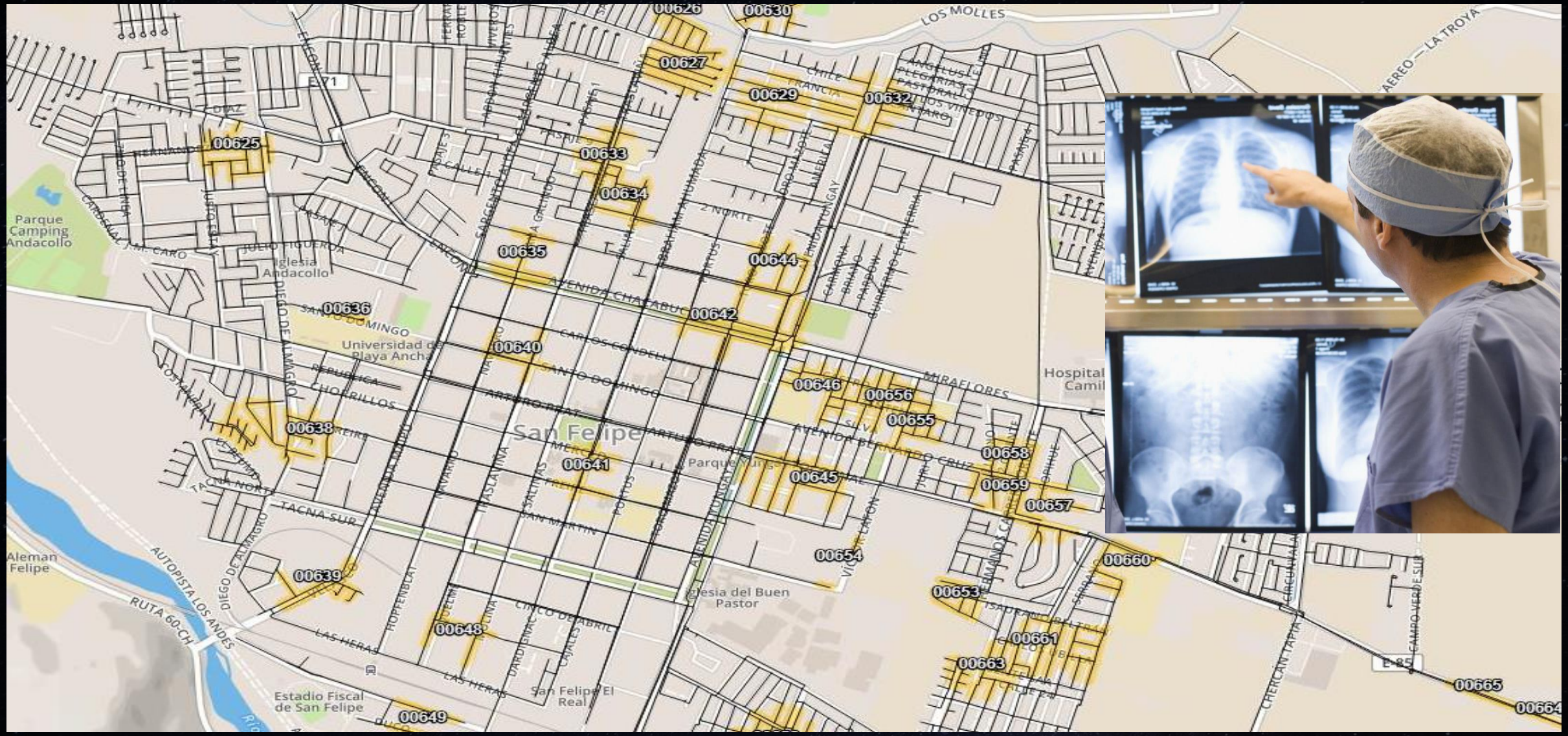
Acest instrument poate fi folosit pentru a personaliza tabelul clienților în funcție de propriile cerinte

BIO TECH SRL

ASTERRA

Detectia pierderilor fara ASTERRA

Detectia pierderilor prin metoda ASTERRA



Studii de caz, activitate media continua dezvoltare

CASE STUDY RAJA – Constanta - Studiu de caz

Este o nebunie să faci mereu şi mereu aceleaşi lucruri, dar să te aştepţi la rezultate diferite (Albert Einstein)

“Compania RAJA este o companie modernă deschisă către tehnologie si inovaţie, un pionier în ceea ce priveşte implementarea cu succes a unor concepte inovative. Compania UTILIS din Israel a inovat şi a brevetat tehnica de localizare a pierderilor de apă cu ajutorul sateliţilor.
Operatorul regional RAJA a testat cu succes această tehnologie în aria de operare a oraşului Constanţa. După scanarea arealului am primit de la compania UTILIS o hartă cu peste 200 de puncte cu posibile avarii ascunse.
Rezultate obținute in 2 luni:
- peste 50 km rețele inspectate
- peste 45 avarii descoperite acustic (cca 1,0 avarii/km rețea)
- calculul eficienței în cazul cel mai pesimist:

1,5 bari presiune, diametru avarie 5mm, pierderi pe an/avarie – 5.000 mc; TOTAL – 225.000 mc

Utilizând această tehnologie, am scanat peste 600 km de reţea în doar trei luni (inclusiv perioada de inspecție), personalul specializat facând verificări doar pe cca 50-60 km în punctele indicate cu indicii de pierderi.”

Director General Raja Constanța
Inginer Aurel Presura

BIO TECH SRL

ASTERRA Technology by Utilis

(text extras din revista DETECTIVII APEI PIERDUTE – Octombrie 2016 / an VI / nr.9)

CASE STUDY Bucuresti - Apa Nova

În iulie 2017, Apa Nova a realizat un studiu pilot cu Utilis, o tehnologie de detectare a scurgerilor prin satelit (cu ajutorul specialistilor firmei Bio Tech SRL, reprezentant al Utilis în România), pentru a evalua impactul pe care îl are asupra programului lor proactiv de detectare a scurgerilor de apa potabila. Rezultatele au fost pozitive și sunt discutate a se face in mai multe etape.

"Utilis ne-a permis să găsim scurgeri care ar fi fost greu de găsit altfel. În câteva zile de lucru am găsit câteva scurgeri semnificative, estimate la 250.000 mc pe an, ceea ce reprezintă aproximativ 0,8% din pierderea curentă a apei noastre. Ne-am convins despre potențialul de utilizare a acestei tehnologii, fiind complementare metodelor noastre existente și, în plus, includerea în programul nostru de reducere a emisiilor de NRW (Non Revenue Water). În faza următoare, vom combina datele Utilis cu alte straturi de date pentru a integra mai bine această tehnologie în procesul nostru, făcând ca verificarea acustică a câmpului să funcționeze mai eficient."

Valentin Zaharia
director de optimizare a sistemului de alimentare cu apă și canalizare
Apa Nova – Veolia.

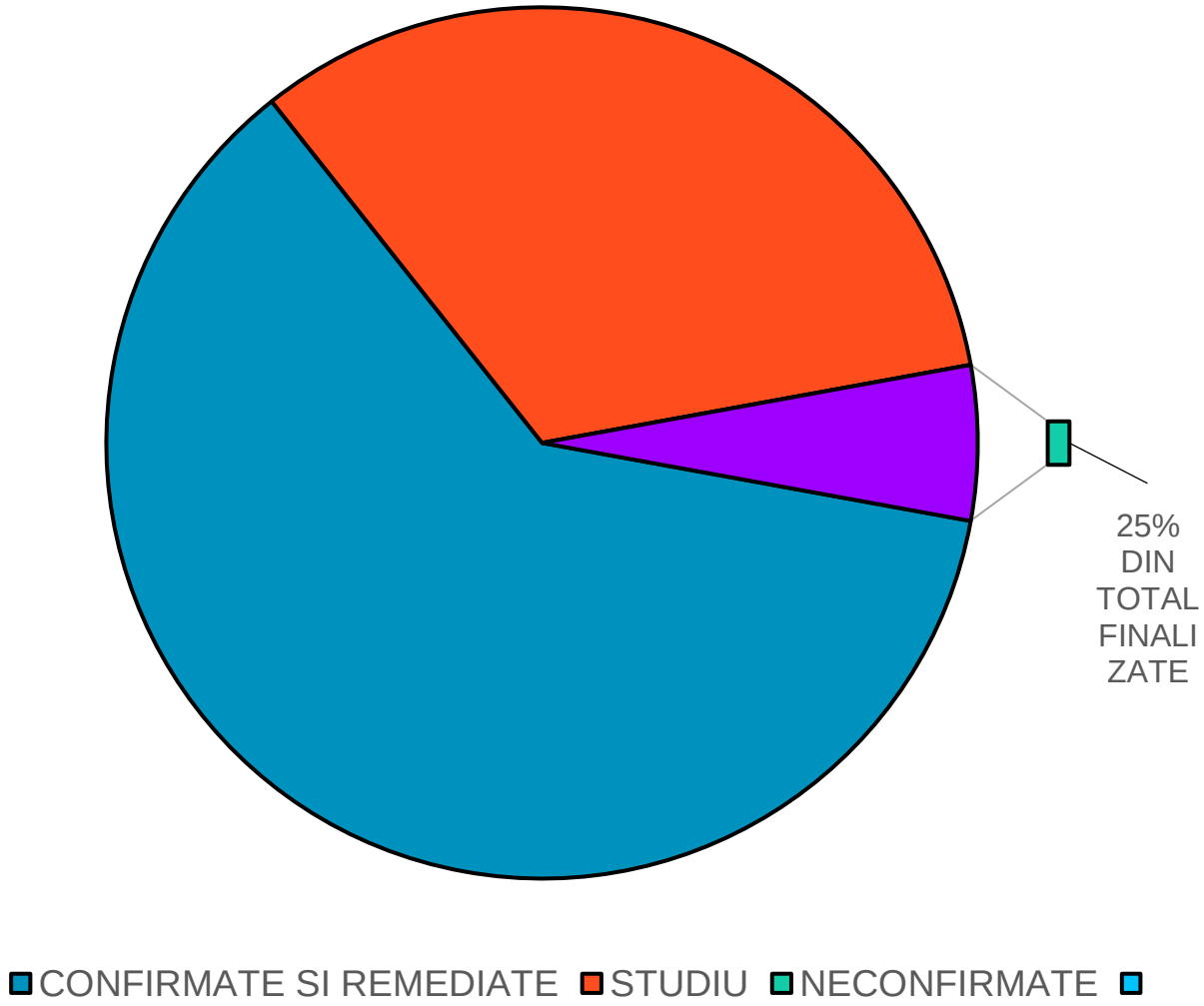
BIO TECH SRL

ASTERRA

DIN CELE 67 POSIBILE DEFECTE S-A INTERVENIT IN 28 DIN PUNCTELE FURNIZATE

28 DE LUCRARI, DIN CARE:

- 15 AU FOST IDENTIFICATE SI REPARATE
- 8 SUNT IN STUDIU
- 5 NU AU FOST CONFIRMATE- SE VOR RELUA MASURATORILE DUPA TERMINAREA TUTUROR LOCATIILOR FURNIZATE
- DIN TOTALUL LUCRARILOR FINALIZATE, AVARIILE NECONFIRMATE REPREZINTA 25%



Constatările comisiei de recepţie la terminarea lucrărilor

Au fost localizate un număr de 83 posibile avarii.

Pana la data de 01.10.2018 au fost verificate un numar de 54 locaţii ,s-au localizat 36 avarii care au fost remediate.

Cantitatea de apa pierduta estimata la aceste 36 avarii este de 1365 litri/min sau 81.9 mc/h sau 1.965 mc/zi

CASE STUDY

Exemplu – Craiova – Compania de Apa

CASE STUDY Exemplu –Tg. Mures-Compania de apa AQUASERV

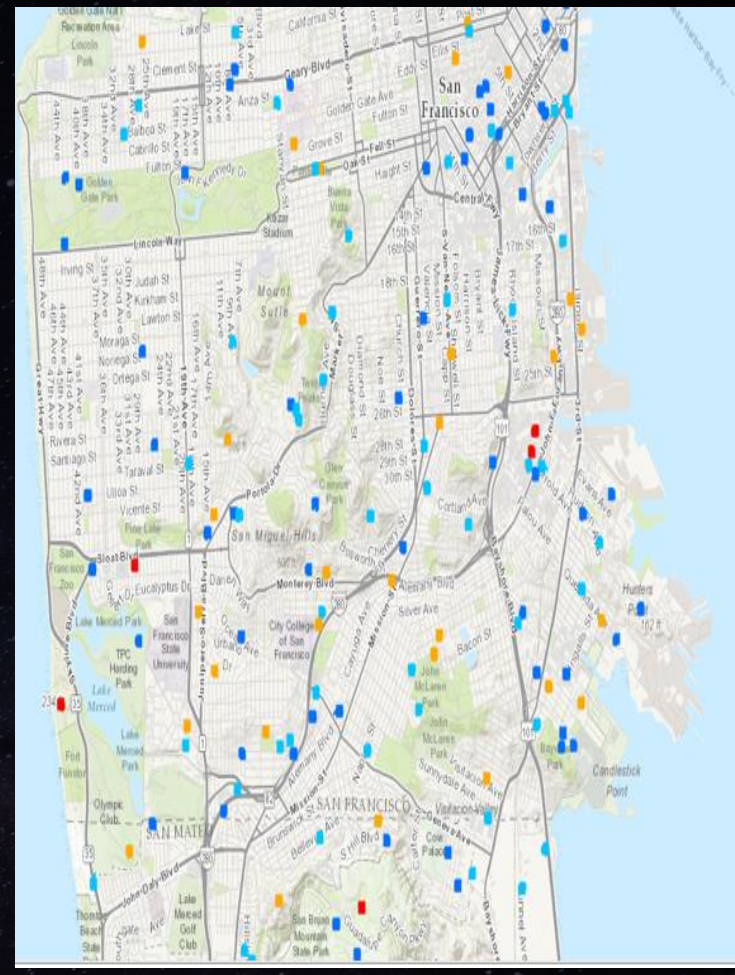
CASE STUDY S.C. APA CANAL 2000 S.A. PITESTI – SCOALA DE VARA

Lucrari executate in Romania 2016-2021

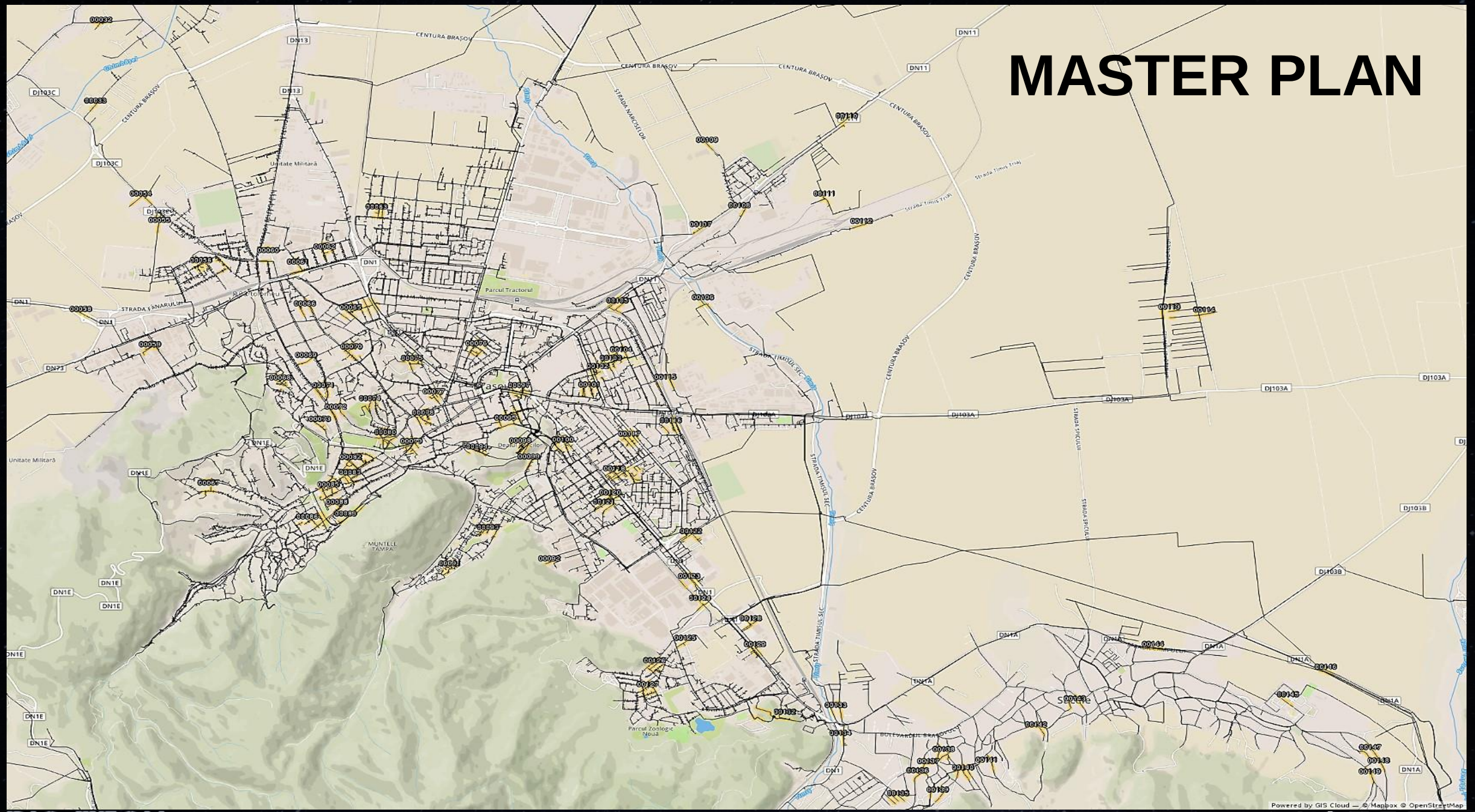
- R.A.J.A. Constanta – pilot 2016 si 2 scanari 2018
- C.A. OLTENIA – 1 scanare 2017
- APA NOVA BUCURESTI – 5 scanari (2 in 2017, 1 in 2018, 2 in 2021)
- AQUASERV S.A. TARGU MURES – 1 scanare 2017
- APA CANAL 2000 S.A. PITESTI – 1 scanare 2018 (scoala de vara)
- COMPANIA DE APA BUZAU – 1 scanare 2018
- COMPANIA DE APA BRASOV – 1 SCANARE 2019
- COMPANIA DE APA SOMES S.A. CLUJ – 1 scanare 2019 (scoala de vara)
- COMPANIA APA CANAL S.A. SIBIU – 1 scanare 2019/2020

Avantajele folosirii procedeului ASTERRA

- Nu necesita pregatiri si investitii initiale
- Reduceri semnificative ale costurilor cu forta de munca si eficientizarea executiei (directionarea la locul pierderilor)
- Intreaga retea este monitorizata de cateva ori pe an
- Punctele cu pierderi din conducte sunt localizate cu usurinta
- Pierderile majore sunt identificate rapid, eliminand pagubele materiale si financiare
- Studiind harta generala se pot trage concluzii despre conditia conductelor (posibil ca o intreaga sectiune de conducta sa fie necesar a fi inlocuita)
- Se pot identifica zone cu un mare numar de defecte – concluzia fiind ca trebuie cautata cauza (presiune mare, corodare conducte)



MASTER PLAN



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ASTERRA

PE BAZA EXPERIENTEI ACUMULATE
TABEL COMPARATIV

	INSPECTIE ACUSTICA STANDARD	INSPECTIE ACUSTICA CU AJUTORUL ASTERRA
LUNGIME DE CONDUCTA INSPECTATA	200 KM	200 KM
LUNGIME REALA DE CONDUCTA INSPECTATA (PARCURSA)	200 KM	50 KM
ZILE NECESARE INSPECTIEI (2 ECHIPE)	20 ZILE	6 ZILE
DEFECTE GASITE	22	62

TEL AVIV – SEMINAR ANUAL ASTERRA

ASTERRA

BIO TECH SRL

Multumim!

https://asterra.io

aganova

Technology and innovation at the service of water

Who are we?

We are specialists in the development of technologies to minimize Non-Revenue Water. (NRW)

We develop and deliver **easy-to-operate** and **cost-effective** in-line solutions for the evaluation of large diameter pipelines.

Our mission is to contribute to the mitigation of water scarcity by minimizing losses in water networks through our technologies.

+2 500 km
inspected with the Nautilus system

+800 leaks
identified

+25,000 l/min
recovered with Nautilus and Jabega

Presence in
+60 countries

Why large diameter pipes?

- **It tends to age.**
- **Imprecise planimetry.**
- **Less digitalization than distribution networks.**
- **It requires specific tools for its supervision.**

Technologies for leak detection and digitization of results

aganova

Nautilus System

Solution for the diagnosis and detection of leaks in large diameter networks from inside the pipeline. (in-line)

Jabega System

Online CCTV for detailed analysis of specific points of interest in the network in real time

Nemo Platform

Advanced digital analytics platform that allows you to track inspections in real time and present the results.

What does it detect?

Identifies leaks with a margin of error of 1 meter.

SMALL LEAKS

With loss flows greater than 0.005 l/s

AIR

Bubbles and air pockets that can cause explosions if left uncontrolled

ANOMALIES

Incidents inside or outside the pipeline from known or unknown sources

Nautilus System

Developed by aganova

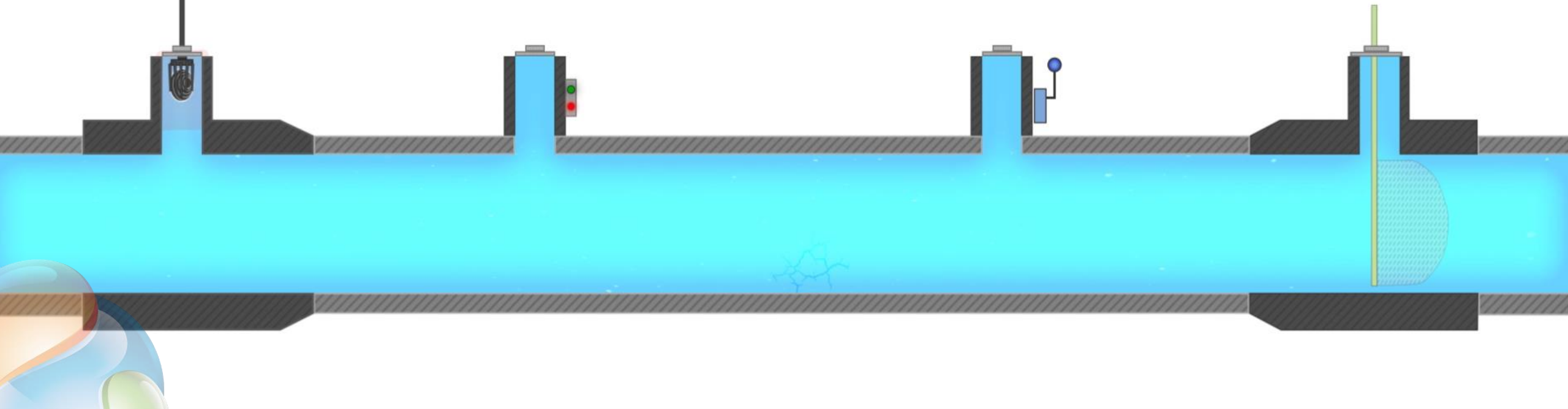
How does it work?

Nautilus System

Developed by aganova

3 PHASE INSPECTION:

1. Insertion
2. Navigation
3. Extraction



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Nemo Platform

Advanced digital analytics platform that allows you to track inspections in real time and present the results.

Jabega System

Visual and acoustic technology to obtain detailed information from the interior o the pipe.

VISUALIZATION

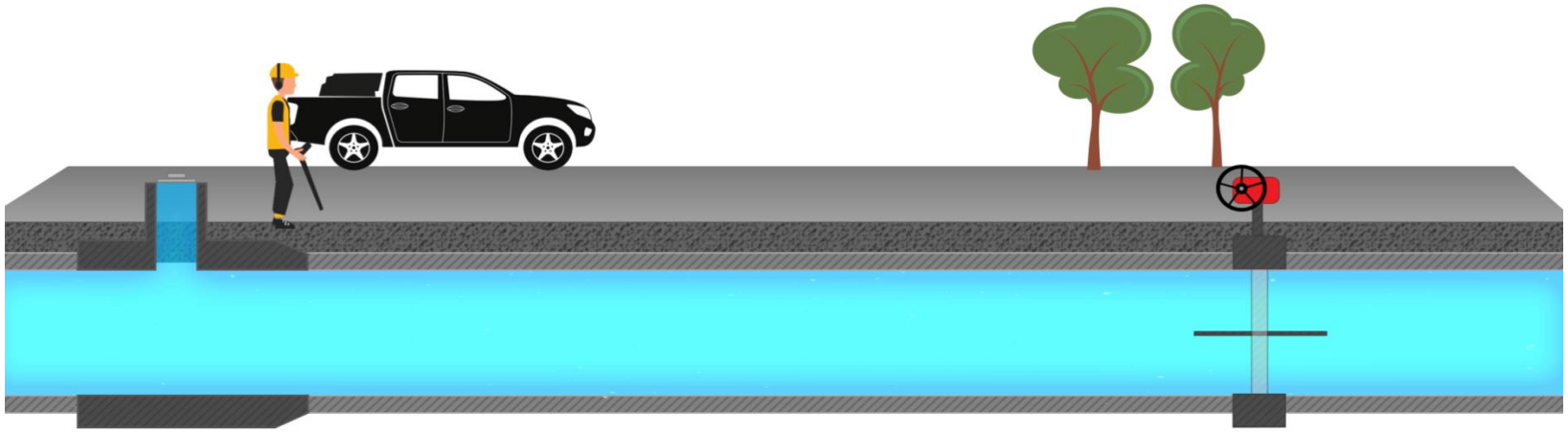
Pipe visualization system from the inside for the detection and identification o anomalies.

ACOUSTIC RECORDING

It has a high intensity hydrophone that allows acoustic recording inside the pipe and, therefore, the detection o leaks and existing anomalies.

TRACKING

It allows to know the route o the pipe to be able to follow Jábega from the surface.



Success story

Constanța
Romania

Nautilus System

Success story
Constanța - Romania

SITUATION

RAJA S.A, the water utility of Constanța, wanted to obtain detailed **information of the condition of an 8,8 KM** potable water transport pipeline section. Due to the **aging of this pipeline** the client suspect that they could be **potential leaks** resulting in **NRW water losses.**

Knowing the type o damage and positioning was **impossible without the appropriate technology.**

Given the needs of the client, Aganova together with our local partner Bio Tech, proposed to carry out an analysis o the network with the **Nautilus system**, an in-line neutrally buoyancy technology specifically designed for the inspection of large diameter pipelines.

Success story
Constanța - Romania

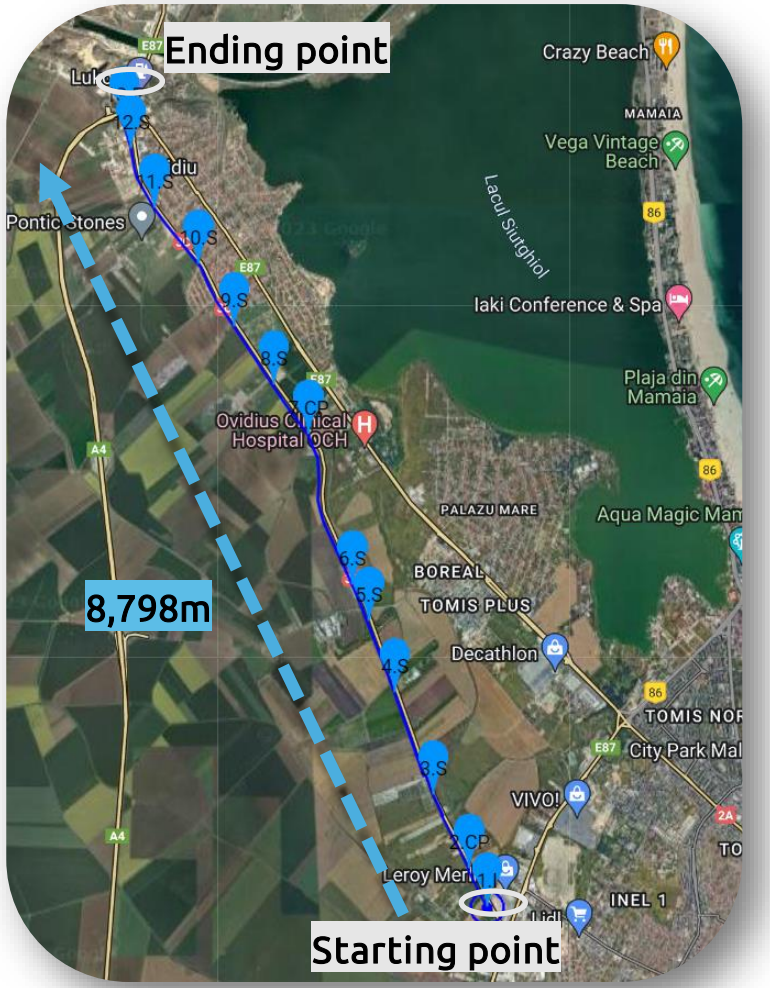
RAJA S.A. CONSTANȚA
BIO TECH SRL

NETWORK INFORMATION

The section to inspect consist in 8.8 KM run potable water pipeline of DN1000 mm that runs from near the Leroy Merlin store, up north to the A4 highway intersection.

Inspection date	Distance	Diameter	Material
24/08/2023	8,798 m	DN1000	Prestressed concrete & steel

Pressure	Average speed	Insertion point	Extraction point
1 bar	0.44 m/s	Gate valve DN150	Gate valve DN100



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Success story
Constanța - Romania

RAJA S.A. CONSTANȚA

BIO TECH SRL

INSERTION

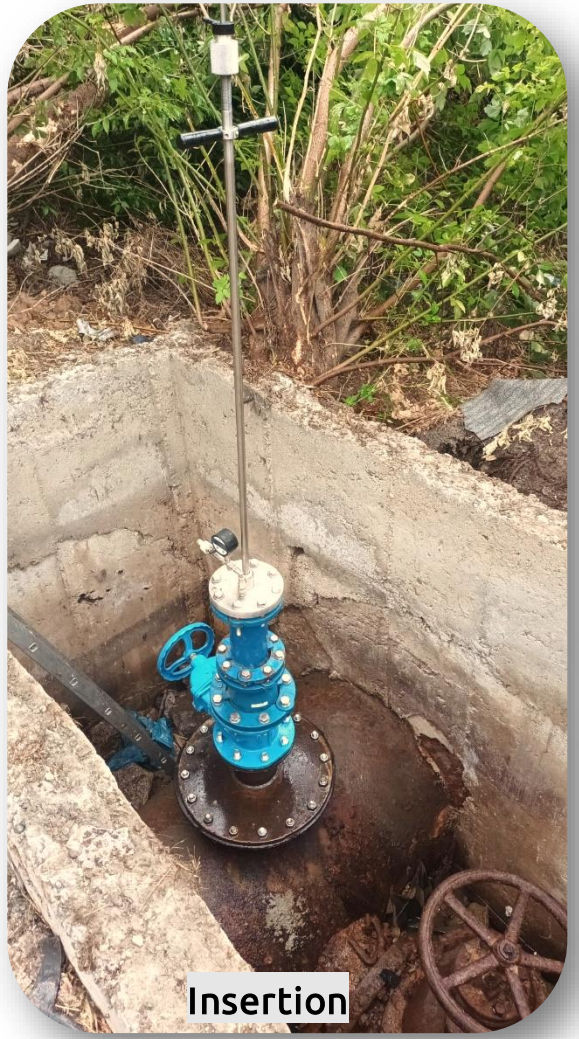
Operating gate valve DN150 mm. Pressure chamber with insertion clamp installed and Nautilus deployed according to planning schedule.

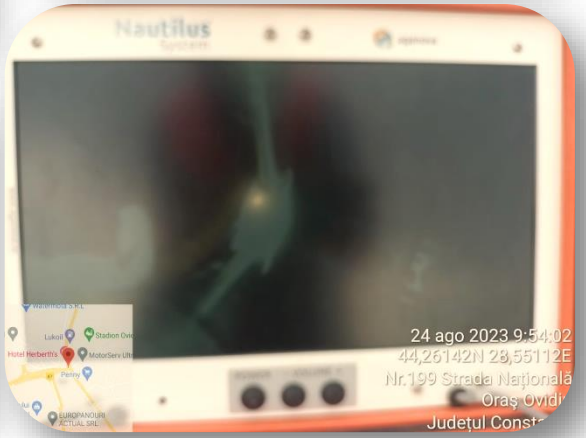
SYNCRONIZERS

11 synchronizer have been prepared along the 8,8KM pipeline run. Each one at an AVG of 800 meters from each other to achieve maximum accuracy.

EXTRACTION

Installed on operating gate valve DN100 mm. Net position confirmed with in-line camera footage.





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Success story
Constanța - Romania

RAJA S.A. CONSTANȚA

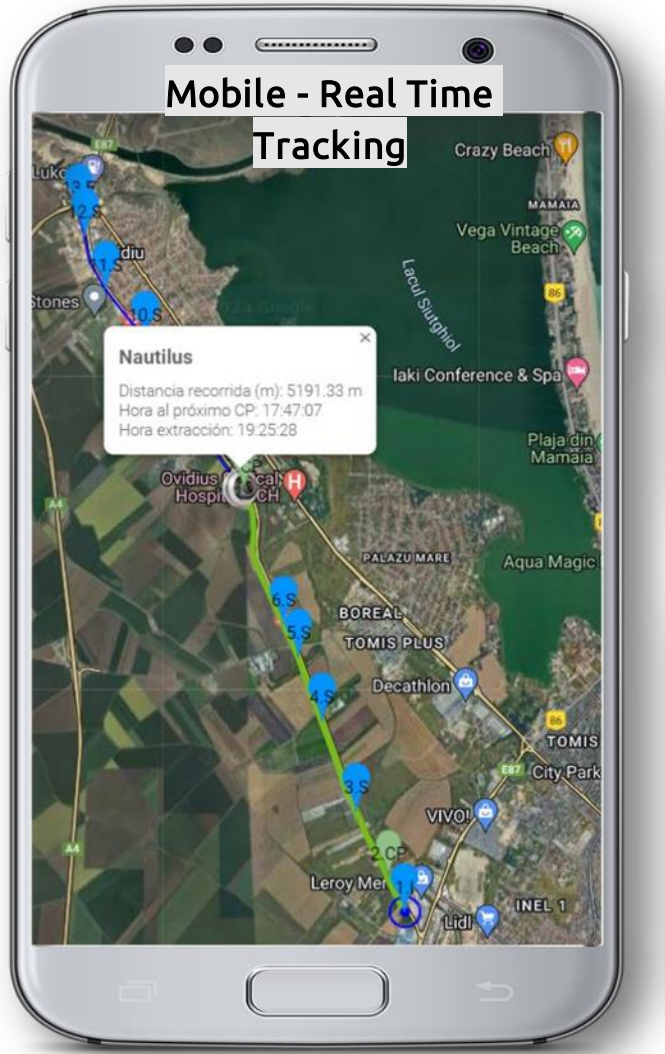
BIO TECH SRL

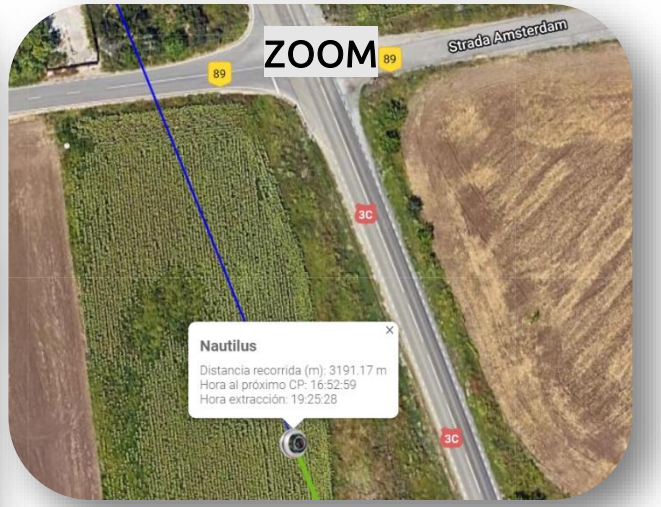
NAVIGATION

Nautilus **started navigation at 13:21**. Confirmation signal received thought CP1 and later at **CP2 at 17:47** achieving 60% (5191 meters) of the total navigation. **ETA to extraction point at 19:25.**

Nautilus has **arrived at 19:32** at the extraction point as planned.

Total navigation 6 hours, 11 minutes for 8,8KM run at 0,4 m/s AVG water speed.





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Success story
Constanța - Romania

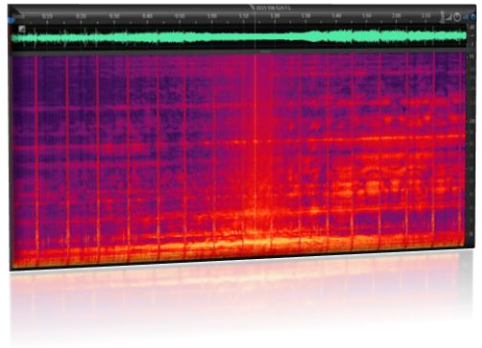
RAJA S.A. CONSTANȚA
BIO TECH SRL

Nemo Platform

PRELIMINARY RESULTS

After retrieving Nautilus at the extraction point. All the information captured was sent to our data analysis department in Málaga HQ.

After 3 days analysis preliminary report shows a total of **15 incidents** found, **12** of them are **leaks** which **5 are big leaks.**



	Leak			Air		Anomaly	
Incident level	F1	F2	F3	B1	B2	A1	A2
15 Incidents	**5**	**1**	**6**	**1**	**1**	**1**	**0**

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BIO TECH SRL

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Thank you!