# MineGuard

A drone kit for remote mine detection with an accuracy of 90%, which is 3 times cheaper than analogues

# PROBLEM

The manual process of searching for landmines is slow, dangerous and expensive

It will take Ukraine more than 750 years to demine all the affected areas using traditional methods

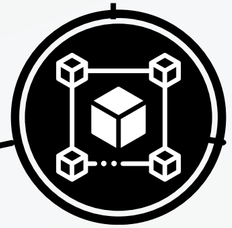
The estimated cost of demining Ukraine is about $37 billion

The estimated cost of demining the top 10 most mined countries is over $282 billion

# SOLUTION

## Drones

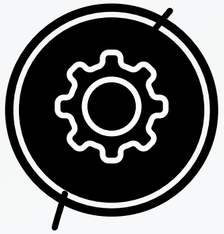
MineGuard KIT is used in conjunction with any drone



## MineGuard KIT

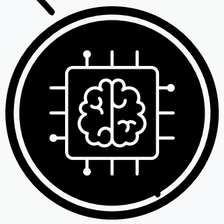
## Three sensors

RGB camera, thermal imager and metal detector



## Neural networks

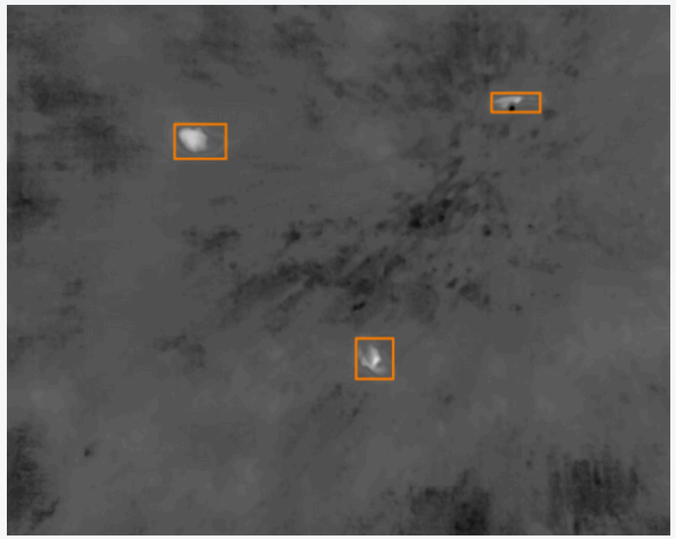
Computer vision technologies and neural networks for mine detection



# TECHNICAL IMPLEMENTATION

RGB camera + YOLOv8

+

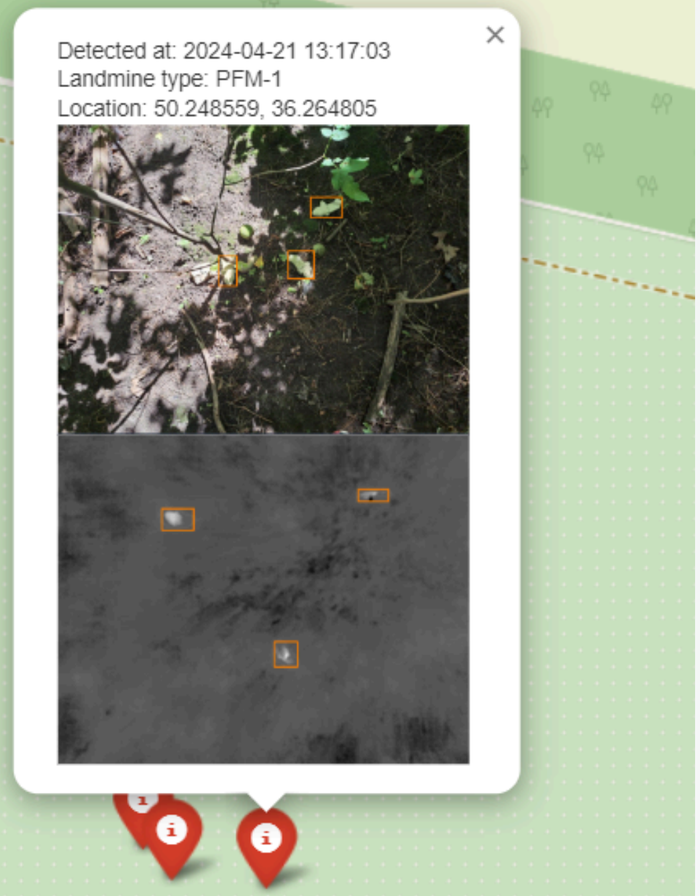


Thermal imager + YOLOv8

+

Neural network processing of metal detector signals

*** own unique datasets based on digital twins are used to train neural networks**



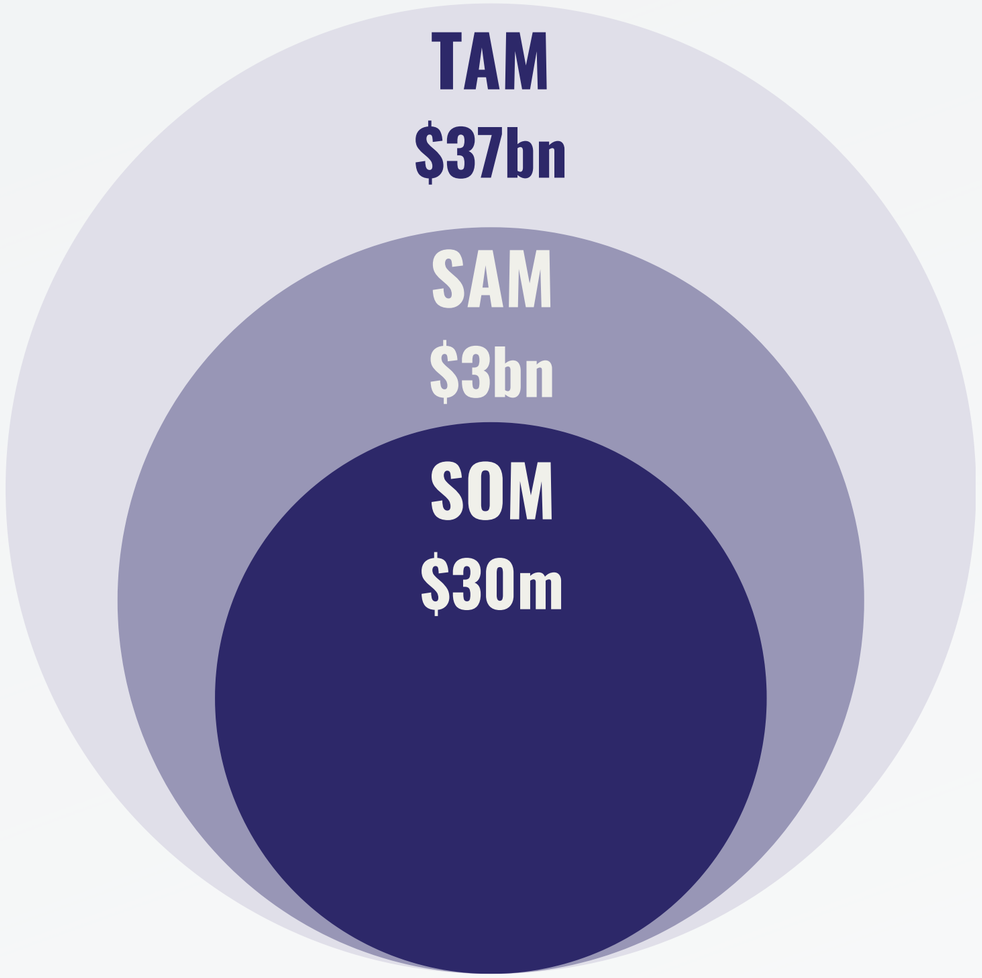

# ALGORITHM

1. **Data processing:** 3 independent sensors scan the area.
2. **Visualization via map:**
    - Yellow marker: 1 sensor suspects a mine.
    - Red marker: 2+ sensors have detected a mine.
3. **Classification of mine type**

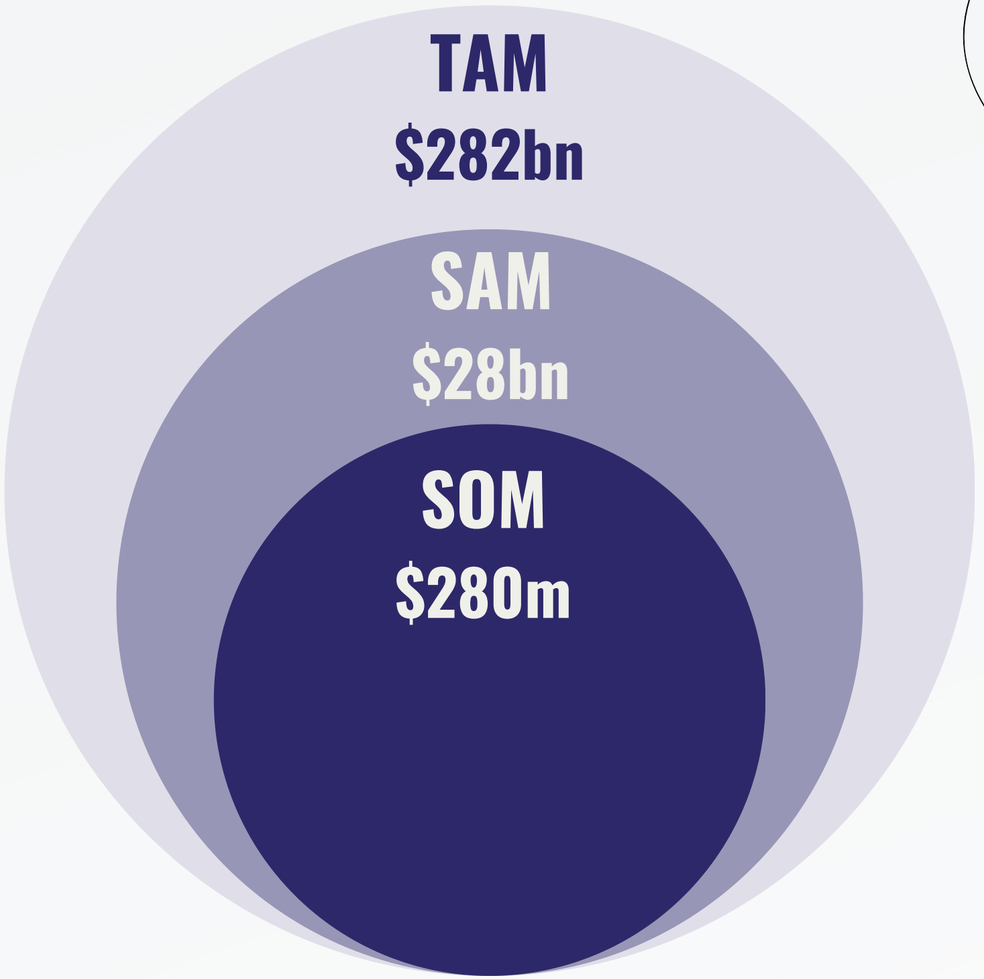
# COMPETITORS

| | **MineGuard** | Skyfront | Delair | ST1 | MagDrone R3 | Draganfly | ArroTech |
|---|---|---|---|---|---|---|---|
| Accuracy | 90% | 90% | 90% | 90% | 30% | 30% | 30% |
| Price | $10K | $47K | $50K | $30K | $17K | $100K | $150K |

# MARKET




Ukraine




World

# BUSINESS MODEL

## Key Partners

- Mine action operators (state, commercial and grant-funded). Cooperate in the testing and deployment of the MineGuard KIT.
- Equipment suppliers: Online radio component stores.

## Key Activities

- Continuous improvement of AI algorithms and hardware.
- Production and assembly of the MineGuard KIT.
- Searching for potential customers and popularizing the benefits of the kit.

## Key Resources

- Public procurement on Prozoro and charitable organizations.
- Cooperation with mine action operators and equipment suppliers.
- Website, online and in-person product demonstrations.

## Value Proposition

- Provides <95% accuracy in mine detection and is 4 times cheaper than analogs due to the use of artificial intelligence and simpler sensors
- Option to purchase a MineGuard KIT for installation on your own drone, or purchase a MineGuard drone with all the necessary settings

## Customer Relationships

- Technical support and maintenance: Provide services in setting up the drone, as well as training in the use of KIT.

## Channels

- Public procurement on Prozoro and charitable organizations.
- Cooperation with mine action operators and equipment suppliers.
- Website, online and in-person product demonstrations.

## Customer Segments

- Primary: state mine action operators
- Secondary: commercial mine action operators and grant-funded mine action operators.

## Cost Structure

- Development and improvement of KIT technology.
- Salary of the staff
- Production and assembly of MineGuard KIT.
- Advertising and customer search costs.
- Training, maintenance and technical assistance.

## Revenue Streams

- Sales of MineGuard KIT to mine action operators (government, commercial and grant-funded)

# ACHIEVEMENTS

Крона Надії
Благодійна організація

yep!

MITS

SPARK
СТАРТАП-ЦЕНТР НТУ «ХПІ»

Sikorsky Challenge

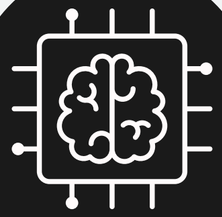
BRAVE1
UKRAINIAN DEFENSE INNOVATIONS

# ACHIEVEMENTS

MineGuard KIT

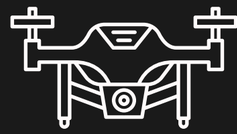
Recording a dataset

# DEVELOPMENT STRATEGY



Improve the performance of neural networks

STRATEGY N°1



Purchase of a Reactive Drone Agric RDE410 drone to create an MVP product

STRATEGY N°2

Conclusion of contracts for test operation and further promotion of the product

STRATEGY N°3

# TEAM

Mark
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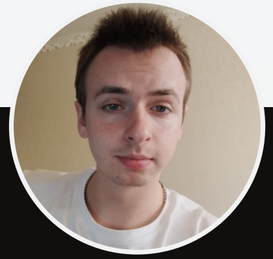
CEO
Python Developer

Illya
Hovorukha

CTO
Engineer



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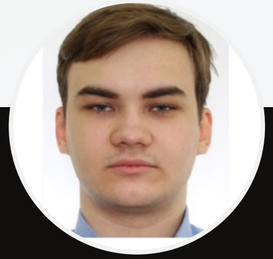
Data Scientist



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# THANK YOU FOR YOUR ATTENTION