FRONT VENTURES

Point of View & Why to Invest

The Rise of **Unmanned Ground** Vehicles

Why UGVs Could Become the Next Major Defence Technology Investment Theme

+650%	+1 600	80%	~95%	up to 30%
UGV delivery growth Ukraine 2024–2025	Ukrainian soldiers protected per month	Frontline logistics 3rd Assault Brigade	Cheaper than substitutes (weighted avg.)	Reduced Ukrainian casualties in units with UGV usage

Summary of findings - see full report for sources and assumptions made

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Report Summary

Investment Thesis

UGVs are emerging as a new major defence technology category because they solve one of the clearest problems on the modern battlefield: how to keep critical missions running while removing soldiers from the most exposed tasks.

Ukraine has not invented the UGV but has - as for aerial drones - rapidly been innovating and developing them in the last 2 years. UGVs are already being used for logistics, resupply, casualty evacuation, reconnaissance and combat support roles. Mission volumes are growing rapidly and frontline units have shifted a meaningful share of high-risk logistics to unmanned platforms / UGVs.

The investment case for UGVs is built on a rare combination of human impact, cost advantage and market timing. UGVs are also more costly and complicated to build vs the most standard arial drone models, which make UGVs a more interesting investment case. UGVs can protect soldiers and perform high-risk missions at a fraction of the cost of crewed alternatives - this is an opportunity to enter a market that is still early, fragmented and without clear global leaders.

Key Takeaways

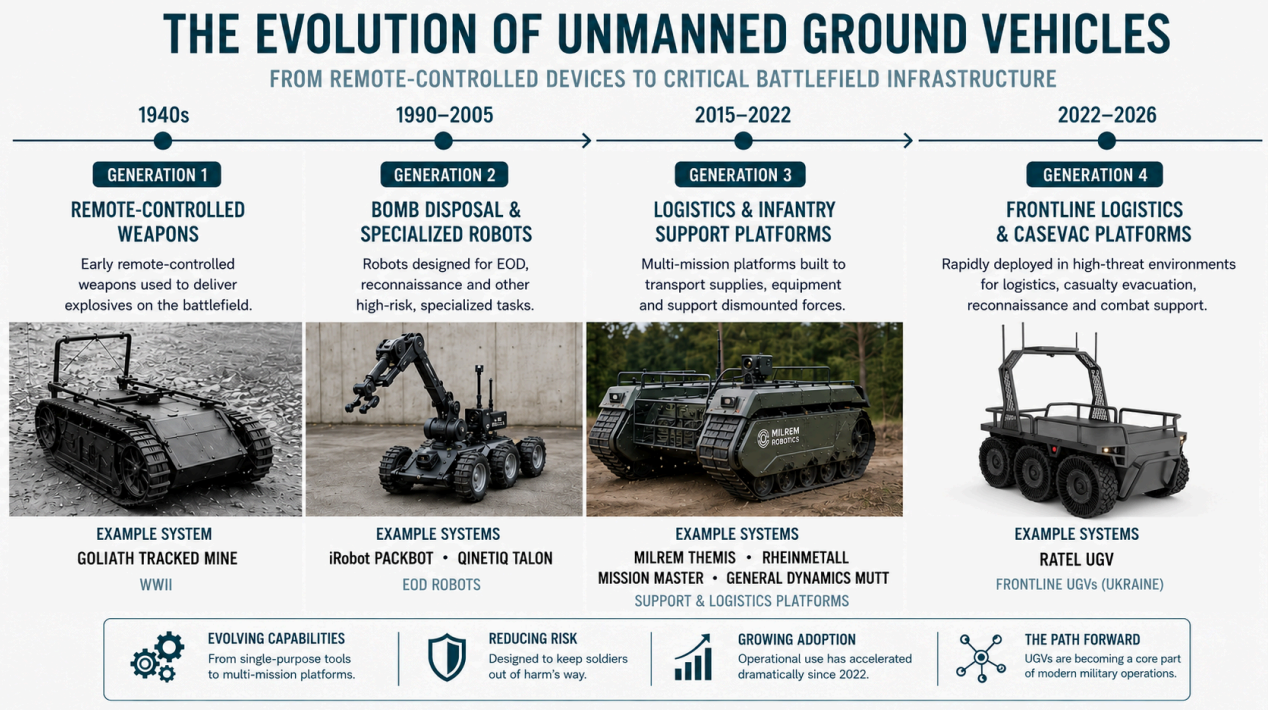
- Ukraine is the first large-scale proof point for UGV adoption, with reported deliveries increasing from approximately 2,000 units in 2024 to 15,000 units in 2025, representing 650% growth.[1]
- UGVs directly reduce soldier exposure. At current Ukrainian mission volumes of more than 9,000 ground robotic missions per month[2], our analysis in this report indicates that approximately 1 500 – 1 800 soldiers are protected from some of the most dangerous frontline tasks each month.
- The cost advantage is significant. A modern battlefield-proven UGV is estimated at around $ 35 000 compared with $ 735,000 for an MRAP 4x4 (armored tactical military vehicle) and $ 1.45 million for a Patria 6×6 CAVS.[4,5] On a mission basis, UGVs can be 10 – 26x more cost-efficient than conventional crewed vehicle alternatives.
- NATO and allied countries are beginning to absorb Ukraine's experience with several Western militaries testing, procuring or evaluating UGV systems.[6] This suggests the category could move from Ukrainian wartime necessity to a broader Western procurement theme.
- The market remains early and fragmented. With more than 60 UGV models listed on BRAVE1 Market and no clear global leader established,[7] the category offers an attractive entry point before standardisation and consolidation.

1. What Are UGVs?

Defining the UGV Category

Unmanned Ground Vehicles, or UGVs, are ground-based robotic vehicles used to perform military tasks without a soldier inside the vehicle. They can be remotely controlled, partly automated or, in some cases, operate with a higher level of autonomy.

UGVs are not a new concept. Early examples include the German Goliath tracked mine during World War II. Later systems were mainly used as bomb-disposal robots and other specialised military tools. What is changing today is that UGVs are moving from narrow support roles into broader frontline use.



Main Use Cases

Modern UGVs can be used for logistics, resupply, casualty evacuation, reconnaissance, mine clearance, mine deployment and combat support. They can carry weapons, drones, sensors and communication equipment. In this role, a UGV can act as a drone carrier, a mobile radio relay or a small forward platform for sensors and electronic systems. This makes UGVs flexible “multi-role” platforms rather than single-purpose vehicles. The same vehicle can often be adapted for different missions by changing the equipment it carries.

Why UGVs Matter Now

Most importantly, the battlefield frontline has become more dangerous for soldiers and manned vehicles in the last years. Drones have made basic ground missions much more exposed and the “frontline” is now extended to a 15-20 km wide zone on each side in what is called the “grey area” (not fully controlled by any side). UGVs help solve this by moving risk away from soldiers and allowing military units to perform dangerous missions without placing personnel directly in the “grey area” kill zone.

UGVs matter now because several developments are happening at the same time. Ukraine has created a real battlefield testing and development environment, where systems are tested, improved and ordered at high speed. Reported deliveries have increased sharply and new contracts show that UGVs are becoming a real procurement category rather than only an experimental technology. This is reflected in operational data from Ukraine's DELTA combat system: monthly UGV missions grew from 2 900 in November 2025 to over 9 000 in March 2026, a 210% increase in five months (see graph below).

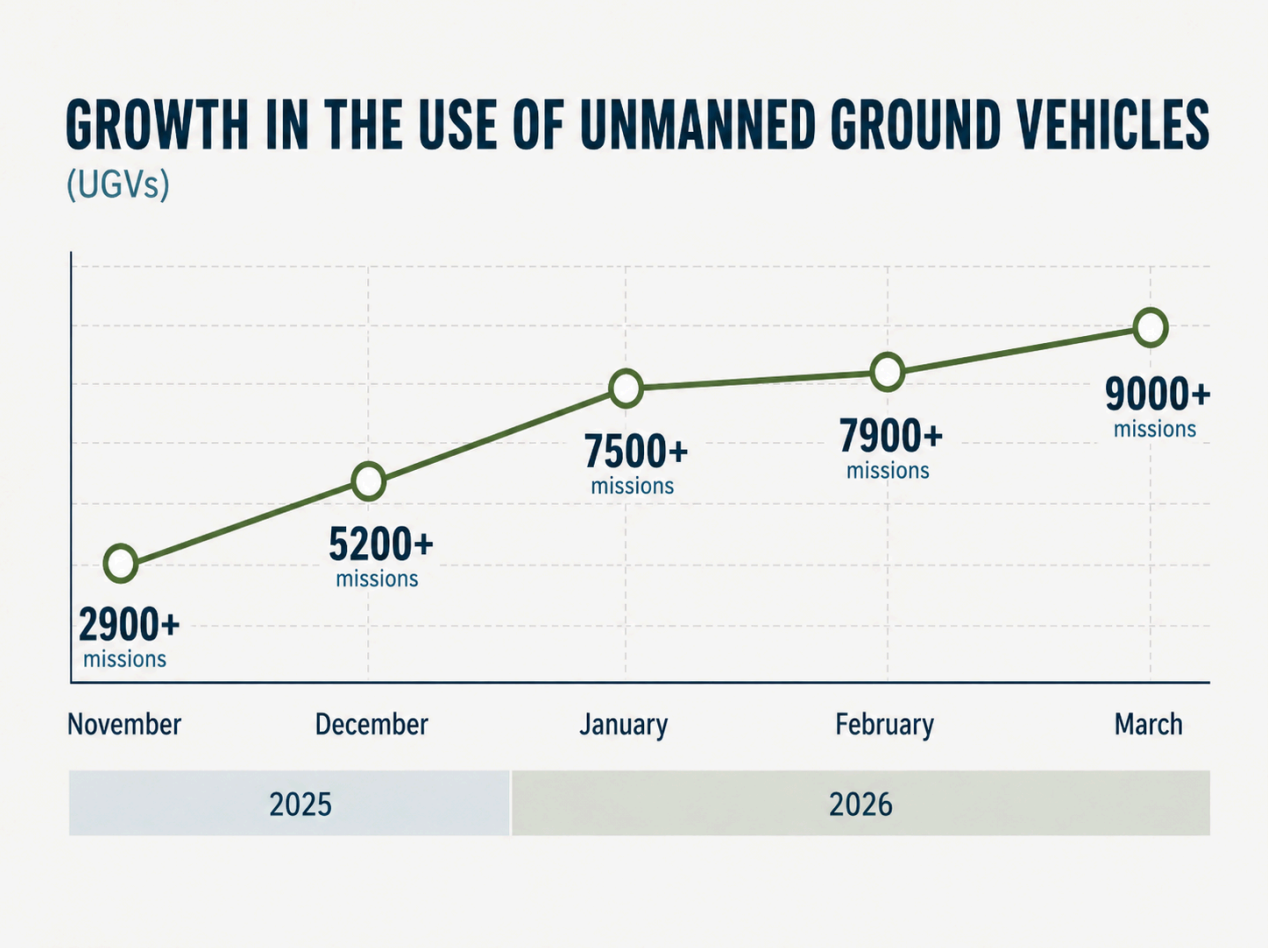
At the same time, improvements in batteries, sensors, communication systems and AI/autonomy are making UGVs more useful in practice. In many missions, a simple and affordable UGV that can move supplies on its way out and then evacuate wounded soldiers when returning. UGV's have now also been given more offensive roles and the first "UGV only" attacks have been completed including capturing prisoners without any soldiers assisting during the attack.

Communication: The Critical Enabler

UGVs should not be viewed only as vehicles. They are connected battlefield platforms whose performance depends equally on communication systems, software and sensors.

UGVs operate at or forward of the frontline, where terrain, distance and active electronic warfare can degrade or sever traditional radio control links. Ukraine's access to Starlink for satellite control has provided a material advantage in maintaining UGV control at range.[8] Russia has historically lacked an equivalent frontline system and attempted to close this gap through imported Starlink terminal and other workarounds. After Starlink access was blocked for unauthorized units in February 2026, Russias usage of UGV's has been significantly limited.

This dependency on radio control alternatives is structural, not temporary. Companies enabling resilient UGV connectivity including mesh networks, hardened radio links and satellite-enabled control systems are expected to be the winners in the UGV ecosystem.




UKRAINIAN UGV WITH
STARLINK SYSTEM

2. The Drone Revolution and the Changed Battlefield

The Transparent and Lethal Battlefield

The modern battlefield has become both more transparent and more lethal. Persistent drone surveillance, commercial ISR (Intelligence, Surveillance and Reconnaissance) and sensor networks mean that positions, supply routes and vehicle movements can be detected and targeted within minutes.[9]

Low-cost FPV (First-Person view) drones available for under $ 500 per unit can now reliably disable or destroy vehicles costing hundreds of thousands of dollars.[10] This has fundamentally altered the cost-risk equation for ground operations. Tasks previously considered routine, such as logistics, resupply and casualty evacuation, have become high-risk and high-casualty missions. The most dangerous place now is not the actual “classical” frontline, its the way to and back from the frontline. The current frontline is to be considered to be ~25 km on each side as of June 2026. This distance is expected to continue to increase as FPV drone performance is improving.

From Protecting Soldiers to Removing Soldiers

The logic of ground warfare is shifting. Historically, the goal was to protect soldiers inside increasingly armoured vehicles. Today, the more effective solution is often to remove soldiers from the most dangerous missions entirely.

UGVs fit directly into this shift. Instead of sending a crewed vehicle into an exposed position, a unit can deploy a smaller unmanned platform. If the vehicle is lost, the cost is financial rather than human.

Ukraine's 3rd Assault Brigade has reportedly shifted approximately 80% of frontline logistics missions to UGV platforms, with brigade commanders citing direct-fire exposure as the primary driver.[11] The 92nd Assault Brigade recorded a completion rate of approximately 97% using robotic platforms (58 of 60 missions) which is one of the most operationally specific and verifiable data points on UGV battlefield performance available in the public domain.[18]

The Ukrainian General Staff reports that robotic platforms have reduced personnel casualties by up to 30% in units where they have been integrated.[12,13] This figure is cited by official Ukrainian military sources and has been independently reported by the Modern War Institute at West Point and Defense News.

Same Mission. A Fraction of the Cost.

The investment case is reinforced by the cost differential. A modern battlefield-proven UGV costs in the range of $ 20 000 - 45,000, which is up to 95% less than conventional crewed platforms used for similar frontline missions.[4,5]

The cost per mission is materially lower across all scenarios. A UGV mission costs approximately $6 400, compared with $ 73 000 to $166 000 per mission for conventional crewed alternatives which is a 10x to 26x efficiency advantage.[4,5]

At current Ukrainian mission volumes of more than 9,000 ground robotic missions per month, this creates a large and measurable economic impact.[2] Depending on the assumed conventional vehicle mix, UGV adoption could generate annual savings estimated at $7.2 billion to $17.3 billion for Ukraine (see cost analysis below).

The conclusion is straightforward: UGVs can perform many of the same high-risk missions at a fraction of the cost, while also eliminating soldier exposure. This combination of lower cost, lower human risk and growing procurement volumes makes the UGV category both strategically important and commercially attractive as an investment area.

UGV Cost analysis

Key Assumptions

Missions per lifetime	Monthly missions (March 2026)	UGV acquisition cost (midpoint)
5.5 (midpoint, 5 - 6) *Applied equally to all platforms* *Source: DELTA combat system / Trinity*	**9 000+** *Ukrainian ground robotic missions* *Source: Brave1 / Delta system data, March 2026*	**$35 000** *Modern Ukrainian battlefield-proven UGV*

Note: *The cost analysis only considers the specific mission types currently performed by UGVs, such as frontline logistics, resupply and evacuation-related tasks. Conventional vehicles are therefore assumed to perform the same missions, carry the same mission load and generate the same operational output as UGVs. The analysis does not account for the fact that larger crewed vehicles may be able to transport heavier or more valuable cargo, or create additional value in other mission types where UGVs are not yet widely used.*

Conventional vehicles are also assumed to be destroyed at the same rate as UGVs, meaning equal missions per lifetime. In practice, this is likely conservative. Battlefield evidence suggests crewed vehicles may be lost faster, since they present larger thermal and visual signatures, attract heavier firepower, and require additional defensive resources to protect (vs a UGV).

1. Acquisition Cost per Platform

Platform	Acquisition Cost ($)	vs. UGV	Cost per Mission ($)[1]	Notes
Modern UGV	$35 000	-	$6 364	Ukrainian battlefield-proven
Toyota Land Cruiser	$70 000	2×	$12 727	*Civilian + military models*
Humvee M1114	$230 000	7×	$41 818	*Up-armoured HMMWV*

MRAP	$735 000	21×	$133 636	*Cougar / Oshkosh / MaxxPro*
Patria 6×6 CAVS	$1 450 000	41×	$263 636	*Armoured personnel carrier, wheel based*

[1] *Cost per mission = acquisition cost ÷ missions per lifetime (5.5). Acquisition costs from Front Ventures market analysis based on publicly available procurement and market data.*[4,5]

2. Scenario Overview - Annual Saving from UGV usage vs human driver alternatives

Scenario	Avg. Platform Cost	Monthly Cost (9,000 Missions)	UGV Monthly Cost	Annual Saving vs. UGV
Low Case *50% Land Cruiser / 50% MRAP*	$402 500	$659 M	$57 M	**$7 216 M**
Base Case *⅓ Land Cruiser / ⅓ MRAP / ⅓ APC*	$751 667	$1 230 M	$57 M	**$14 073 M**
High Case *75% MRAP / 25% APC*	$913 750	$1495 M	$57 M	**$17 256 M**

The three scenarios reflect different conventional vehicle mixes historically deployed on comparable missions. The base case assumes a balanced force structure; the low case omits armoured personnel carriers; the high case reflects an MRAP/APC-heavy force mix.

3. Monthly Cost Detail by Scenario

Metric	Low Case	Base Case	High Case
Avg. conventional platform cost	$402 500	$751 667	$913 750
Cost per mission: conventional	$73 182	$136 667	$166 136
Cost per mission: Modern UGV	$6 364	$6 364	$6 364
Conventional fleet cost / month	$659 M	$1230 M	$1495 M
UGV fleet cost / month	$57 M	$57 M	$57 M
Monthly saving vs. conventional	$601 M	$1173 M	$1438 M
Annual saving vs. conventional	**$7 216 M**	**$14 073M**	**$17 256 M**
Platforms consumed / month[2]	~1636	~1636	~1636

[2] *Platforms consumed per month = 9,000 missions ÷ 5.5 missions per lifetime ≈ 1636 units. At $35 000 / unit this is the monthly UGV fleet replacement cost for the observed mission volume.*

4. Human Impact - Lives Protected per Month

Metric	Estimate
UGV missions per month (DELTA, March 2026)	**9 000+**
UGVs lost per month (9,000 ÷ 5 – 6 missions/lifetime)	**~1 500 – 1 800 units**

Soldier protected by UGV substitution	**~1 500 – 1 800 per month**
Basis for human impact estimate	*Each mission previously required a crewed vehicle; UGV substitution eliminates that exposure on a 1:1 basis.*

These figures represent a conservative lower-bound estimate. UGVs are preferentially deployed on the highest-risk missions which is logistics under fire, forward reconnaissance, assault support where crew casualties are disproportionately likely. The actual substitution effect on soldier risk is therefore likely greater than a simple 1:1 mission ratio implies.[2,11]

5. Summary

Annual Cost Saving Range (vs. conventional fleet)	Lives Protected per Month
$7 216 M - $17 256 M *Base case: $14 073 M*	**~1 500 - 1 800** *Soldiers protected from highest-risk missions*

At current Ukraine mission volumes, deploying modern UGVs in place of conventional crewed vehicles generates annual savings ranging from $ 7.2 B (low case) to $ 17.3 B (high case), with a base case of $ 14.1 B per year.[2,4,5,14] This analysis uses a single mission-volume data point (March 2026, DELTA system); as UGV adoption scales, the absolute saving grows proportionally. The human dimension is equally material: at 9,000+ missions per month, UGVs are protecting approximately 1 500 - 1 800 Ukrainian soldiers from the most dangerous frontline tasks every month.

3. Market Growth, NATO Adoption and Western Procurement

Market Growth

The UGV market is still early, but it is growing quickly. Current market estimates place the global UGV market at around $ 3 - 8 billion in 2026, with most forecasts pointing to annual growth of roughly 9 – 12% through 2031[14] . The wide range between market estimates shows that the category is still immature. Analysts do not yet define the market in the same way, and forecasts often mix military, commercial and dual-use UGV systems.

Ukraine is the clearest example of the acceleration. UGV deliveries reportedly increased from approximately 2 000 units in 2024 to 15 000 units in 2025, representing a 650% year-on-year increase.[1] Ukraine has also contracted around 25 000 additional UGVs for the first half of 2026 alone. If the same pace continues in the second half of the year, full-year 2026 deliveries could reach approximately 50 000 units.

This would imply a further increase of ≈ 230% compared with 2025, and a 2,400% increase compared with 2024. While these figures are based on Ukrainian procurement rather than the global market, they show how quickly the category can scale once there is a clear battlefield need. The market is still fragmented, but battlefield demand is already forcing faster development and higher production volumes.

Why This Is No Longer Only a Ukraine Story

UGV adoption is not only a Ukraine-specific trend. Ukraine is the first large-scale battlefield test case, but the underlying problem is relevant for most modern militaries. Western militaries are therefore studying Ukraine's battlefield lessons closely.

UGVs are likely to move from a Ukrainian wartime necessity into a broader Western procurement theme. The investment implication is that Ukraine is proving the use case, but NATO and allied markets could drive the next stage of demand. If Western defence budgets continue to increase and militaries start applying Ukraine's lessons, UGVs could become a more important part of future force structures.

NATO and Western Adoption

UGV adoption is no longer limited to Ukraine. Several NATO and allied countries are now testing, procuring or integrating unmanned ground systems into military experimentation and early procurement programmes.

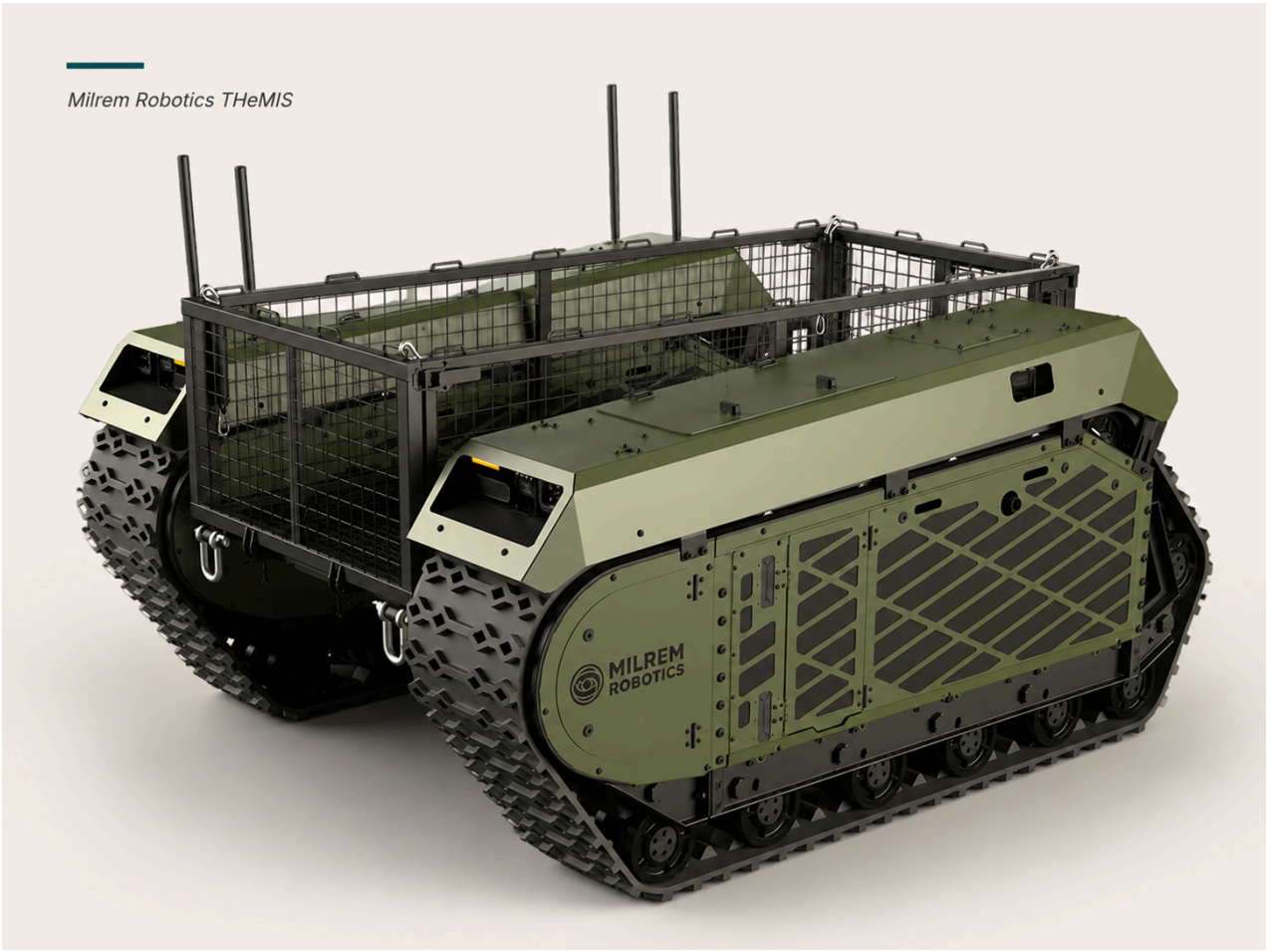
The clearest Western example is Milrem Robotics' THeMIS platform (see attached picture below). According to Milrem, THeMIS has been acquired by 20 countries, including 8 NATO members[6]. However, these acquisitions should mainly be understood as international validation rather than broad volume procurement, as many appear to involve trials, experimentation programmes or small-batch evaluations. The clearest volume case is Ukraine: in October 2025, Milrem announced the delivery of more than 150 THeMIS UGVs through a Dutch-led defence initiative, funded and coordinated by the Netherlands and partly assembled with VDL Defentec.

Other NATO examples point in the same direction. Sweden entered the category in June 2024, when FMV, FOI and the Swedish Armed Forces acquired a THeMIS Cargo UGV for trials. Overall, Western militaries are clearly moving from observation to experimentation, but large-scale procurement remains most visible in Ukraine-linked programmes rather than domestic NATO fleets.

Ukrainian UGV companies are also beginning to connect with Western markets. Tencore has agreed on cooperation with Finnish defence technology company Insta to explore production of its TerMIT UGV in Finland[15]. Several UGV vendors in Ukraine such as Trinity Robotics are now NATO-standard codified with their model, which can support future exports and cooperation with NATO countries.

Another example is UGV Laboratory's Ukrainian-made Simba platform, which took part in a NATO exercise in Latvia in 2026.[16] This is an early but important signal that Ukrainian battlefield-proven UGVs are starting to enter Western testing environments.

Milrem Robotics THeMIS



4. Key Players and Competitive Landscape

The Global UGV Ecosystem

The UGV market remains fragmented, with a mix of large defence primes, specialist robotics companies and fast-moving Ukrainian battlefield developers. Western primes such as Rheinmetall, General Dynamics and Teledyne FLIR bring procurement access, certification, systems integration and established NATO relationships. However, their platforms are often higher-cost, long development cycle and designed as premium multi-role or specialised systems. For example, General Dynamics' MUTT contract for the U.S. Army implied roughly $260 000 per system, while Teledyne FLIR's Centaur orders imply around $ 120 000 – 130 000 per robot, although these contracts often include support, spares and training.

Ukrainian and specialist robotics companies represent a different model: lower-cost, functional UGVs built around urgent frontline needs. Part of this advantage is structural. Ukraine's lower wage base reduces the cost of labour-intensive assembly, testing and rapid battlefield-driven iteration shortens development time. According to Ukraine's State Statistics Service, the average monthly salary in Ukraine was UAH 30,515 in April 2026, equal to roughly $700 per month[19]. This cost ambition was captured by a Ukrainian factory owner at the Defence Summit in Kyiv 2025, who described the goal as: "We want to be the China of Europe." The advantage for Ukraine producers is not only low wages, but the combination of cost discipline, fast production cycles and battlefield feedback. Reported Ukrainian price points are materially lower: NV (The new voice of Ukraine) reported Ukraine's TerMIT at around $30 000 and a base NUMO platform below $11 000, compared with around $300 000 for Estonia's THeMIS. The most attractive companies may therefore be those that combine Ukrainian cost discipline, battlefield validation and low-cost production with Western certification, financing and sales channels.

Company	Country	Platform / focus	Publicly disclosed deliveries / contracts	Why relevant
Milrem Robotics	Estonia / UAE	THeMIS	190+	One of Europe's most established UGV platforms. THeMIS ordered by 20 countries, deployed in 19 including Ukraine.
ARX Robotics	Germany	GEREON	200+	Delivering several hundred UGVs to Ukraine.
Rheinmetall	Germany / Netherlands	Mission Master / Ermine	20	Major defence prime with integration and procurement advantages. Contract for 20 Ermine UGVs to Ukraine.
General Dynamics Land Systems	USA	TRX	620+	Large US prime within the Robotic Combat Vehicle programme. More advanced / heavier than low-cost Ukrainian UGVs.
HDT Global	USA	Hunter WOLF	No official data	Selected for U.S. Army S-MET Increment II testing and evaluation; contract valued at $ 11.6 M.
Teledyne FLIR Defense	USA	PackBot / SUGV / Centaur	500+	One of the largest historical suppliers of military ground robots, particularly EOD, CBRN, and recon.
Tencore	Ukraine	TerMIT	2000+	Among Ukraine's most relevant UGV actors. 2,000+ units delivered; building production capacity in Europe.
Ratel	Ukraine	Ratel UGVs	No official data	Battlefield-tested Ukrainian actor. Scaled production nearly fivefold in one year.

Company	Country	Platform / focus	Publicly disclosed deliveries / contracts	Why relevant
DevDroid	Ukraine	Droid TW 12.7 / NW 40	No official data	Armed UGV specialist. TW 12.7 reported sustained frontline use for 45+ consecutive days.
Shark Robotics	France	Tactical / emergency robots	No official data	European robotics actor; JV partner with Tencore for UGV production.

5. What Will Separate Winners From Losers?

From fragmentation to consolidation

Ukraine's UGV market is fragmented. While broader defence-innovation sources point to more than 280 companies and over 550 UGV solutions,[17] the more relevant signal is BRAVE1 Market[7], Ukraine's state-backed defence technology marketplace for military units. The platform currently lists more than 60 UGV models and variants, giving frontline units access to different models.

BRAVE1 Market functions as a procurement bridge between military demand and defence-technology suppliers. Units can browse available systems, compare solutions and order technologies for frontline needs, making the marketplace an important indicator of which platforms have moved beyond early prototypes and into a more structured military procurement environment.

The number of listed systems highlights both the scale of innovation and the fragmentation of the market. Many platforms still address overlapping use cases, and the category has not yet standardised around a small number of dominant designs or suppliers. As procurement volumes increase, the market is likely to move from broad experimentation toward consolidation.

Technical Complexity Creates a Defensible Moat

UGVs face a higher technical barrier than for example, aerial drones. While many drone platforms can be assembled from commercial components and iterated relatively quickly, ground robotics must operate in a more physically demanding environment. They need to handle rough terrain, mud, snow, electronic warfare, payload weight, battery constraints, remote control, autonomy, survivability and mechanical reliability under combat conditions.

This complexity also extends into production. UGVs require more mechanical engineering, heavier materials, drivetrain components, suspension systems, payload integration and quality control. Scaling production is therefore not only a question of sourcing electronics and assembling airframes, but of building reliable vehicles that can withstand repeated physical stress in harsh environments.

This may reduce commoditisation risk for high-quality platforms. In drones, rapid standardisation and low-cost manufacturing have already created strong price pressure. UGVs may face some of the same dynamics over time, but the mechanical, operational and production requirements are harder to replicate.

What Will Define the Winners

Modular Design and Fast Adaptability

Winning UGV companies will likely need platforms that can be adapted quickly across different mission types. The same base vehicle should ideally support multiple configurations, including logistics, casualty evacuation, mine-related tasks, reconnaissance, communications relay or armed support.

This makes modularity important. The ability to change payloads, sensors, communication systems, weapon stations or evacuation modules allows one platform to serve several customer needs without redesigning the entire vehicle. In a market where battlefield requirements change quickly, platforms that can be updated in weeks rather than years should have a clear advantage.

Scalable Production Capacity

The winners will also need to move beyond prototypes and small-batch production. In Ukraine, UGVs are used in high-risk frontline missions, where losses are expected and demand is increasing rapidly. This makes production capacity a core competitive factor. Companies that can scale while maintaining reliability, quality control and delivery speed will be better positioned as procurement volumes increase. European production links may become especially important for NATO customers, where certification, supply-chain security and long-term procurement requirements matter more.

Easy Maintenance and Field Serviceability

UGVs must be simple to repair, maintain and operate close to the front line. Platforms that require specialised maintenance teams, rare spare parts or complex workshop conditions may struggle in real battlefield environments.

The strongest systems are likely to be those that soldiers can service quickly with available parts, limited tools and basic training. This is already becoming part of the Ukrainian model: Ratel and Tencore have mobile service teams that travel directly to military units to maintain, repair and upgrade robotic platforms. Easy maintenance reduces downtime, increases mission availability and improves the number of missions each platform can complete before being lost or withdrawn from service.

Cost-Effectiveness Over Technical Perfection

The winning platforms do not need to be the most advanced or expensive systems. As the Russia-Ukraine war has shown, in many frontline use cases “good enough” performance at low cost and high volume are more preferred on the frontline over “premium” solutions. Drones and UGV’s is seen as consumable material in the same way as ammunition.

This is especially important because UGVs are often used for dangerous missions where higher rate of losses are expected; including resupply over exposed/open terrain, evacuation, mine-related tasks and combat support. Affordability is therefore not just a commercial advantage, but an operational requirement. The key is to combine acceptable battlefield performance, reliable production capacity and a low enough unit cost to support volume deployment.

Reliable Communications and Battlefield Software

Reliable communication systems are essential because UGVs operate across difficult terrain, distance and electronic warfare contested environments.

Winners will need resilient communications, fallback autonomy and software that keeps the vehicle useful even when signal quality is degraded. Companies that combine robust hardware with strong software, communications and control systems redundancy will be more successful vs hardware focused producers. For satellite connections its will be important to have access to several satellite options, not just Starlink.

6. Key Risks

From Battlefield Validation to Scalable Western Adoption

Western Adoption and Procurement Risk

A key risk is that Western defence adoption may be slower than the technology case suggests. While the battlefield need for unmanned ground systems and other autonomous defence technologies has become clearer, Western militaries are still largely organised around traditional procurement structures, long development cycles with multiyear budget commitments to established suppliers.

Large defence budgets do not automatically translate into fast adoption of new startups / innovative technologies. NATO and European defence customers often rely on long-term framework agreements, certification processes and existing weapons systems. This may make it difficult for smaller Ukrainian and European defence tech companies to move from battlefield validation / “demo and test days” to get larger volume / high value procurement contracts.

There is also a cultural and organisational risk. Western armed forces may understand the need for innovation, but still be slow to adjust doctrine, training, maintenance systems and procurement processes around new categories such as UGVs. If adoption remains slow, UGV companies may stay dependent on Ukraine internal purchases for longer than expected.

Competitive Risk

The defence tech market may become increasingly crowded. As demand grows, more startups, defence primes and industrial manufacturers will enter the UGV market. Smaller companies may have speed and battlefield feedback as an advantage today, but larger defence companies have stronger balance sheets, production capacity, distribution channels, government relationships and existing NATO customer access. They may be able to copy or outscale smaller players once the market opportunity becomes clear.

There is also a risk that companies from adjacent markets shift into UGVs and similar categories. Manufacturers with existing production capacity, engineering know-how, off-road vehicle experience or military distribution channels may adapt their current platforms toward unmanned systems. Polaris’ RZR-based Quad offroad used for a UGV conversion is one example of how existing vehicle manufacturers can move closer to the UGV market.

The UGV companies therefore need to maintain a clear cost advantage, fast iteration of their combined solution (UGV base, software control, communication options) and get ability to scale before better-capitalised competitors enter the same niche.

Regulatory, Export Control and Geopolitical Risk

Defence technology is heavily regulated and export restrictions can directly limit growth. Ukrainian defence companies currently face restrictions on the export of many weapon systems, which may make it difficult to sell internationally even when there is clear demand. In addition, ITAR (International traffic in arms regulation), EU export controls, sanctions rules, military end-user restrictions and national security reviews can slow down commercial expansion.

The future development of the war is also a major uncertainty. Current demand and rapid product development are partly driven by Ukraine’s urgent battlefield needs. The war has created a unique environment where companies can test, improve and validate products directly in combat conditions. This has strengthened the investment case, but it also means that part of the growth seen now in 2025-2026 is linked to the intensity of the war with Russia. Even if Ukraine is likely to continue buying defence technology after the war, companies will need to prove that they can also sell to NATO and other allied countries. If the war slows down, ends, or Western support changes, the strongest companies may still succeed, but the broader market could become more selective. This increases the importance of international sales, regulatory approvals and perhaps partnerships with Western defence manufacturers.

7. Why Invest in UGVs?

A Rare Combination of Urgent Demand, Human Impact and Cost Advantage

Saves Soldiers' Lives

The strongest argument for UGVs is simple: they remove soldiers from the most exposed frontline tasks. UGVs solve a direct human problem: they allow military units to keep critical missions running while reducing the need to place soldiers inside the kill zone. As shown in the cost analysis, current Ukrainian mission volumes imply that UGVs are already protecting approximately 1 500 - 1,800 soldiers per month from some of the most dangerous frontline tasks.

Strong Growth in Ukraine, with NATO Likely to Follow

Ukraine is proving the UGV category in real combat. Reported deliveries increased from approximately 2,000 units in 2024 to 15,000 units in 2025, representing around 650% year-on-year growth. Ukraine has also contracted approximately 25 000 additional UGVs for the first half of 2026 alone.[1]

The systems are no longer only prototypes but are now being used at scale. NATO adoption is starting to get visible. Western militaries are testing and evaluating unmanned ground systems, while Ukraine is generating battlefield data. As NATO countries absorb these lessons, demand could shift toward cheaper, unmanned and more distributed ground platforms.

Higher Mission Completion and Force Multiplication

UGVs improve mission outcomes because they allow commanders to attempt missions that would otherwise be delayed, cancelled or require heavy protection. A UGV does not need to survive for the mission to be successful. If it delivers ammunition, evacuates a wounded soldier, scouts a route, lays mines or draws enemy fire without exposing personnel, it has still created operational value. By also shifting part of the workload to unmanned systems, units can preserve manpower for tasks where human judgement is more important which has started to become a clear trend and a must for the West.

UGVs can also be harder and less attractive targets than crewed vehicles. They are small, low-profile and battery-powered, giving them a lower visual and thermal profile than larger combustion-engine vehicles. Since they are lower-value platforms, the enemy may also be less willing to spend high-value munitions on them compared with armoured vehicles carrying soldiers.

Significantly Lower Cost

The cost advantage is one of the clearest investment arguments for UGVs. Based on the cost analysis, a modern Ukrainian battlefield-proven UGV is estimated at around $35 000, which is materially below conventional crewed alternatives used for similar high-risk frontline missions.[4] [5]

This matters because the modern battlefield has made expensive crewed vehicles increasingly vulnerable. Cheap FPV drones and precision systems can disable or destroy vehicles worth hundreds of thousands or even millions of dollars. UGVs improve the cost-risk equation by reducing the value exposed to enemy fire while also removing soldiers from the platform.

New Battlefield Multi-Role Platform

UGVs are not limited to one mission type. The same base platform can often be adapted through payloads, sensors, communication systems and mission kits. This allows one vehicle family to support logistics, casualty evacuation, reconnaissance, mine-related tasks, drone launch, communications relay or armed support.

This modularity is especially valuable in Ukraine, where battlefield requirements change quickly. A platform that can be reconfigured in weeks rather than years can remain relevant as tactics evolve. Flexible UGV platforms currently therefore have an advantage over standard infantry transportation vehicles.

Early-Stage Market with No Clear Market Leaders

The UGV market is still immature and fragmented. The ground robotics market has not yet standardized around a small number of dominant designs or suppliers. For investors, this creates an attractive entry point. The category is growing quickly, but the winners have not yet been decided.

Civilian and Emergency Use Cases as Additional Upsides

Although defence is the main near-term investment driver, ground robotics also have potential outside the military. Similar capabilities can be used in environments where human exposure is dangerous, expensive or inefficient.

Firefighting, disaster response, hazardous material handling and industrial inspection are relevant examples. In these settings, ground robots can enter dangerous areas, carry sensors and gather information before humans are exposed to risk.

This should be viewed as additional upside rather than the core investment case. Near-term demand is defence-led, but the underlying capabilities such as remote operation, rugged mobility, sensor integration, autonomy and operation in dangerous environments can support broader civilian markets over time.

Final Investment Conclusion

- UGVs solve one of the main problems on the modern battlefield: how to protect soldiers and manage logistics and front line support with an always present drone threat
- Ukraine has proven the category in real combat, showing rapid adoption, significant cost advantages vs current transportation options
- With NATO still in the early stages of adoption and no clear market leaders established, UGVs represent an early-stage defence tech market with significant upside.

Data points on Why to Invest in UGVs:

+650%	+1 600	80%	~95%	up to 30%
UGV delivery growth Ukraine 2024–2025	Ukrainian soldiers protected per month	Frontline logistics 3rd Assault Brigade	Cheaper than substitutes (weighted avg.)	Reduced Ukrainian casualties in units with UGV usage

Summary of findings - see full report for sources and assumptions made

Want to know more or support Ukrainian defence innovation?

See our website: https://frontventures.se/

Invest with us, we trade at: NGM Nordic Growth, with ticker symbol: FRNT B

Notes and Data Sources

Mission volume: DELTA combat system (Ukraine), March 2026.[2] Verified data point appropriate for external use.

Missions per platform lifetime: 5–6 (midpoint 5.5).[3] Source: operational data cited by Trinity Group / Ukrainian defence reporting. Note: this figure is operationally sourced and carries uncertainty; it is applied equally across all platforms as a conservative, analytically transparent assumption.

Vehicle mix scenarios: defined by Front Ventures based on observed Ukrainian battlefield force structures.

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