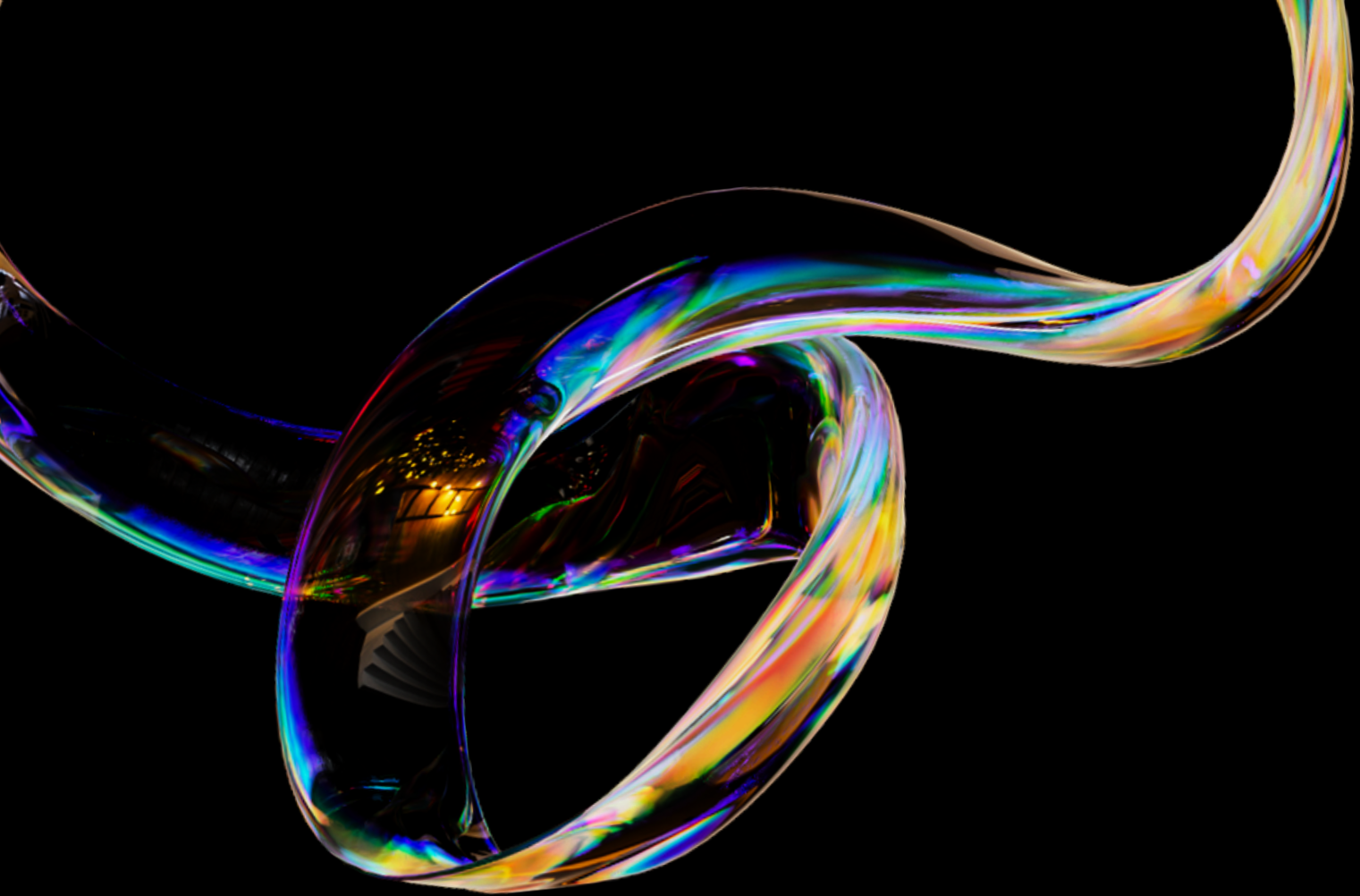




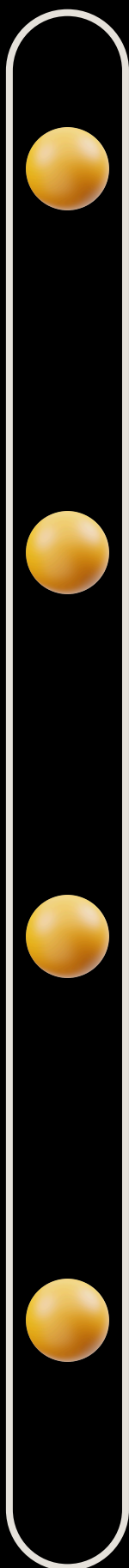
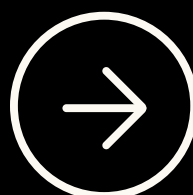
MEDIFLY

An AI-powered drone used in the field of medicine





MAIN PROBLEMS



Lack of resources

About **44%** of ambulances in Kazakhstan are worn out, and in Almaty — up to **69%** (Tengrinews, Inform.kz).

Long waiting times for help

- In Talgar, delays reach up to **5 hours**; there have been deaths caused by late ambulance arrivals (Kaz.Nur).
- In the Akmola region, a man waited for an ambulance for **a whole day** and died (Nur.kz).

Limited access in rural areas

There are **1,392** ambulances in cities, but only **857** in rural areas (Gov.kz).

Lack of innovation and weak legislation

Kazakhstan has no implementation of **medical drones**; current laws restrict rather than promote the development of this field (Informburo.kz).

MEDIFLY – OUR INNOVATIVE SOLUTION



Application

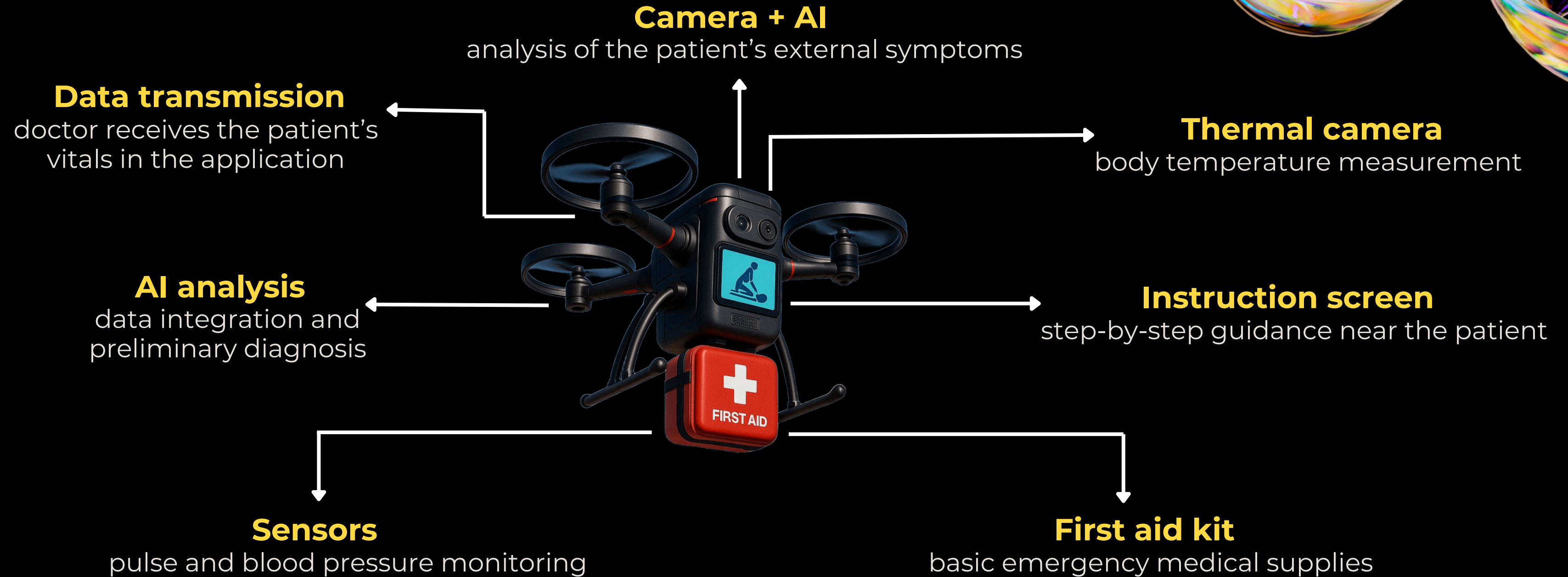
Analysis and management tool for doctors and operators

Drone with AI

Collection of medical data and delivery of emergency aid



MEDIFLY DRONE



MEDIFLY APP

App Features

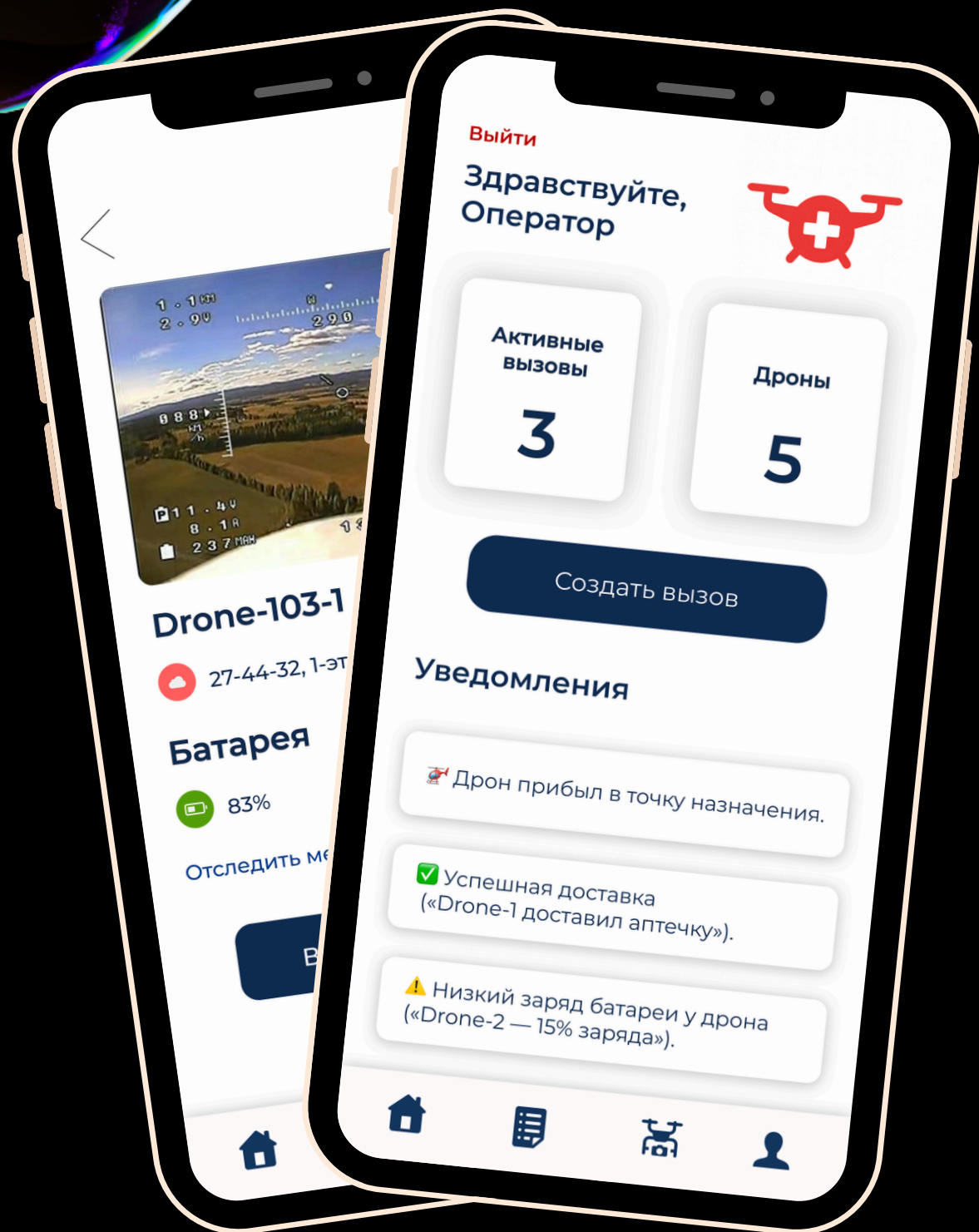
For Operator:

- Drone control (flight, missions)
- Real-time tracking of drone locations on the map
- Live video stream from the drone's camera
- Creation and coordination of emergency calls

For Doctor:

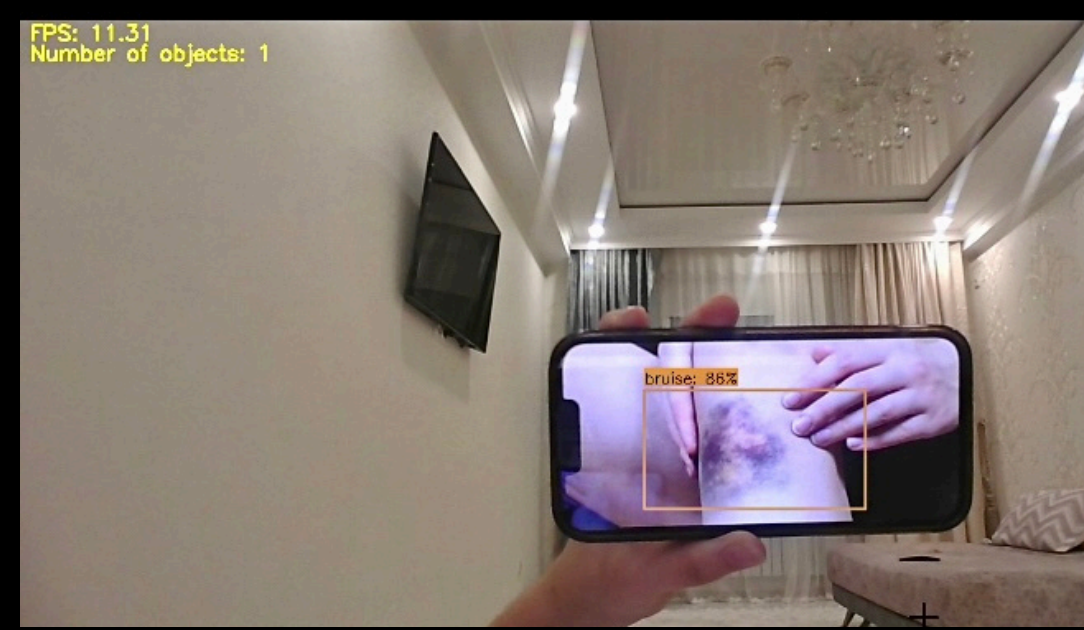
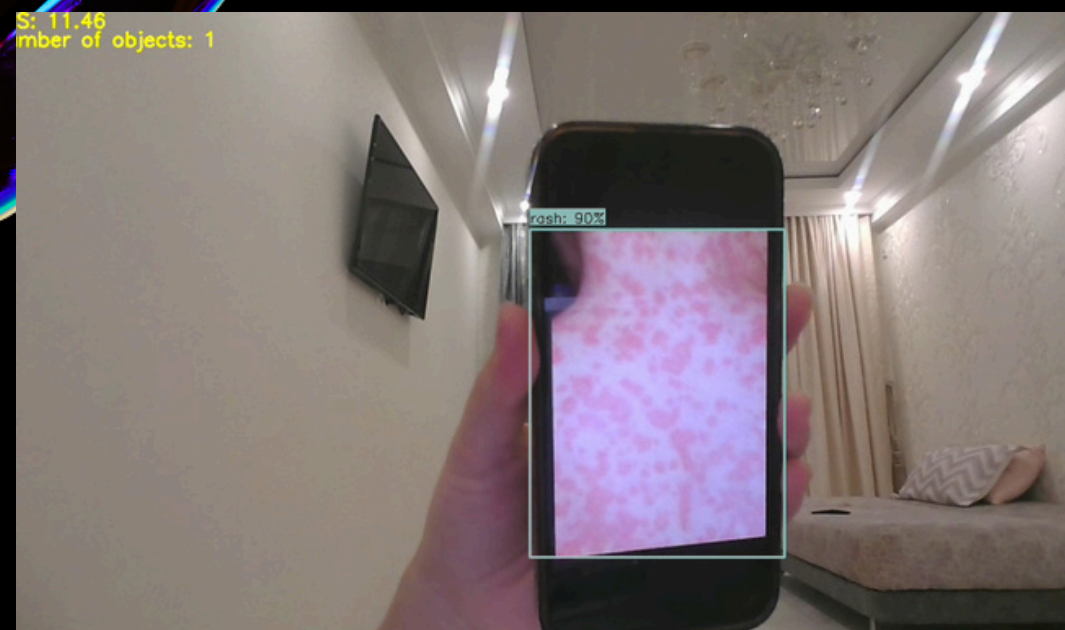
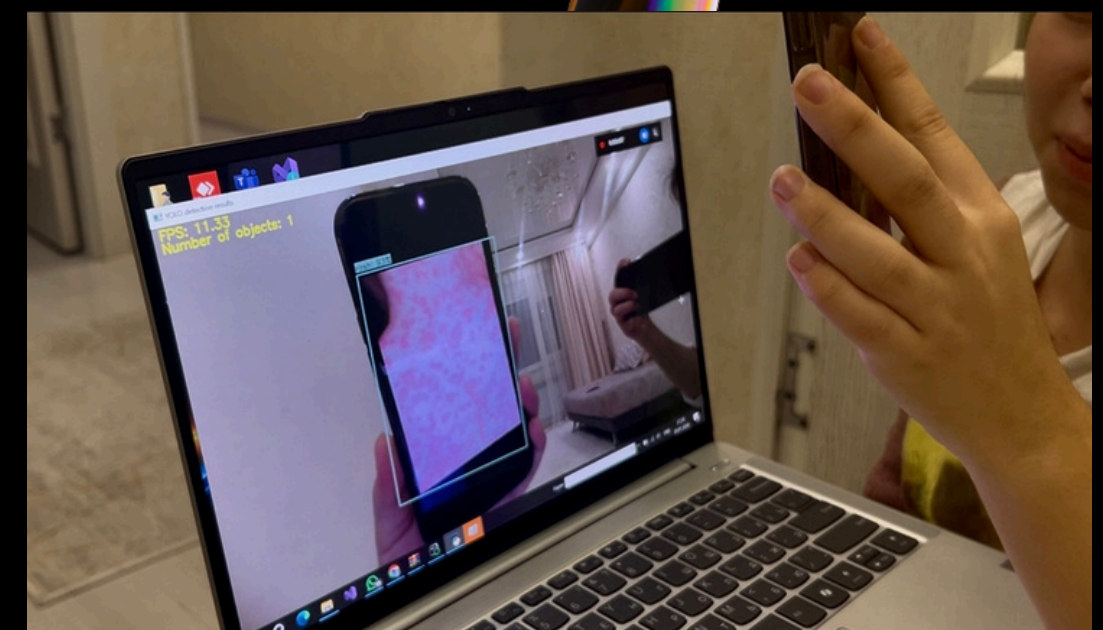
- Receiving patient data (temperature, pulse, blood pressure)
- Viewing AI preliminary analysis
- Confirming or adjusting the diagnosis
- Access to medical data archive
- Live video stream from the drone's camera
- Monitoring the drone's route on the map

[Click here to view the MediFly app prototype](#)



AI VISION MODULE DEMO

A real-time YOLOv11-based vision system was developed to detect blood, bruises, mouth foam, and skin rash. Using a drone-simulated camera, the system performed live detection with bounding boxes and confidence scoring under realistic conditions.



RELEVANCE OF THE SOLUTION

To determine the relevance of our proposed solution, we conducted both
quantitative and qualitative research

QUANTITATIVE RESEARCH

Online survey (n = 116)

- 96.6% of respondents believe that using new technologies in emergency care is extremely important.
- Over 93.9% are willing to trust an AI-powered drone to perform basic first aid under doctors' supervision.
- The majority support the implementation of medical drones in Kazakhstan.

👉 **This confirms a strong public demand for innovative solutions.**

QUALITATIVE RESEARCH

Interviews and expert review

- Conducted interviews with paramedic and two PhD specialists in physics, biology.
- Experts emphasized the relevance and originality of the MediFly project.
- Overall project rating — **4 out of 5** (for the prototype development stage, this is considered a high score).
- The received recommendations helped identify strengths and weaknesses, enabling further improvement of the project.

CONTRIBUTION TO ACHIEVING THE UN SDG



● SDG 3:

1. Increase accessibility of medical care
2. Reduce emergency response times
3. Lower mortality and severe outcomes in urgent medical situations



● SDG 9:

1. Use of innovative technologies (drones, AI)
2. Improve medical infrastructure in remote areas



● SDG 10:

1. Ensure equal access to medical care for rural and urban residents
2. Reduce disparities in the quality of healthcare services across regions



COMPETITIVE ANALYSIS

Criteria	MEDIFLY	everdrone	zipline	draganfly	swoop aero
1. Emergency on-site assistance	✓	✓	✗	✗	✗
2. Multi-sector application	✓	✗	✗	✓	✗
3. Integration with 103 / medical services	✓	✓	✓	+ -	✓
4. Operation in remote areas	✓	✗	✓	✓	✓
5. AI-based patient condition analysis	✓	✗	✗	✗	✗

ACHIEVEMENTS AND PROJECT PROCESS

1 2nd place in the Mangystau Fest 2025 Startup Battle competition

The project was recognized as one of the best startup and received a grant of 150,000 tenge.



1 TOP-10 FINALIST in Startup Mangystau: Youth and Innovation

Recognized as one of the top 10 projects among 66 submissions for its innovation and demonstrated potential.



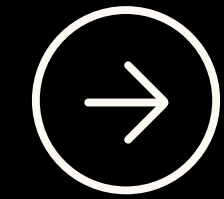
At the moment, we have assembled a drone and are integrating the YOLO computer vision system and medical sensors to determine external symptoms, pulse, blood pressure and heart rate. In the next 1.5–2 months, it is planned to develop a mobile application for displaying and transmitting data. After completing the technical part, the project will be tested, and cooperation with polyclinics and hospitals will begin to introduce the technology into medical practice.

SIZE OF MARKET

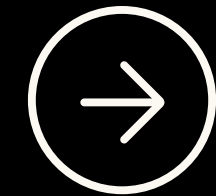
- TAM (Total Addressable Market) — the entire potential market = 3,023 organizations/institutions
- SAM (Serviceable Available Market) — realistically accessible market in the next few years = 300 organizations/institutions
- SOM (Serviceable Obtainable Market) — the share of SAM that the project can realistically capture in the first 3 years = 30 organizations/institutions



BUSINESS PLAN FOR 2 YEARS



Revenue Source	Calculation	Amount (USD)	Notes
Drone sale with app	$(3 + 5 \text{ drones}) \times 2900\$$	23,200	3 drones 1st year, 5 drones 2nd year
Drone rental / subscription	$5 \times 380\$ \times 12 \text{ month} + 8 \times 380\$ \times 12 \text{ month}$	59,280	5 drones 12 month 1st year + 8 drones 12 month 2nd year
Personnel training	$8 \times 48\$ + 13 \times 48\$$	1,008	8 drones 1st year, 13 drones 2nd year
Medicine / vaccine delivery	$(25 + 50) \times 19\$$	1,425	25 orders 1st year, 50 orders 2nd year



Expense Source	Calculation	Amount (USD)
Cost of drone materials	$779\$ \times (9 + 14 \text{ drones})$	17,917
App support	$3,450\$ \times 2 \text{ years}$	6,900
Drone & software maintenance	3,105\$	3,105
Drone licenses	$1,920\$ \times (9 + 14 \text{ drones})$	44,160

RESULT

Revenue over 2 years: **84,913 \$**
Expenses over 2 years: **72,082 \$**
Net profit over 2 years: **12,831 \$**

MEET THE TEAM



**AGAIDAR
AIARU**

Software Developer



**KAZYEVA
ARUZHAN**

Hardware Developer



**GUMARKYZY
ASSIYA**

Specialist in Drone
Piloting

