Segmented Combat Wheels: the innovation that changes military mobility

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When talking about military technology, one immediately thinks of drones, sensors, and armor. But in the field, it is often something much simpler that decides whether a vehicle “lives” or “dies”: mobility. A flat tire, in an area full of debris and shrapnel, can stop a vehicle and turn it into a target or a logistical problem.

From this need arises a curious and promising solution: **segmented airless wheels**, developed by the Ukrainian startup **Qirim Technology**, designed to **eliminate the risk of punctures** by replacing the traditional tire with a structure of solid modules mounted on a metal frame.

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How it works: modules replaceable in minutes

Instead of a “continuous” air-inflated tire, the wheel is composed of **interchangeable segments**: if a part is damaged, there is no need to change everything. **Only the affected segment is replaced**, reducing downtime and repair complexity, especially in difficult operational conditions.

According to the company, the segments can also be produced with **recycled vulcanized rubber** and are designed to maintain traction and flexibility on challenging terrains like mud and snow, typical of frontline scenarios.

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Why it interests the future of the “wheeled fleet” (including Italian)

This technology is particularly suitable for **unmanned ground vehicles (UGV)** and unmanned vehicles: platforms that operate in areas full of metal fragments and often cannot afford long or risky repairs. A UGV stopped due to a puncture can mean a failed mission, or worse, recovery under threat.

Qirim Technology also claims that the system is **scalable** in various sizes, with the prospect of adapting it to larger vehicles. For a modern army, the direction is clear: fewer stops, less vulnerability, more operational continuity. For the Italian Army, a possible “realistic” path would be to observe and test these wheels first on **ground robotics and engineering vehicles**, where the advantage of not stopping for a tire is immediate and measurable.

News link: https://qirim-technology.com/