



OUR FOUNDING TEAM



+65 deeptech created

+346 Intellectual Property

+45M€ invested



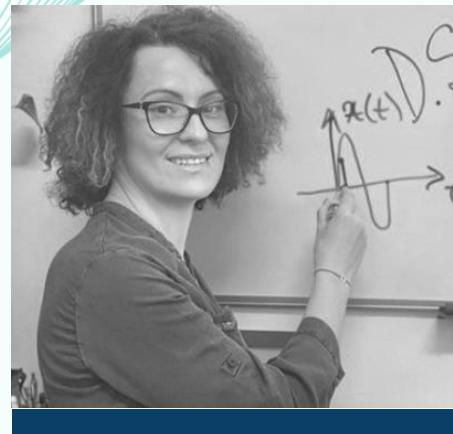
Dr. Cornel IOANA

President and CEO

+45 international papers

7 patent filed as inventor

3 deeptech start-ups created



Dr. Angela DIGULESCU

CTO

+30 international papers

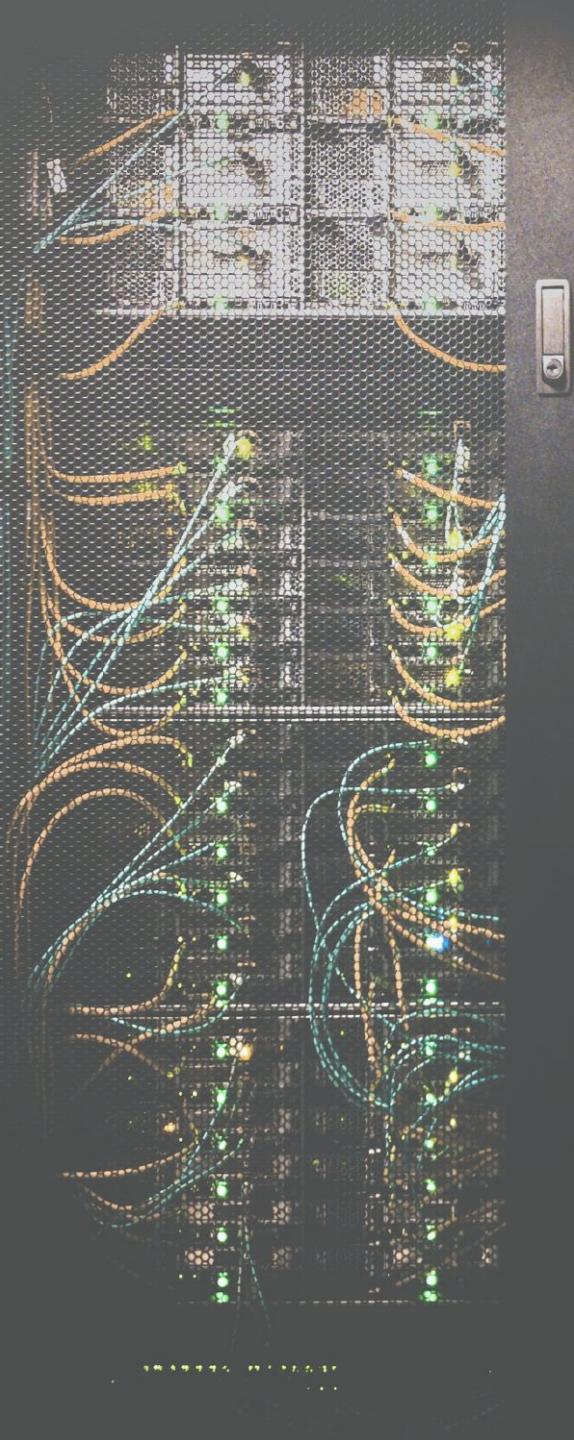
expert in the fields of non-stationary

and transient signal analysis





02



CONTEXT

The monitoring of an electrical power grid is a crucial operation for maintaining the security of energy supply, vital for all economic activities (industry, transport, telecommunications, etc.) and social activities (energy supply to individuals).



CHALLENGE



The major issue in the field of monitoring of electrical installations is the early detection (we will call now as **early warning**) of the sources of problems which, if not detected, will cause power failures with significant losses.

Continuous monitoring of electrical networks and the precise location of faults are the key to meeting this challenge.

The current strong pressure for underground cable accentuates this phenomenon. Corrective monitoring means digging up several hundred meters of off-grid cable to intervene and replace it. And that is a very strong constraint for the operators of the electricity distribution network, all around the world.

2,200 \$B

Of losses each year due to electrical failures | Worldwide

+ 200 M€

Of losses each year due to electrical failures | France, Enedis

37'

That losses corresponds to 37 minutes of outages | France, Enedis

04

INSPECTION

PAIN

Critical power cables networks are very expensive to maintain. Power managers and electrical installations are faced with an aging network that must withstand bi-directional stresses, from intermittent energy production. Globally, we have determined that current inspection budgets only allow for the inspection of about **1%** of the network, which explains the high outage times with proportional losses. In this context of technical difficulties not yet overcome, network managers call upon punctual inspection means, offline (requiring to turn off the inspected cable from the network) with a high cost of 1826 €/km.





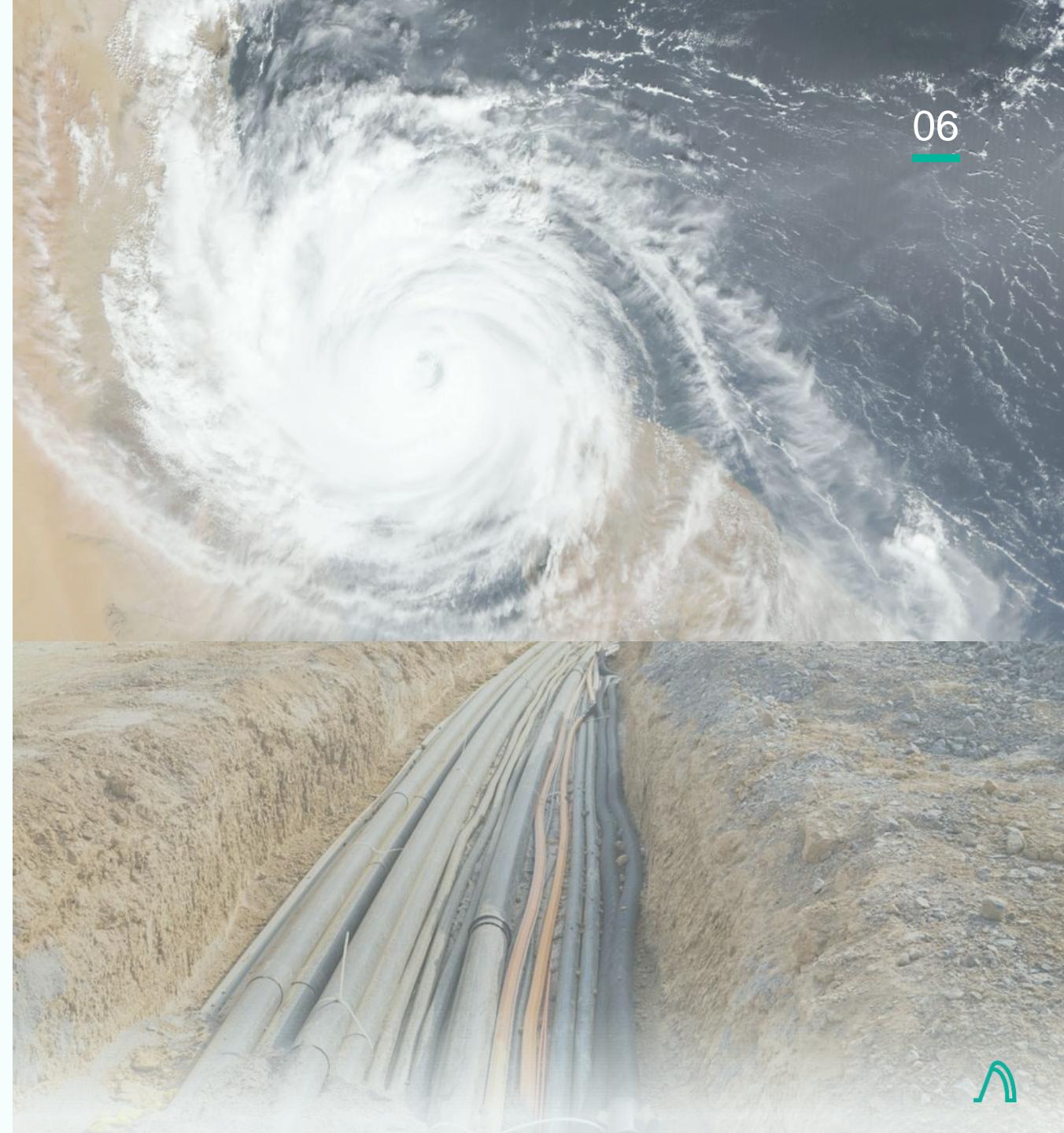
GRID GOES UNDERGROUND

In that picture, you can see the Dixie Fire, the largest wildfire Northern California has faced in 2021. PG&E, the company which distributes electricity and gas to 5.1 million customers in that area in the USA, was under fire during that tragical fire episode. Criticism targeting the company say that power line suspected in Dixie fire was set to be buried underground in safety move. The electricity distribution networks are subject to the vagaries of the climate and burying them is the chosen solution.



GRID GOES UNDERGROUND

The network managers and electrical installations are confronted with a hybrid network (overhead and underground) and in full adaptation to the energy mix being developed with an increasing orientation towards predominantly underground networks. Climate change is driving the need to move to 100% buried lines. This is to avoid the increasingly harmful climatic effects with frequent power outages as we can see with each storm.



WE TARGET CRITICAL CABLES

Altrans Energies targets in priority the cables that we will call here "critical cables". This type of cable includes old installations that have already experienced failures or are in strategic and difficult to access places.



Cables that have already been defective in a near past



Cables that are positioned in hard-to-reach or dangerous areas



Aging cables that were installed a long time ago



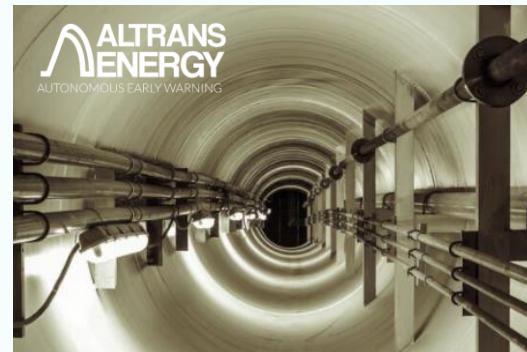
WE TARGET CRITICAL CABLES

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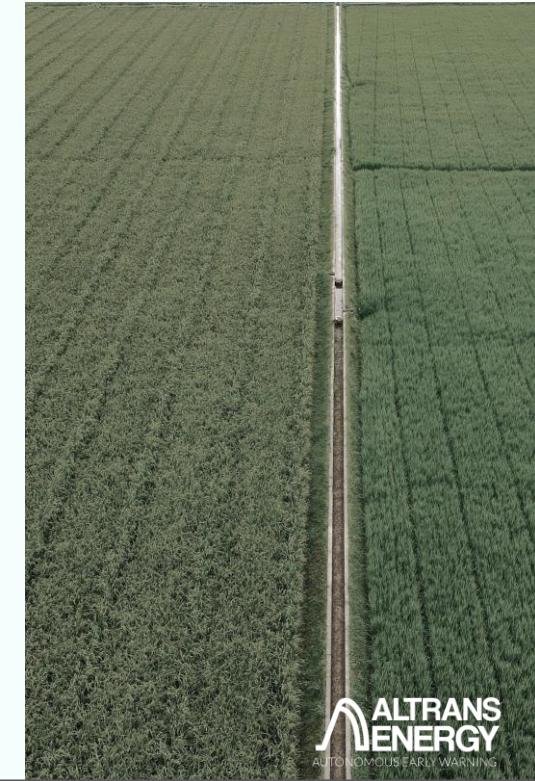
aboveground



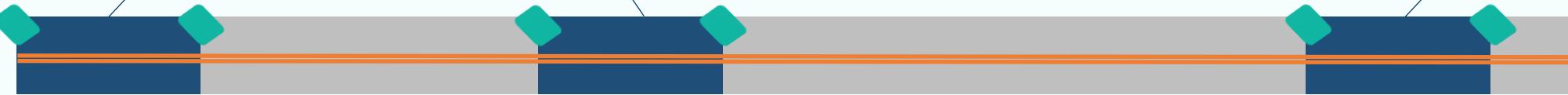
Underground cables installed in metro transit areas in large cities are typically difficult areas for Altrans Energies to access and can be considered as critical cables.



Isolated rural areas are also an example of networks where access is not easy, where cables may be old and therefore at high risk of failure...



underground



OUR ARTIFICIAL INTELLIGENCE INTEGRATED INTO SENSORS

It consists of several units (nodes) of transient signal sensors arranged on the network and which allow the automatic localization of fault sources without the need for synchronization, thanks to the exploitation of the signal deformation due to propagation (TRANSLATOR[©] technology). A quantum – inspired artificial intelligence module is implemented at the level of a group of sensors for the classification of fault sources and to extend the diagnosis by the classification of faults. The software and the AI-driven early detections are the heart of our innovation.

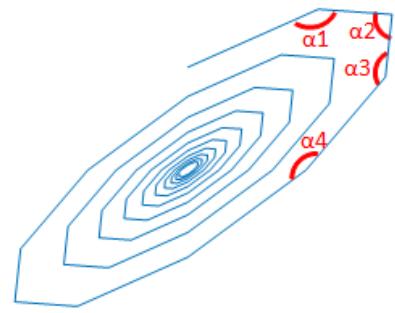
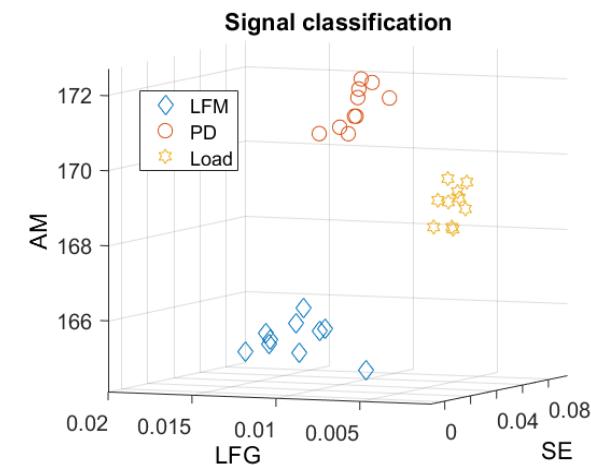
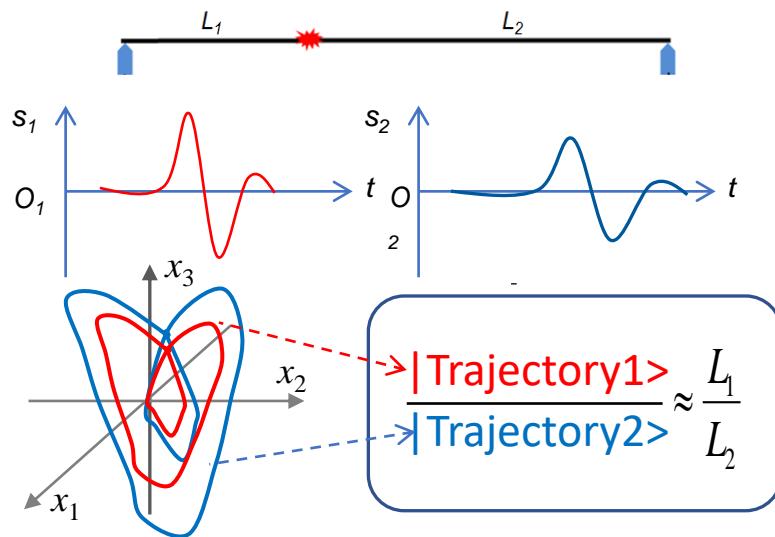


QUANTUM - INSPIRED ML ALGORITHMS

Our next-level innovation implements the following concept (RODECIN© software): a waveform is emitted and, through its propagation in the power network, it interacts with the transients due to the faults. This interaction is characterized with quantum algorithms at the reception, allowing the localization of the fault sources. Phase diagram analysis and the consideration of quantum scale physics are the core of our innovations.



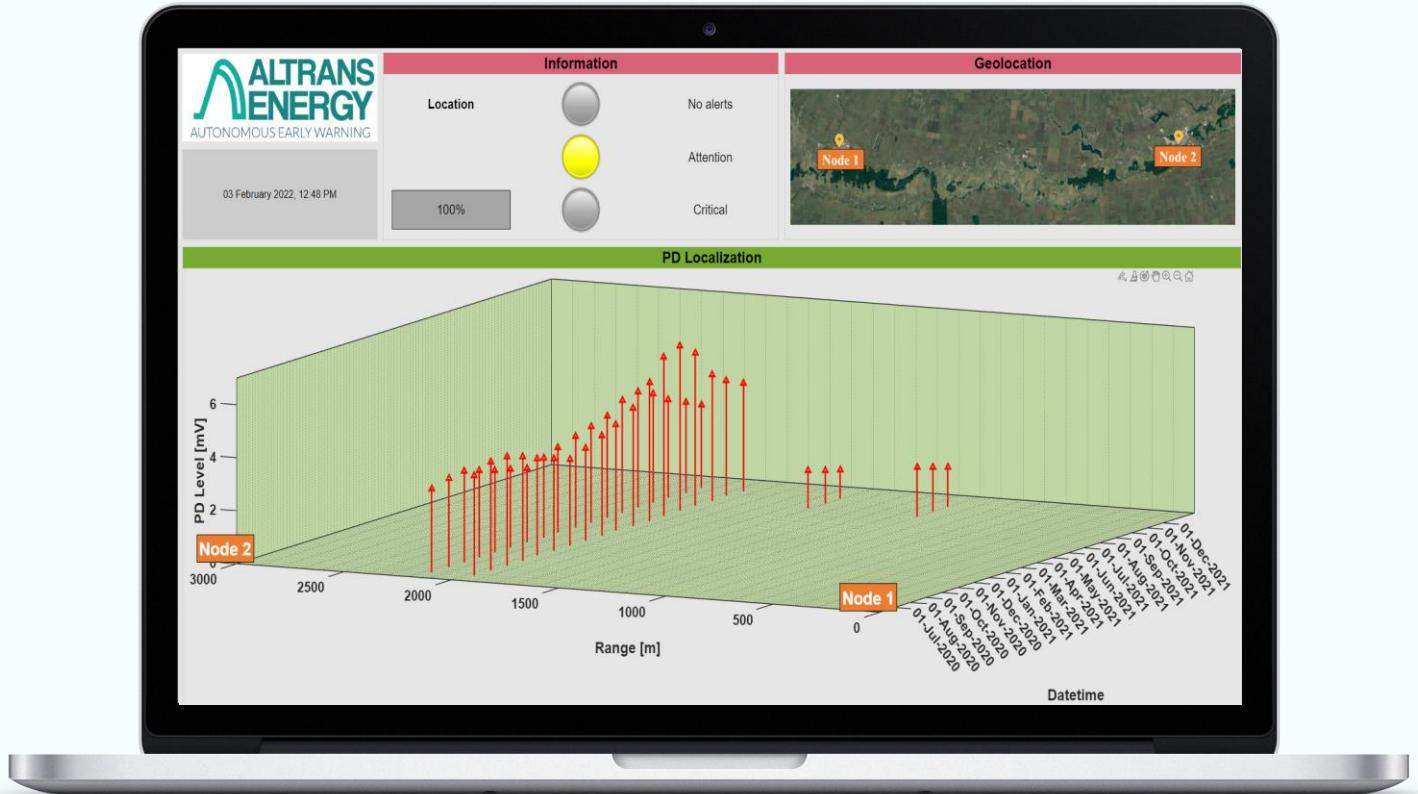
MORE DETAILS IN OUR INNOVATION



Our unique method : localization synchronization-free and Classification - data-driven technique based on quantum-inspired AI. TRANSLOCATOR patent: "Procédé de localisation d'une source d'impulsions dans un milieu dispersif" (France, patent number: G01R 31/08.2015)

FEATURES

OVERVIEW



Feature 01

Autonomous signal detection and classification



Feature 02

Automatic/synchronization-free location of faults



Feature 03

Risk assessment in terms of evolution of transient amplitudes



Feature 04

Easy-to-integrate risk levels and their accurate location

OUR VALUE PROPOSITION

ACCURACY

We detect early warnings to the nearest meter (1 meter), vs hundred of meters currently

PREDICTIVE

We detect early warnings online, so no need to cut temporary the network

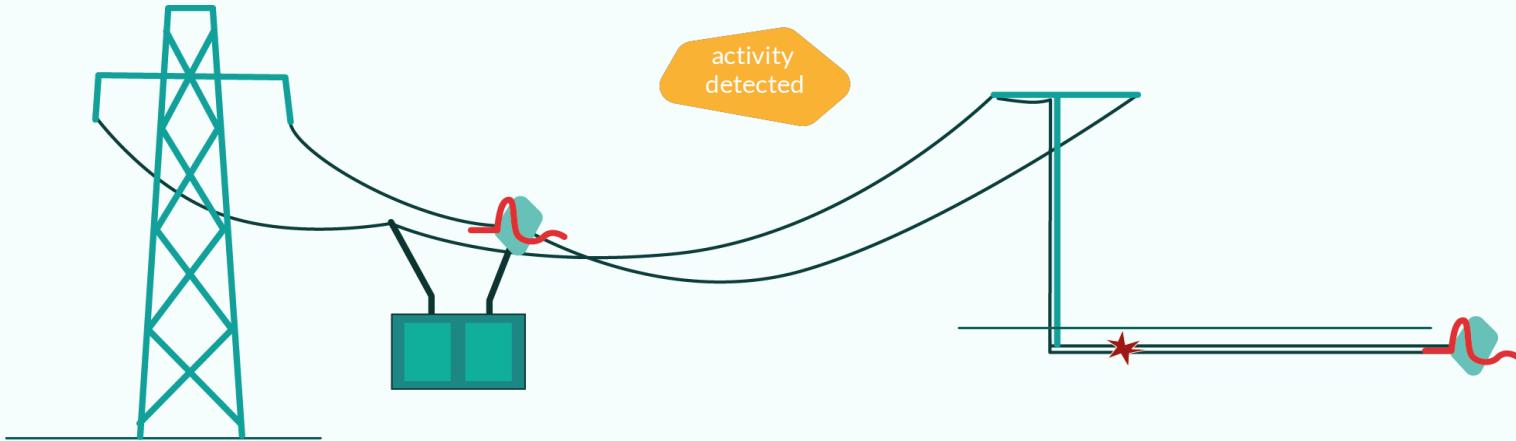
COST EFFECTIVE

We divide by 45 the cost of electrical grid maintenance



BUSINESS MODEL

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TODAY, pilot systems composed by local sensing units & central processing on our sensors.

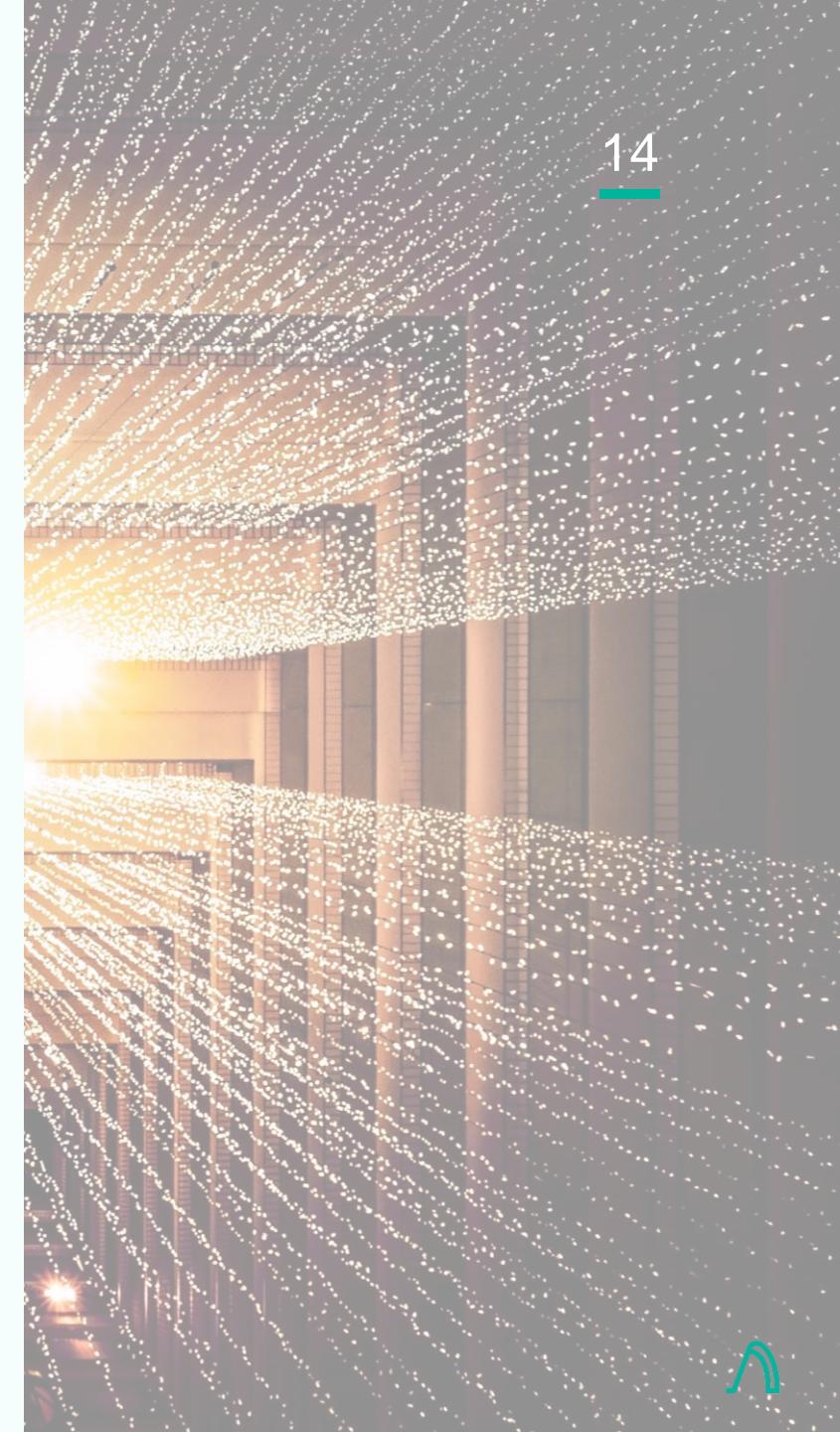
~ 5K€
OF CAPEX

~ 7K€
OF OPEX

TOMORROW, final products will be a fully autonomous distributed sensing

~ 8K€
OF CAPEX

~ 2K€
OF ARR





GO - TO - MARKET & CURRENT TRACTION

Altrans Energies has a strong pilot system proliferation strategy to convert the biggest players through the local decision-making entities. This go-to-market strategy works well with French market which is very concentrated in terms of actors but with multiple possible entries in the region. Currently, we have 3 top-tiers beta clients.



We already covers
40 km cables



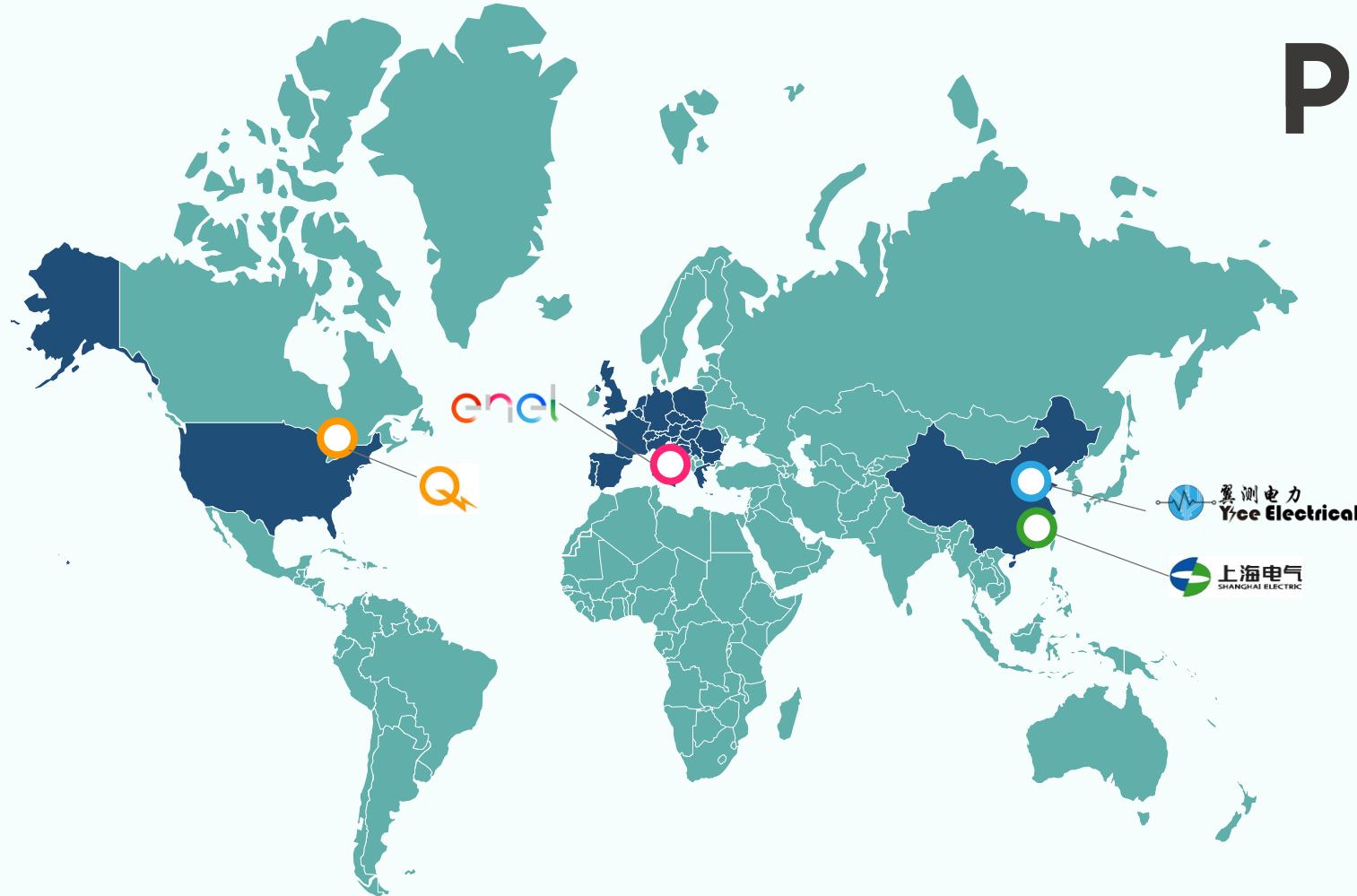
We already have identified 8
early warning whose *2 critical*



We already do test in foreign countries:
China, Canada, Croatia, Romania



THE WORLD, IN PROGRESS...



Altrans Energies has a strong pilot system proliferation strategy at global level as well. Toward local distributors of power inspection systems (SAGI Tech, Hyten Inc) or direct connections, 5 pilot systems currently serve in China, Canada, Croatia, Romania. **10** pilot systems are expected to be nearly installed in China.



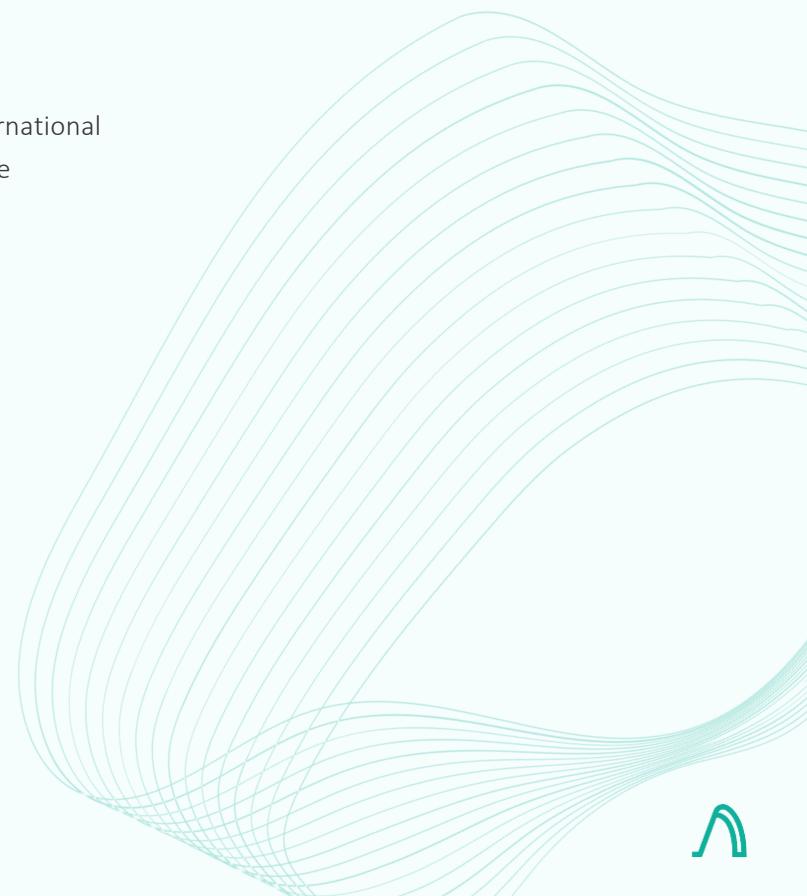
FINANCIAL PROJECTIONS



- High Voltage and Medium Voltage part %
- Low Voltage part %



OUR ROADMAP



WE ARE BASED IN THE GRENOBLE DEEPTech VALLEY

An aerial photograph of the Grenoble area, showing the city nestled in a valley with the Alps rising in the background. The Isère river flows through the valley, and several major roads and a highway are visible. The city lights are visible at night, and the surrounding mountains are covered in snow.



THANK YOU !

If you liked the trailer, please feel free to contact
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or by phone with that number +33.6.32.35.23.71

