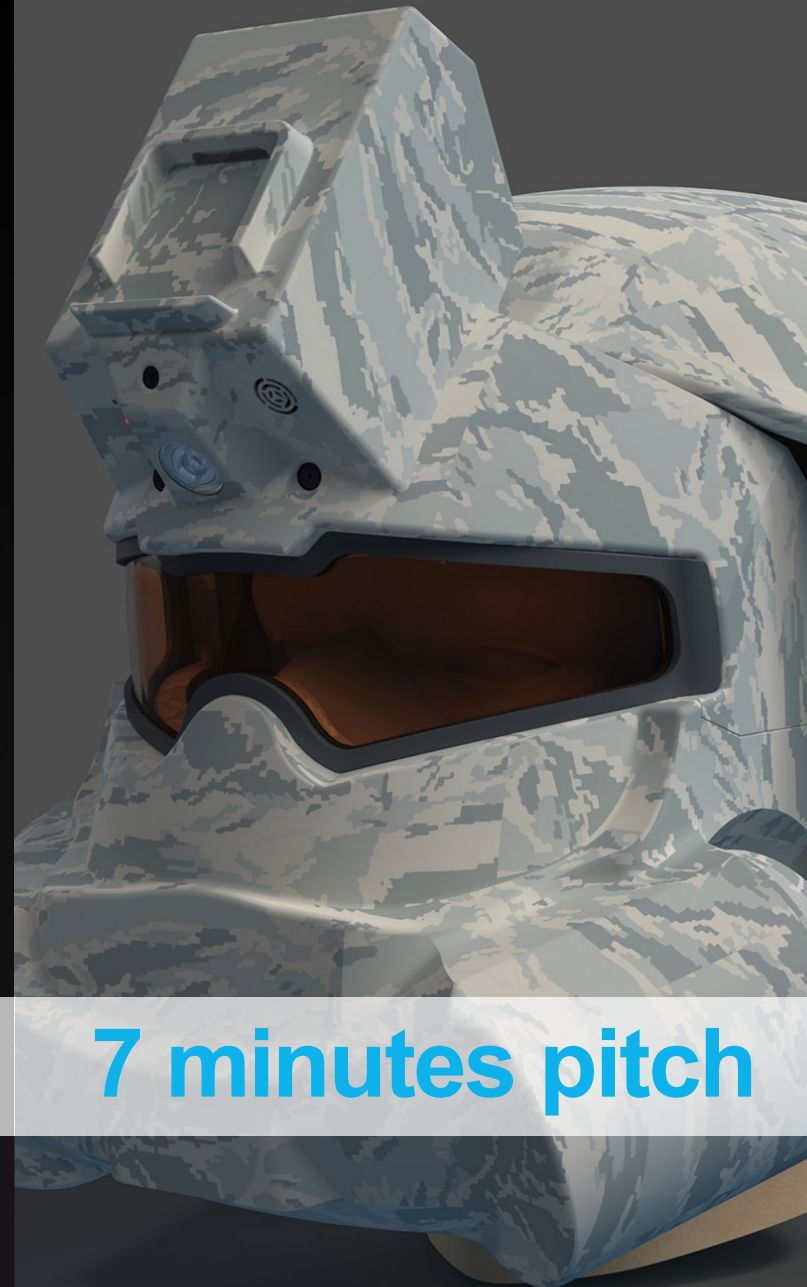




## Augmented Reality Head-Up Display Fullface Mask (ARHUDFM)



**Superpower** for professionals

**7 minutes pitch**

Basil Boluk, CTO at Furtherium, Inc.

[basil.boluk@furtherium.com](mailto:basil.boluk@furtherium.com)

# Vision

Military, police, firefighters and physicians, who have a super vision, a super hearing, a super respiratory and facial protection, a built-in drinking system, an advanced communication system and various digital assistants using Augmented Reality, Artificial Intelligence, Computer Vision, voice control, hand tracking, body sensors.

# Problem

Deficiencies of the tactical human systems used in the U.S. and German armed forces and in NATO: a distributed communication between units and between all soldiers, an orientation and a navigation considering fast dynamic environmental factors, the effect on concentration when performing multiple simultaneous actions, disadvantages of portable wearable devices, a lack of important additional electronic functions, a high cost of modern equipment.

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Problem areas –

- quality of **communication**, accuracy of **information**
- one-to-many, multiple channels, duration of sessions
- **Cross-Domain Interaction** (land, sea, air, space)
- no written and silent voice encrypted communication
- no symbolic data exchange for instant **awareness**
- no real-time external view from drones, other viewpoints
- no friend-or-foe system for everybody
- exchange of positions, capture of enemy fire positions
- no noise filtering and detection
- low speed of **orientation** and **navigation**
- performing **multiple simultaneous actions**, delegating
- **accuracy execution** of combat tasks, **reporting**, **monitoring**
- automatic **tasks tracking**, delegation, proof of completion
- digital **ballistic measurement**, **aiming** and correction
- distributed target control
- disadvantages of portable devices, dimensions, weight
- **discomfort during prolonged wear**, wires on body
- **visibility to enemy**
- **no integration** with respiratory, facial shield, night vision, drinking system, voice communication - into each other
- **mixed live-synthetic reality training**
- not for everyone because of the **high price**

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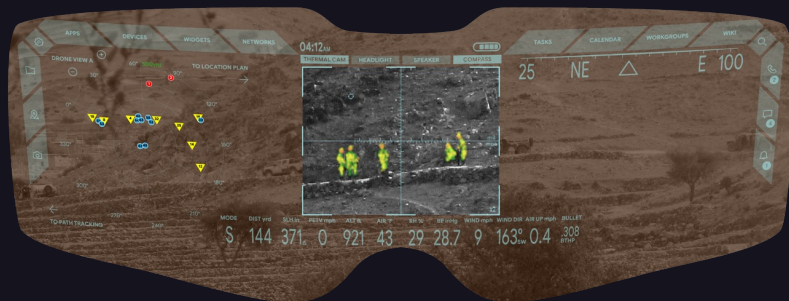
Yes, it's huge. Experts, commanders, agencies, and military-technical corporations have been discussing these issues at conferences for the past 10 years. There are concepts and new protocols, but no ready-made solutions. And this is a problem not only for the military, but also for civilian security services (police, state and private security, firefighters, rescue units).

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# Solution

We develop a product that consists of hardware modules and software kits for different roles. It is a cutting-edge solution based on existing commercially available electronic components. Our product includes a situational awareness, silent multichannel digital communications, ultimate security features in the day and night, Computer Vision, Artificial Intelligence, civilian applications and integration, a comfortable respiratory and facial protection, a built-in drinking system, body sensors. Augmented Reality Head-Up Display Fullface Mask (ARHUDFM) is the Tactical AR Electronic Device - disruptive human capabilities for a tactical advantage along with a comfortable respiratory and facial protection.



# Market

More than two-thirds of military, security, police and firefighters are potential users of the product and software. Estimate market size is >\$11 BN.

There are more than 1.7M U.S. troops, 1.6M troops of other NATO countries and 1.1M troops of allied countries (Israel, Japan and South Korea).

The number of police and security officers in the U.S., the EU, the U.K., Israel, Japan, and South Korea exceeds 3.1M. Even more private security personnel.

The number of firefighters in these countries exceeds 4.8M. The average amortization period of the product is 3-5 years.



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## Countries –

- United States
- United Kingdom
- Canada
- Germany
- Netherlands
- Belgium
- France
- Spain
- Italy
- Denmark
- Norway
- Sweden
- Finland
- Czech Rep.
- Slovakia
- Poland
- Romania
- Slovenia
- Portugal
- Switzerland
- Greece
- Israel
- Japan
- South Korea

# Business model

We work on the basis of two B2B / B2G models: Sales and SaaS for application functional modules.

Due to the fact that various agencies (DARPA, Defence Innovation Unit, Planungsamt der Bundeswehr) and military-technical corporations (Lockheed Martin Co. and other) have shown interest in our product, we are planning pilot programs and direct sales in collaboration with them, through existing channels, with strong reputations, less often through direct new tenders.

We know a fairly large number of decision-making centers not only by country, but also in each individual country. This will, in our opinion, make it possible to limit the subjectivity and bias of the dominant customers' assessments.

# Competitive environment

C5ISR CCDC (DEVCOM), DARPA, Microsoft, L3Harris, Lockheed Martin, Smart Shooter, Elbit Systems, Airbus Defense say they are working on this.

But monitoring the publications and videos we see relevant examples of only Microsoft IVAS. Test results and expert opinions do not show satisfaction with this solution. This solution has many significant differences from our product. The main thing is that Microsoft is trying to adapt for utilitarian use the totally unsuitable multimedia product HoloLense 2, created for holographic simulation, for education and entertainment. At a price that exceeds the expectations of the U.S. Defense Department's budget.

Our list of competitive excellence today is long.

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Our list of competitive excellence today is long.

How we differ -

- Active device cooling even at high air temperatures
- Battery life over 72 hours
- No external wiring and modules
- Variable transparency of the central part of the visor
- Built-in respiratory and facial protection 99.9995%
- Built-in hands-free drinking system
- Voice and hand tracking control
- Joystick control and virtual keyboard
- Oxygen level, heart rate, body temp., hydration sensors
- Built in VHF / UHF band radio
- Built-in SDR (Software Defined Radio)
- Written, symbolic and graphical communications
- Friend-or-foe identification
- Automatic capture, tracking and transmission of enemy positions, incl. out-of-sight (RDF), to other users and HQs
- Auto-tracking of own positions and execution of tasks
- Digital zoom and measurement
- Drone and external cameras view
- Digital aiming system integration
- Rear view
- Ballistic calculations and target hit tracking, corrections
- More than 10 parameters of User Friendliness
- Connectivity with C4I systems
- LiDAR, passive radar connection
- External active phased radar connection
- Missile engines heat & smoke traces
- Motion and flashes detection
- Face and object recognition
- Ambient sound filter

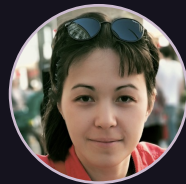
# The team and prospective team

Now we are two, Basil Boluk and Tess Volkova. We expect that two more co-founders will join us in the near future. This will strengthen our project. Right now our skills and experience cover: CustDev and Business Dev., Strategy, Marketing, R&D, CAD, Mechanical Engineering, Electronics Engineering, Embedded and MCU, Software Dev., User Experience, Manufacturing, Logistic, Scrum Agile, Management.

We have the roadmap, the backlog and the understanding of who we need more on the team, full-time and flexibly.



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Co-Founder,  
CEO / CTO



**Tess Volkova**  
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VP Software  
Development



**Vacant**  
Co-Founder,  
VP Product  
Development



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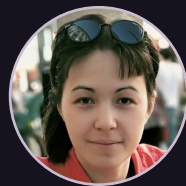
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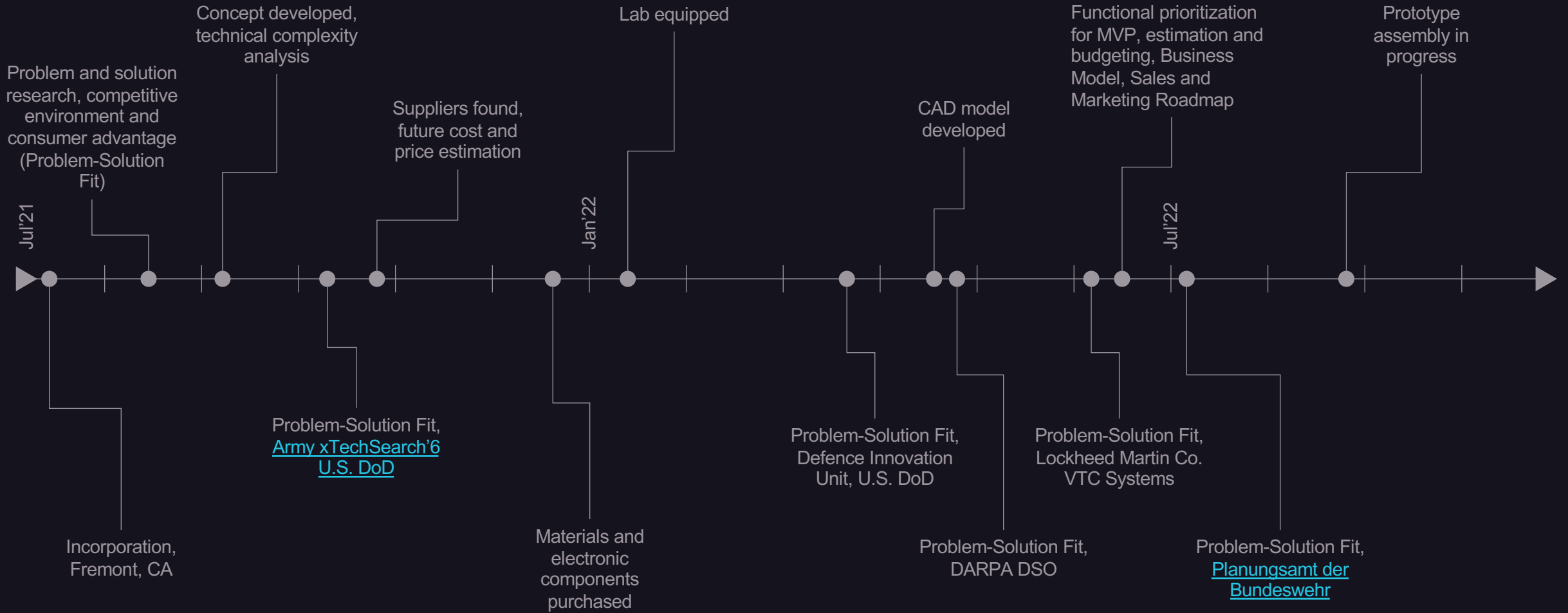


**Vacant**  
Co-Founder,  
VP R&D,  
Business  
Development

We also plan to strengthen our team by -

- Tech Lead, Software Engineering, DevOps
- Electronics Engineer
- Mechanical Engineer, CAM Engineer
- Optical Engineer
- Sr. Software Engineer
- Sr. Software Engineer
- Software Engineer and Testing.

# Traction



# Road Map

	22Q4 Sprint 1-6	23Q1 Sprint 7-12	23Q2 Sprint 13-18	23Q3 Sprint 19-24	23Q4 Sprint 24-30	24Q1 Sprint 31-36
Mech. / Optical Engineering	<ul style="list-style-type: none"> <li>Injection molds, structural improvement</li> <li>External and internal visors</li> </ul>	<ul style="list-style-type: none"> <li>Optical fiber scheme and fine-tuning of imaginary focus</li> <li>Variable dimming of the central area</li> </ul>	<ul style="list-style-type: none"> <li>Integration with SCBA pressure reducer</li> <li>Test stand</li> </ul>	<ul style="list-style-type: none"> <li>Technological cards and specifications</li> </ul>	<ul style="list-style-type: none"> <li>Production area for vacuum casting, injection molding, machining, robotic assembly area</li> </ul>	
Electronics Engineering	<ul style="list-style-type: none"> <li>Power, charging, LED, cooling circuits</li> <li>Audio circuit, Bluetooth integration with external devices</li> </ul>	<ul style="list-style-type: none"> <li>Joystick and button control circuit</li> <li>Optimizing camera operation, incl. stereo mode</li> </ul>	<ul style="list-style-type: none"> <li>Debugging with ext. radio headset</li> <li>SDR, RDF circuits</li> </ul>	<ul style="list-style-type: none"> <li>Sensor data transfer to screen</li> <li>Test stand</li> </ul>	<ul style="list-style-type: none"> <li>Technological cards and specifications</li> </ul>	
Software Development		<ul style="list-style-type: none"> <li>GUI and software control of cameras, audio, joystick and control buttons, projector</li> </ul>	<ul style="list-style-type: none"> <li>Speech-to-text, virtual keyboard, Hands Tracking</li> <li>Friend-or-Foe Identification System</li> </ul>	<ul style="list-style-type: none"> <li>Nav., maps, GPS, compass, nav. grid</li> <li>Therm. and stereo cam mixed video, night mode, SDR</li> </ul>	<ul style="list-style-type: none"> <li>Cal., workgroup, task management, voice calls, messenger, DB</li> <li>Zoom, measurement, coordinate capture</li> </ul>	<ul style="list-style-type: none"> <li>Aiming assist. and correction mode, shot history</li> <li>Route and checklist tracking, auto-log</li> </ul>
Customer & Business Development	<ul style="list-style-type: none"> <li>Acceleration program</li> <li>Pre-seed round</li> </ul>	<ul style="list-style-type: none"> <li>PR, Influencers</li> <li>Collaboration networking</li> </ul>		<ul style="list-style-type: none"> <li>MVP</li> <li>Sales Funnel</li> <li>Seed round</li> </ul>	<ul style="list-style-type: none"> <li>Field tests, expert opinions (Customer validation)</li> <li>Product-Market Fit</li> </ul>	<ul style="list-style-type: none"> <li>Sales &amp; Marketing Roadmap</li> <li>Business Model</li> </ul>



# Investition request

amount for Q4 2022 - Q1 2024 – 18 months for R&D

budget item	amount
Material costs	\$110,000
Marketing total	\$0
Personnel, 8 staff, 4 flex	\$970,000
Operating costs	\$120,000
Equipment	\$260,000
Rental and leasing	\$220,000
EBITDA	-\$1,680,000
Taxes	\$0
Net expenses	\$1,680,000

The plan is for 18 months, during which time we intend to create 7 or more iterations of the product and software apps, test under laboratory conditions (vibration, shock, cold, heat, moisture, dust, gases, acids) and get field test results in the Army and Marine Corps.

After changes based on tests, we will be ready immediately for mass production of small series and simultaneously for the construction of a robotic production line with high production capacity.

Results:

- At least 120 prototypes for Army and Marine Corps field tests in 2024.
- Opportunities to negotiate procurement contracts for mass production and regular deliveries of up to 250,000 kits within 4 years.
- Opportunities to develop the software and provide regular updates as part of the licenses in addition to procurement contracts.

In [pre-seed round](#), the goal is to iterate towards [first versions of the product, laboratory and field tests](#)

Need for investment:

\$110,000 (6%) Materials

\$970,000 (55%) Personnel

\$600,000 (34%) Fixed costs

\$70,000 (4%) Reserve

[\\$1,750,000 \(100%\) Pre-seed round funding](#)

cash flow item	amount
Pre-seed round	\$1,750,000
Sales cash	\$0
Materials	-\$110,000
Marketing (cash)	-\$0
Personnel budget	-\$970,000
Operating costs	-\$120,000
Equipment budget	-\$260,000
Rental and leasing	-\$220,000
Taxes	-\$0
Reserves	-\$70,000
Cash flow	\$1,750,000

[Full Demo on the link](#)



Thank you

Basil Boluk

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