wainvam

Le monde a ses mesures que la mesure ignore *

Series A - Investment Memorandum
January 2023

** the world has its measure that is beyond measurement*

WAINVAM-E

Deep tech company focused on the development and commercialization of

Diamond sensors for metrology, industrial control & biomedical diagnostics.

- **April 2020 :** incorporation (Lorient, France)
- **4** founders with diverse expertise
- **3 M€** capital
- **38** employees (Jan. 2023)
- **600** m² office space and 180 m² laboratories
  (chemistry, biology L2, optics, electronics, production)
- **11** patent applications.

Jan. 2023

Complementary skills at works

Remi GEIGER
CTO

Ph.D. Atomic Physics

Research Director, Expert in quantum metrology and sensors. Published over 40 articles and managed 15 research projects. Associate Professor at Sorbonne University

Michel FERET
CEO

Ph.D. Computer Science

CTO, product management and sales positions (Sony, Thomson STBs and ICs, Ingenico terminals…). Managed teams of 200 to 600 engineers, over 3 continents. Franco-Canadian.

Jianguo ZHANG
IP

Ph.D. Electrochemistry

VP in charge of patents applications for Thomson/Technicolor (500M€/year in licensing revenues, ~400 patent applications/year).

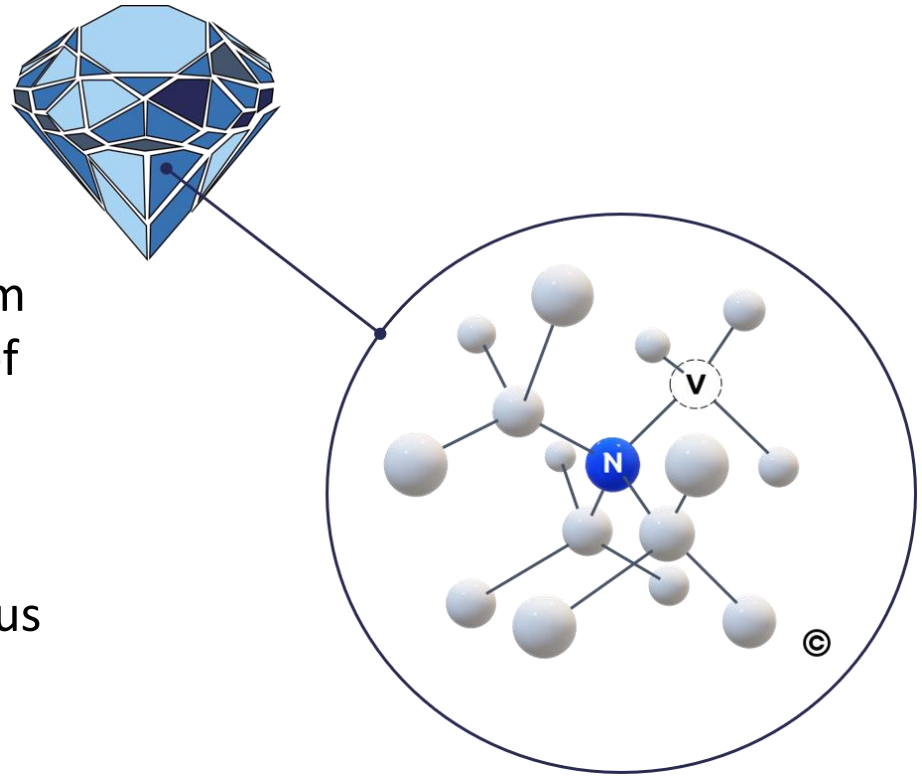
Claude Barraud
Chairman

X-Mines Engineer

CTO-CEO positions (Schlumberger, Sony, Bull, Thomson). Experienced entrepreneur. **President, CEO** of Thalos, 2011 - 2019, sold to Arbulu Group with x37 shares price.

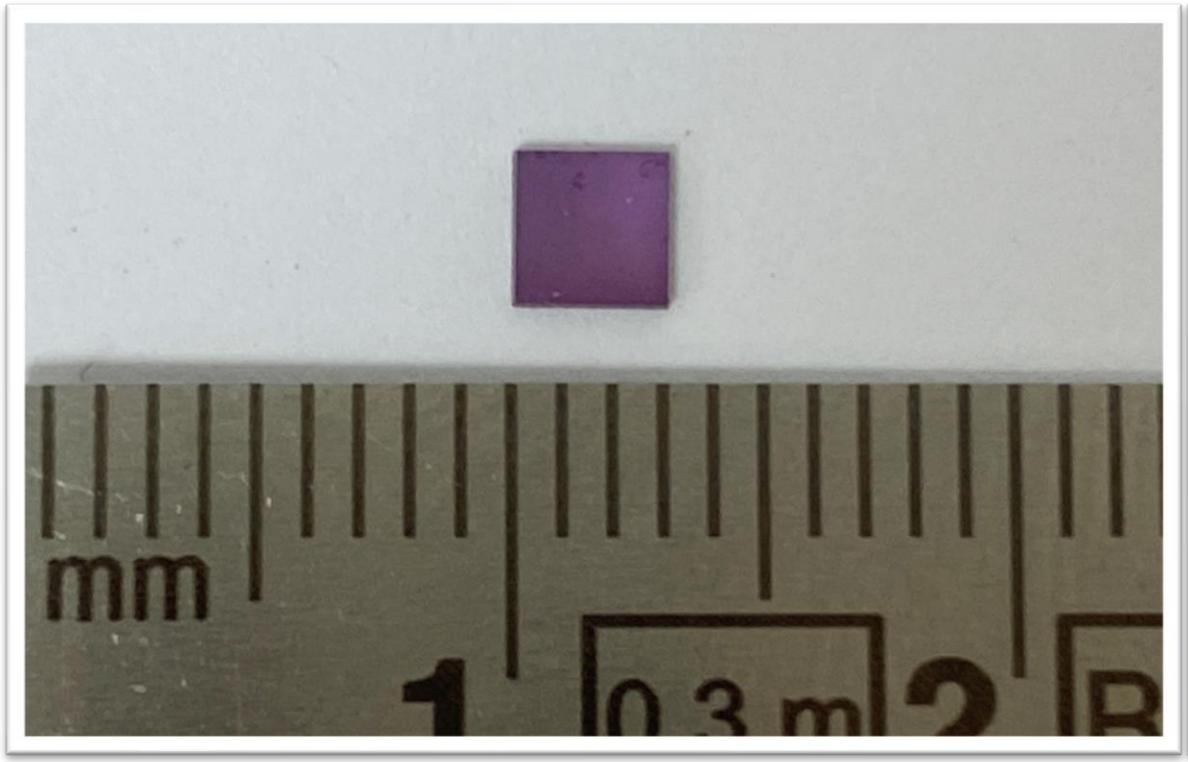
Core technology: NV Center Diamonds

- A diamond is an assembly of carbon atoms.
- An NV center is a defect of this assembly, where a carbon atom has been replaced by a nitrogen atom (Nitrogen, N) and one of its neighbors is left vacant (Vacancy, V).
- This singularity gives diamonds remarkable quantum and optical properties, allowing a very sensitive detection of various physicochemical quantities.
- Chemical treatments on the diamond surface are designed to target specific biological molecules for diagnosis and treatment.

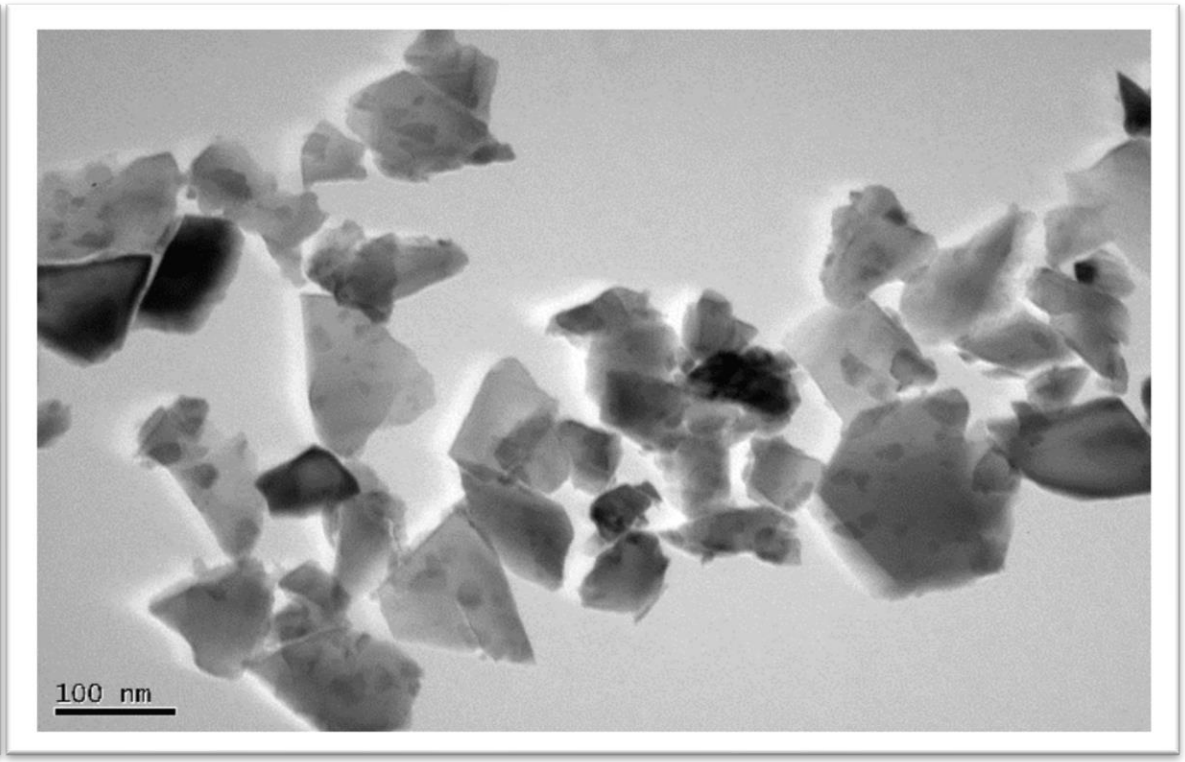


NV diamond crystal structure

2 types of diamonds



NV Centres Microdiamonds (size : 100 µm – 3 mm)



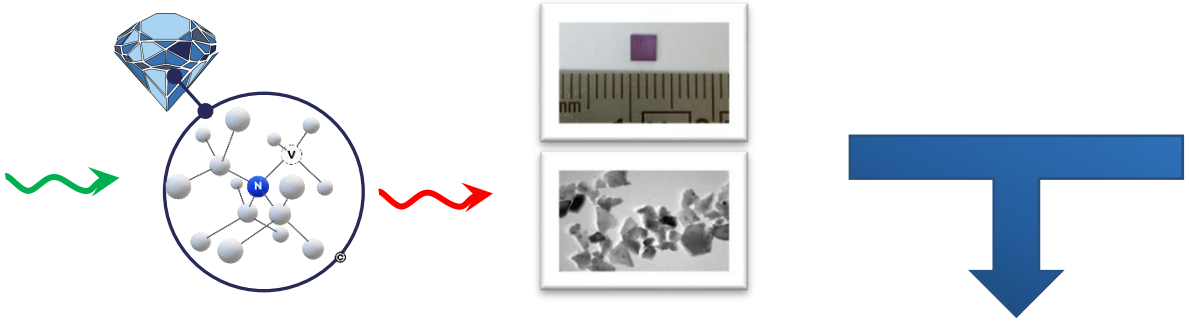
Nanodiamonds – 70 nm – electron microscope image

Strategy

- WAINVAM-E is a technology company: what we sell *in the end* is technology
- We discover/invent applications making the best use of the diamond technology and pursue those with the highest ROI
- Our revenue model is largely based on technology licensing: we sell technological bricks (patents+designs+first BOM) dedicated to high value-added applications
- We do not intend to sell directly on the different verticals
- We stay focused on our core expertise: diamond sensor technology & applications
- On the industrial side, we develop the functionalized nanodiamond production to serve the biomedical sector.

Several applications derived from *one* technological basis

Same fundamental physics at various scale (micro, nano)



Several Common Sub-Systems

- Lasers,
- Microwave electronics,
- Micro-mechanics,
- NV Diamonds,
- Embedded software

3 primary applications benefiting from R&D pooling and crossovers

Metrology
-> high precision magnetometers for instrumentation, navigation & detection

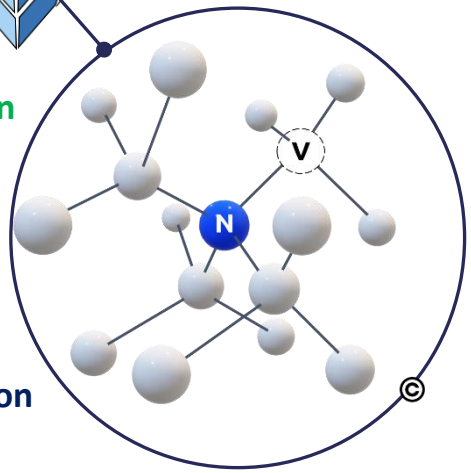
Non-Destructive Testing (NDT)
-> validate metal pieces after cast or during maintenance

Biomedical
-> detect low concentrations of biomarkers in biological samples

Diamond quantum sensor

Diamond

NV centers **absorb** the **green light**



The fluorescence depends on magnetic fields

NV Center

And emit **red fluorescence**

An optical reading measures the variations of different physical quantities

(in the product shown here: magnetic fields).

Use case 1: metrology

First product: WAINMAG-ST

Thesis : A market output for our baseline technology as a magnetometer line up, providing :

1) High scientific credentials
2) Marketing leverage
3) Fast early revenues before starting larger verticals

Navigation: Early interests from aeronautics, space, marine and defense industries for a navigation module using earth magnetic field.

Competitive advantages

Stability
Improved measurements reliability

High sensitivity
Enhanced detection precision

Small size of the sensor heads
Better access to detection area, Facilitates integration

Market size

- Primary target: 500 labs and institutions
- Navigation market: 804M$, with a 5% CAGR

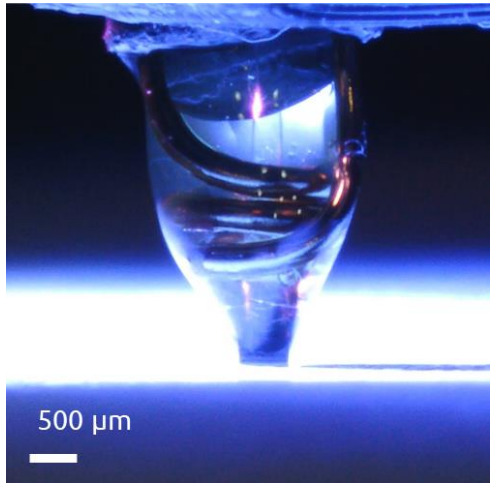
Outlook

- 1.5 M€ revenue of direct sales in 2023, while kickstarting navigation applications in parallel to laboratory equipment.
- Reach more than 3.5m€ yearly revenue in 2024.

Use case 2: non destructive testing

Thesis : A market output for magnetometers as NDT tools providing

1) Better corrosion and damages detection in metallic structures
2) Replacement for Penetration Testing (PT) techniques
3) Access to a large market eager for innovations



Competitive advantages

Surface and subsurface measurements
Increased detection area

Reproduceable and automated - Allows traceability and big data

High sensitivity - For a precise detection

Small size of the sensor heads - Allows to be close to zone to detect and facilitates integration

Market size

- Total NDT: 12 B$
- Serviceable obtainable market : 180 – 350 M$

Outlook

- Start with direct sales of technology bricks in 2024; Reach at least **11m€ in revenue in 2028.**
- We remain open to different options: licensing and/or spin-off or JV with a NDT equipment specialist (Zetec/Eddify, Olympus), or with a customer.

Use case 3: in vitro diagnostics

PATENTS EP22305813.2
& EP22306034.4

Thesis : WELFA offers ultra-sensitive Lateral Flow Assays using fND.

It allows detecting viral or cancerous biomarkers in fluids, with **unprecedented limits of detection and measurement speed**, with a wide range of high ROI biomedical applications.

Competitive advantages

Quantitative - More accurate and reliable than current LFA.

Ultra-sensitive - ELISA-like sensitivity. Detection of very low levels of biomarkers (~ pg/mL)

Fast - Results in few minutes, no centrifuge required.

Accessible - Point of Care medical test, with the same price and ease-of-use as LFA.

Market size

- Lateral Flow Assay = **13 B$** – CAGR: **2%**

  Dengue testing market = **800 m$** – CAGR: **5%**

Outlook

- Agrofood application to generate revenue by end 2024
- Human health: focus on Dengue and target first sales (undirect) in 2026 – over 20 m€ revenues in 2028.

Sales plan for 2023

WAINTEACH	932
WAINMAG-ST	570
Studies & POC NDT	400
Studies & POC Navigation	526
Other + LT2	65
Total (k€)	**2 492**

Pipe

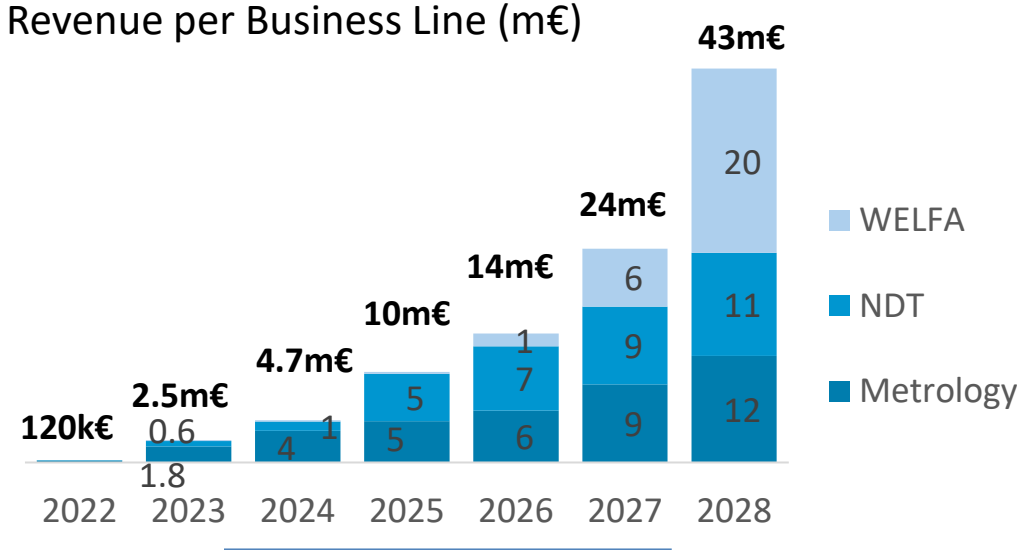
- WAINTEACH : big traction, ~30 interested Universities in France, same in EU, 15 quotes sent
- WAINMAG-ST : 146 contacted qualified prospects, 17 quotes sent
- NDT POC studies: Safran, EDF, Airbus, Eddyfi
- Navigation POC studies: confidential

Summary : business model & Go to market

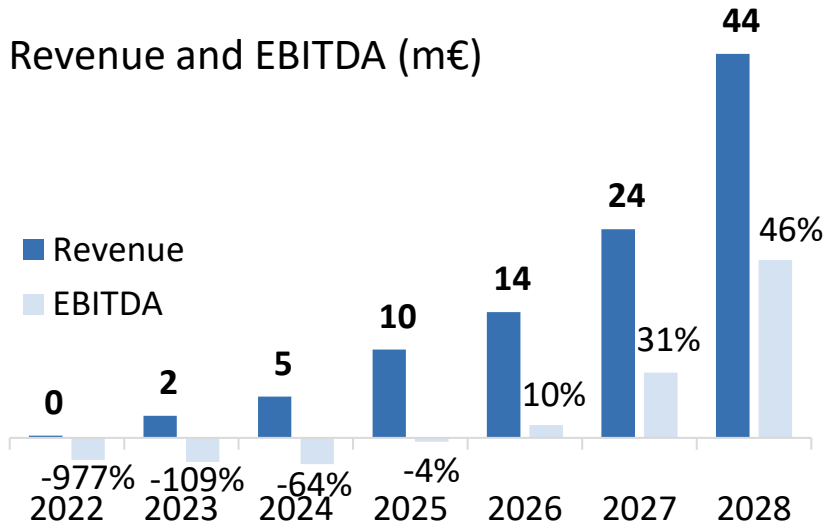
- We start with reference customers, develop proofs of concepts and 1st prototypes, up to some *adhoc* systems for these customers
- We sell metrology instruments (by subcontracting the production and using distributors)
- We pre-produce, and/or extract subsystems out of these instruments
- We sell or license these subsystems, always staying on our technological core business : sensors and readers + functionalized nanodiamonds.

We aim for more than 40m€ revenue in 2028

Revenue per Business Line (m€)



Revenue and EBITDA (m€)

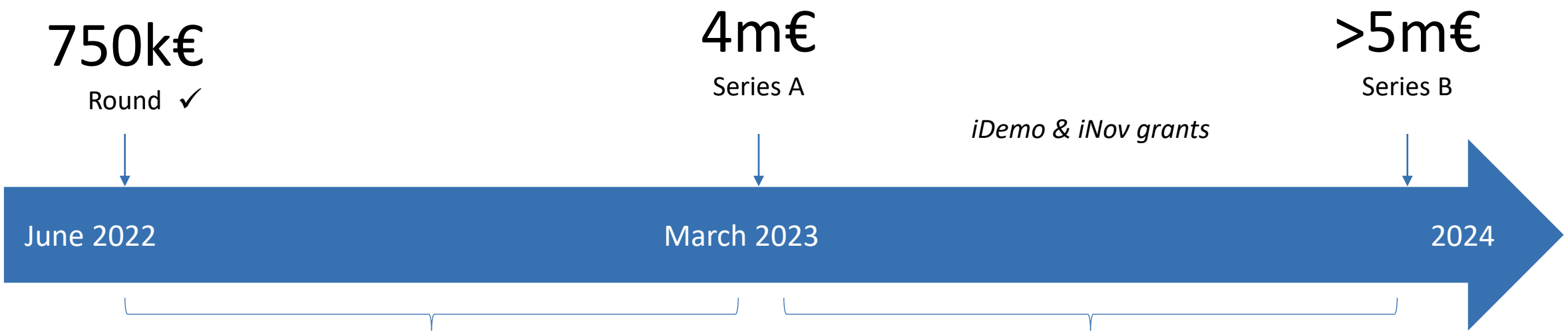


Revenue consists mostly of device sales. A typical device is sold between 35 and 100k€ with a gross margin of 65 to 80%.

WELFA stands out as its model is based on a mix between device sales and per-test consumables.

Each business line benefits from WAINVAM recognized knowledge on diamond sensor development and substantial R&D cost pooling.

We are raising 4m€ to lead the way of the diamond sensor technology



- ✓ Metrology commercial soft launch (WAINTEACH & WAINMAG-ST)
- ✓ Safran and Defense as clients (NDT & Nav)
- ✓ POC on biomedical diagnosis (WELFA)

- ✓ Full scale launch of Metrology
- ✓ First NDT technological bricks
- ✓ Continuous development on core technology
- ✓ Validation of WELFA on dengue biomarkers
- ✓ Solution for agrofood marker

The amount raised is enough for WAINVAM to be break-even and cashflow positive by 2025, while taking the position of leader on diamond quantum sensor applications.

wainvam

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