Expanding Duty of Care: Provision of Frequency Analysers for Frontline Humanitarian Networks in Ukraine

Text and statistics updated as of Jan 20 2026

Nonviolent Peaceforce and Safer Access Ukraine intensive training on short-range drone safety with Vilniy Kharkiv Volunteers. Kyiv, Ukraine. Vilniy Kharkiv Volunteers. 2025.

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The undersigned local humanitarian organisations—
whom are among those most directly affected by drone-related threats in Ukraine— endorse the inclusion of frequency analysers, alongside accompanying Drone Awareness Training, as essential components of standard duty of care programming.

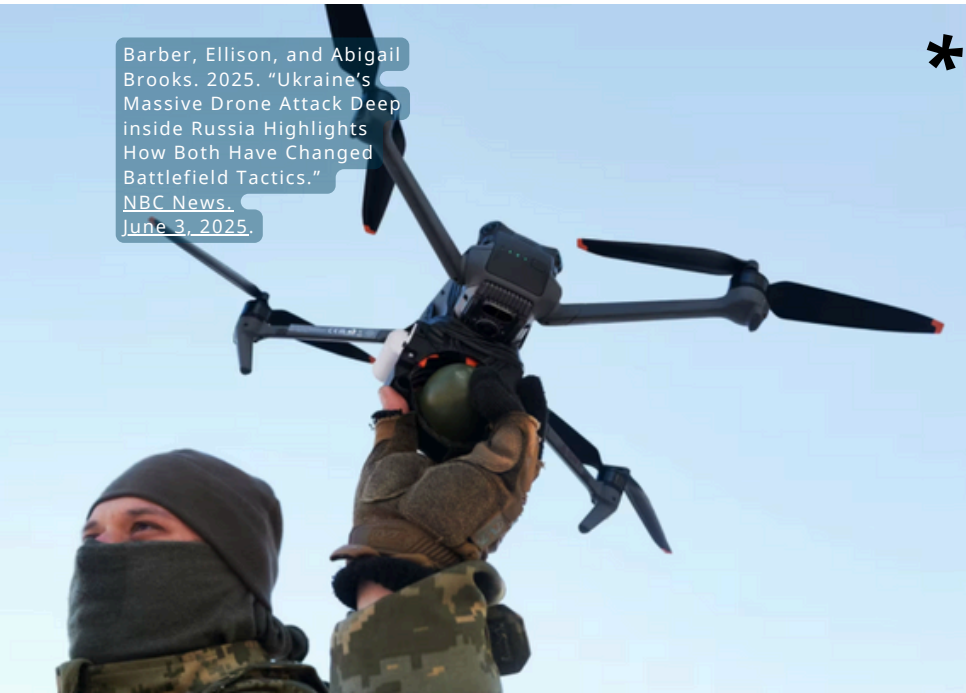
I. Executive Summary

Combat attack drones have become the deadliest threat to humanitarian operations in Ukraine. Short-range ICUAV (*Improvised Combat Unmanned Aerial Vehicles*) drone attacks escalated from 31 incidents in 2022 to 26,493 by the end of 2025, with casualties rising from 2 to 5,136 over the same period—3,290 casualties occurred in 2025 alone, representing a 96% increase compared to 2024.[1] Local humanitarian organisations conducting frontline operations bear disproportionate exposure to this threat and have repeatedly requested support in obtaining frequency analysers (FAs) — passive radio wave detection devices that provide real-time alerts about drone presence.

FAs enable proactive threat avoidance through early warning systems and informed decision-making allowing operators to take mitigative actions. In several documented cases, FA early warnings prevented casualties by enabling evacuation teams to shelter during artillery strikes, postpone or delay operations until threats have passed, and evade incoming drones through rapid acceleration and evasion protocols. What could have been grave security incidents became testaments to the effectiveness of early warning systems.

The humanitarian imperative is clear: international actors cannot continue asking local partners to accept catastrophic risk without providing proven protective technologies. This represents both immediate lifesaving intervention and strategic adaptation to modern warfare's impact on civilian protection. As ICUAV drone threats expand globally, the frameworks developed in Ukraine will inform sector-wide approaches to emerging threats. The question facing the humanitarian community is not whether the technology works—it does—but whether we will respond to local partner needs with the urgency that the threat environment demands and the courage that our localisation commitments require.

1. Information taken from INSO's Conflict & Humanitarian Data Centre (CHDC).



Barber, Ellison, and Abigail Brooks. 2025. "Ukraine's Massive Drone Attack Deep inside Russia Highlights How Both Have Changed Battlefield Tactics." NBC News. June 3, 2025.

* *This document uses the terminology "Improvised Combat Unmanned Aerial Vehicles (ICUAVs)", a designation that is widely accepted across security, protection, and humanitarian risk-analysis sectors. While these systems are often colloquially referred to as "FPV drones," FPV (First Person View) describes a commonly used mode of operation rather than a category of weapon or platform. The term ICUAV more accurately captures the diversity of commercially available and military allocated or modified unmanned aerial vehicles (attack drones) that are repurposed and employed with improvised submunitions by drone operators. Although ICUAV does not denote a single drone type, it reflects the predominant form of low-cost, highly adaptable aerial attack systems currently posing risks to civilians, first responders, and local humanitarians across frontlines globally.*

To improve the safety of humanitarian operations through the use of frequency analysers, NP recommends that the humanitarian community:

"Chuika 3.0 by BlueBird (1.2 GHz, 3.3 GHz, 5.8 GHz)." 2025. “Устройство радиоэлектронной разведки — Детектор дронов ‘Чуйка 3.0’ от BlueBird (1.2 ГГц, 3.3 ГГц, 5.8 ГГц).” Blue Bird. February 27, 2025.

1. **Establish an advisory group** comprised of protection specialists, International Humanitarian Law (IHL) and security experts, along with local humanitarian representatives to guide FA implementation and ensure decisions are grounded in both legal compliance and field realities.

2. Integrate **standardised training** curricula into existing Duty of Care frameworks, security and evacuation protocols, ensuring FAs enhance safety rather than build overconfidence.

3. **Establish an information management system** to measure impact — capturing both quantitative data (threat detection rates, evacuations safely completed, emerging trends) and qualitative lessons learned.

4. **Develop comprehensive frameworks** addressing maintenance, sustainability, technical updates, equipment replacement, and local production capacity to ensure long-term autonomy within humanitarian networks.

5. **Donor engagement** to highlight the cost-effectiveness and scalability of proactive protection measures including frequency analysers.

II. Context: ICUAV Attack Drones and Their Increasing Relevance

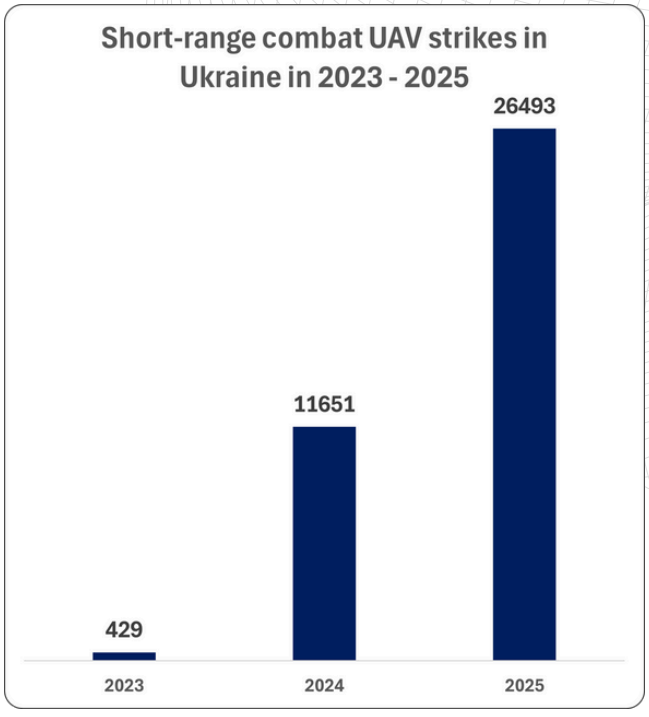
The evolution of ICUAV attack drones, commonly referred to as ‘FVP’ drones, has created an unprecedented threat to humanitarian operations. These weapons first appeared at scale in Iraq and Syria in 2016, and the Nagorno-Karabakh conflict of 2020 provided warning of how drones extend vulnerabilities beyond military targets to civilian populations. Ukraine represents the full realisation and normalisation of this threat at a scale previously unimaginable. ICUAV drones combine lethality with accessibility in ways that traditional munitions do not. They are fast, manoeuvrable, inexpensive, and manually piloted in real-time by operators who can select and track specific targets. Unlike conventional artillery or air strikes, ICUAV drone attacks represent deliberate, sustained targeting of individual civilians and humanitarian assets. A common use of ICUAV drones has been to relay information for precision targeting of clearly marked humanitarian vehicles, medical facilities, evacuation routes, and individual civilians.

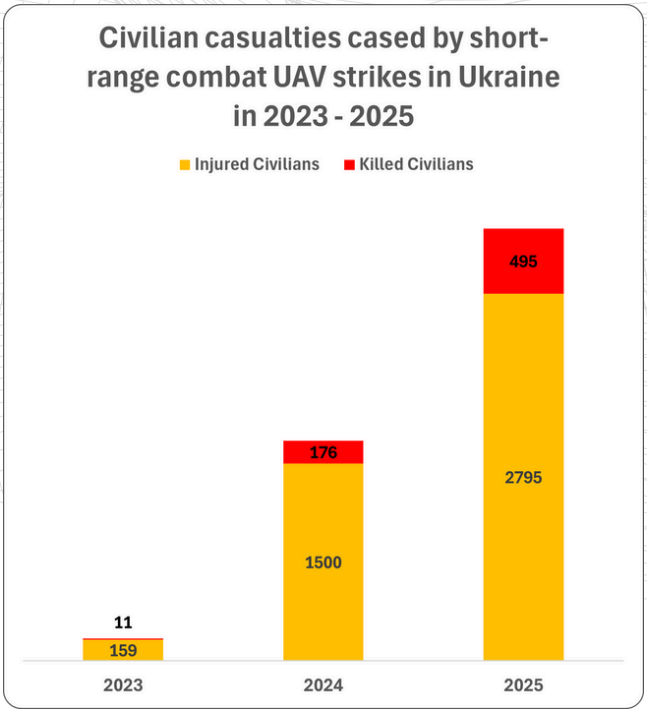
A heavily damaged BaseUA evacuation vehicle is seen with parts of its structure torn apart, in an unspecified location in Ukraine. The Kyiv Independent. February 19, 2025.

Reported casualty tolls reflect this escalation and lethality: confirmed casualties from targeted ICUAV drone attacks increased from 170 in 2023 to a staggering 5,136 by December of 2025. Attacks are accelerating rapidly — 3,290 casualties occurred in 2025 alone, accounting for 21.36% of all reported casualties and representing a 96.3% increase compared to 2024. These trends are in line with a staggering increase in ICUAV reported attacks. In 2023 there were 429 strikes reported, this number increased to over 26,493 by the end of 2025.[2]

Another worrying use of ICUAV attack drones has been to relay information for precision targeting of clearly marked humanitarian vehicles (33 were targeted by ICUAV attack drones in 2025), medical facilities, evacuation routes, and individual civilians. It must be noted that true numbers are expected to be significantly higher as not all strikes and civilian casualty events are formally documented.

2 Information taken from INSO's Conflict & Humanitarian Data Centre (CHDC).





Information taken from INSO's Conflict & Humanitarian Data Centre (CHDC)

Current early warning systems (air raid sirens, missile alert systems, and traditional security protocols) are designed for conventional threats and provide little to no protection against ICUAV drone attacks. This leaves humanitarian teams exposed in environments where ICUAV attacks can occur at any moment and even a few seconds of warning can be the difference between a fatal mission and survival.

The documented use of ICUAV drone attacks against humanitarian assets reveals systematic targeting despite international markings and protected status under international law. An attack against the armoured frontline evacuation vehicle of BASE UA on January 30, 2025, resulted in limb amputations for humanitarian workers, showing that even the highest level of protective equipment, designed for conventional threats, cannot fully protect civilians against targeted drone strikes. A February 12, 2025, attack on a World Food Programme convoy in Kherson directly targeted international humanitarian symbols, confirming that humanitarian visibility provides no practical protection. A later strike on a Proliska evacuation vehicle occurred on April 20, 2025, during a declared "Easter Day Truce," further underscoring the threats ICUAVs pose along frontlines as traditional munitions are withheld.

Documented incidents of targeted ICUAV drone attacks against humanitarians:

- Jan 30, 2025: BASE UA vehicle attack; traumatic injuries reported.
- Feb 12, 2025: World Food Programme convoy attacked in Kherson.
- April 20, 2025: Proliska evacuation vehicle struck during a declared truce.
- May 16,2025: ADRA with WFP humanitarian truck targeted in Kherson region.
- Oct 14, 2025: UN (OCHA, WFP, WHO) convoy attacked in Kherson region.
- Nov 8, 2025: Proliska evacuation vehicle attacked in Donetsk region.

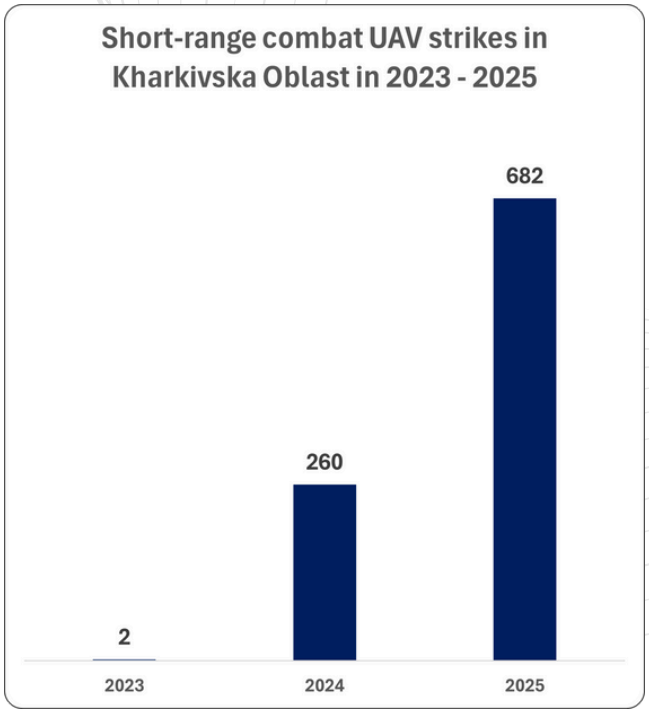
Local humanitarian organisations continue to conduct the bulk of frontline humanitarian activities in Ukraine, and are therefore disproportionately exposed to ICUAV drone risks. International actors have largely withdrawn from the highest-risk areas, leaving local partners to maintain essential services with limited protective resources. These organisations operate under resource constraints that prevent investment in protective technologies available to better-funded international actors, creating a protection gap that contradicts stated donor and international agency commitments to localisation and responsible partnership.

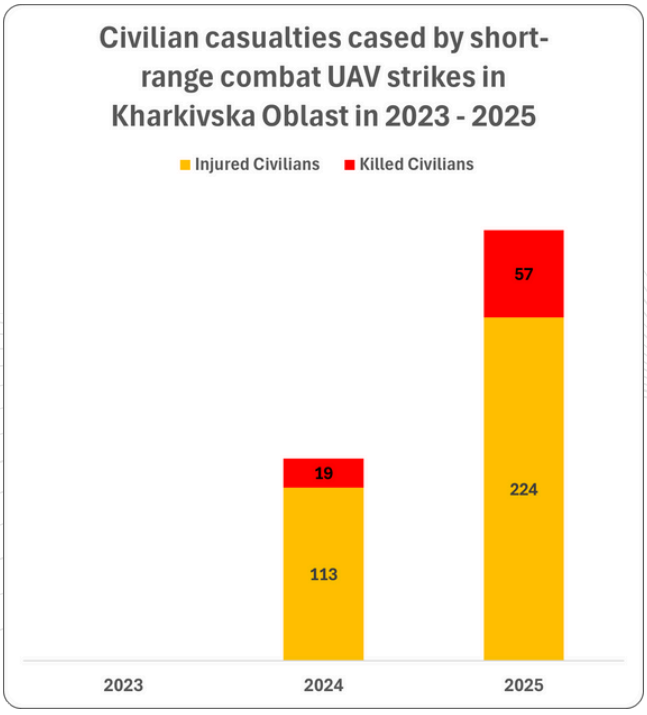
In general, international donors and humanitarians have responded to local partners' requests for drone mitigation technology with risk aversion. As one Kherson-based humanitarian noted: "International organisations do not understand the real-world utility and lifesaving potential of these devices and are avoiding the conversation entirely due to ignorance of these technologies. Their hesitation means [the] lives and limbs of our staff and the civilians we help."

This disconnect between international policy discussions and frontline realities represents a failure of the localisation agenda when protection needs are most acute.

At the same time, there are emerging examples of responsive and responsible donor practice that demonstrate what meaningful and adaptive duty of care can look like in high-risk environments. Support from the Ukraine Humanitarian Fund (UHF) and the Swiss Agency for Development and Cooperation (SDC) has enabled the expansion of duty of care measures to include frequency analysers alongside drone awareness training, responding directly to frontline protection needs. In parallel, the UK's Foreign Commonwealth & Development Office (FCDO) support for drone awareness training (DAT) has contributed to improving risk understanding and behavioural mitigation among local humanitarian actors. These approaches provide a practical model for how donors can responsibly engage with evolving threats while remaining grounded in humanitarian principles and frontline realities.

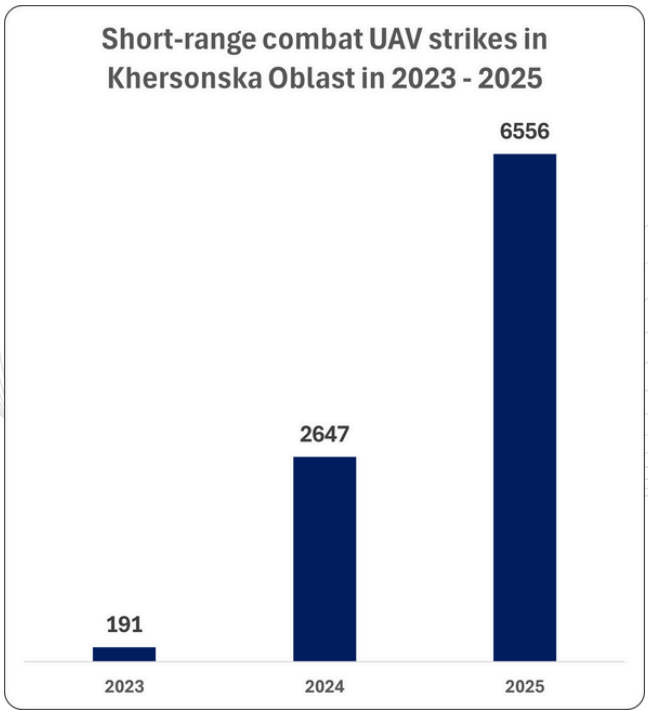
Kharkivska Oblast

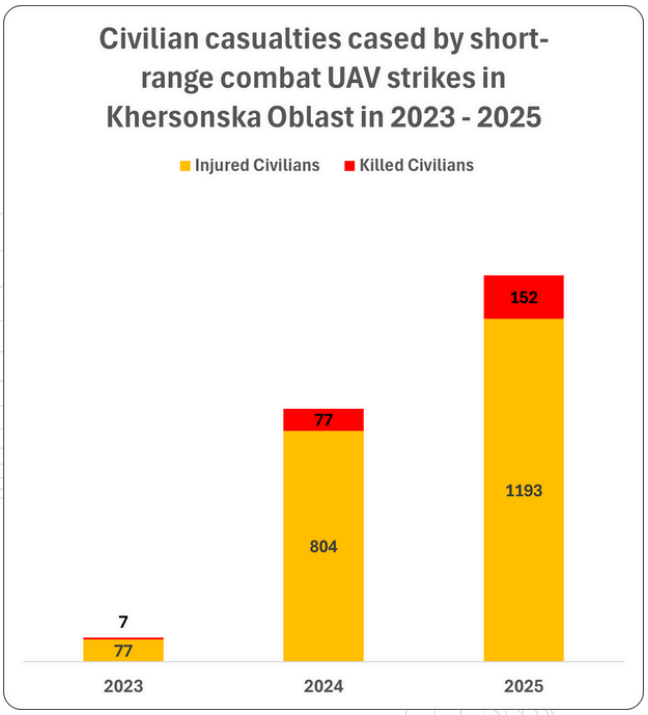




Information taken from INSO's Conflict & Humanitarian Data Centre (CHDC)

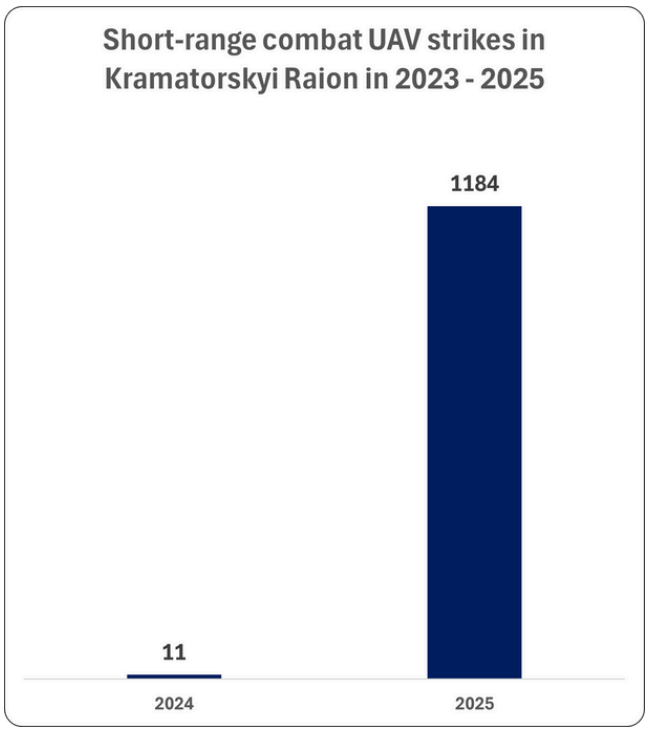
Khersonska Oblast

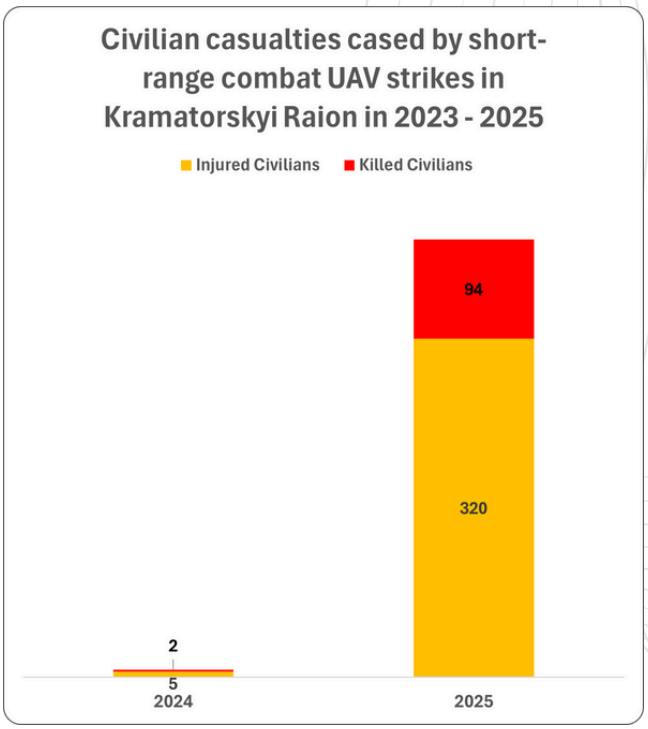




Information taken from INSO's Conflict & Humanitarian Data Centre (CHDC)

Kramatorskyi Raion





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III. Response: Frequency Analysers as Protective Technology

Frequency analysers represent a measured response to an extreme threat environment. These passive detection devices scan electromagnetic spectrum ranges used by ICUAV, FPV, and reconnaissance drones, providing real-time alerts about drone presence without actively engaging military systems or compromising humanitarian neutrality.

Nonviolent Peaceforce provides frontline partner networks with FAs through a phased, principled approach designed to strengthen civilian protection while safeguarding humanitarian neutrality. Provision begins with mandatory training that builds technical competence and operational judgment, explicitly addressing device limitations to prevent overconfidence. Responsible use is then formalised through ethical and institutional safeguards, including MoUs that prohibit any blurring of civilian–military boundaries, strict information security protocols, and ongoing compliance monitoring. Devices are subsequently supplied in a controlled manner under NP's Duty of Care framework, prioritising trusted partners and high-risk frontline areas such as Kherson and Donetsk, with gradual scale-up to ensure quality and accountability. Throughout use NP and partners document lessons learned and share standard operating procedures through humanitarian coordination channels, ensuring that all information generated remains within humanitarian networks and upholds neutrality, distinction, and International Humanitarian Law.

FA detection capacities vary from 500 meters to 35 kilometres depending on signal strength and environmental conditions, providing a critical early warning that can save the lives of frontline responders. The devices can be operated by humanitarian staff with minimal training.

The passive nature of frequency analysers preserves humanitarian principles under IHL frameworks, not interfering with ongoing combat, while providing actionable threat information for frontline workers and first responders. FAs operate similarly to other information tools already accepted in humanitarian programming, including missile alert applications, air raid warning systems, and security communication networks. FAs receive information without transmitting signals, making users undetectable to enemy systems and maintaining the distinction between humanitarian and military actors.

Field use has demonstrated concrete protective value from the use of frequency analysers by local humanitarian actors. In one documented case, an NP-supported evacuation team received an early warning alert from their frequency analyser while preparing to evacuate a civilian. Rather than proceed with the evacuation, the team was able to shelter with the evacuees while an reconnaissance drone was correcting artillery from Russian Forces. The ensuing artillery strikes caused damage to the evacuation car, but importantly no one was

injured and the team was able to continue with the evacuation when it was safe to do so. In another instance, evacuation teams operating in Donetsk used frequency analysers combined with video signal interception to identify drone presence at a planned evacuation site, postponing operations for two consecutive days until a safe window emerged for safe civilian evacuation.

Case Study: Frequency Analyser Prevents Potential Tragedy in Kupiansk

In August 2025, an NP-supported evacuation team operating in the high-risk Kupiansk area detected an incoming ICUAV drone signal, which was immediately transmitted through the FA's video feed, providing a crucial, lifesaving early warning. Applying NP's drone awareness and mitigation training, they accelerated the vehicle speed from 90 to 150 km/h and evaded the attack as the drone crashed nearby instead of hitting the vehicle. The team reached a safe space in a pre-identified shelter and informed the mission leader of the incident, monitored the ongoing threat with FA and other information channels, and delayed further movement until the situation improved. The team subsequently informed civilians of the delay and the ongoing increased threat level and advised them to remain in shelter until conditions improved.

Result: No casualties. No damage. A likely tragedy was prevented through early warning with FA.

This case demonstrates why frequency analysers represent a paradigm shift in civilian protection—from reactive damage control to proactive threat avoidance. What could have been a grave security incident instead became a testament to the effectiveness of early warning systems and rapid response procedures.

Frequency analysers are relatively low-cost with available options ranging from basic detection devices costing approximately 52 USD to advanced systems with artificial intelligence enhancement and smartphone integration for under 800 USD. Ukrainian manufacturers have developed specialised variants optimised for local threat environments, ensuring equipment relevance and sustainable maintenance support. Software updates provided by manufacturers ensure devices remain effective as drone technologies evolve.

Kupiansk: During an NP-and-RCC supported evacuation, a frequency analyser detected an incoming drone signal and transmitted it in real time through the FA video feed. This provided a crucial, lifesaving early warning. August 9, 2025.

Frequency analysers offer preventative capabilities that enable humanitarian teams to avoid dangerous situations by allowing them to see threats rather than blindly facing unknown danger. Armoured vehicles, personal protective equipment, and emergency medical training provide event-reactive protection but do not reduce fundamental exposure to threats. This represents a critical shift in risk consent and informed decision-making.

Limitations and Concerns

Limitations to the effectiveness of frequency analysers must be acknowledged. FAs cannot detect fibre optic drones that operate independently of radio frequencies. Such drones are currently less commonly encountered by humanitarian actors as economic and operational constraints limit their deployment. However, this trend is subject to change as manufacturing barriers are reduced.

FAs provide early warning of drone presence but cannot guarantee absence of threats when no signals are detected. Proper training emphasises these limitations to prevent overconfidence while maximising protective benefits within the technological constraints.

It is imperative that FAs are framed as an additional layer of protection, not as a stand-alone mitigation, one that is embedded within larger security frameworks.

IV. Conclusion and Way Forward

Protecting humanitarians is the foundation of protecting civilians. This approach represents both immediate risk reduction and a long-term model for adapting humanitarian operations to a new generation of conflict related threats. It embodies a fundamental commitment to protection equity and localisation that moves beyond policy rhetoric to concrete action. Local humanitarian organisations have clearly articulated their needs, demonstrated their capacity, and accepted the risks of frontline service. The international community's response will define if localisation commitments have substance when protection needs are most acute.

Humanitarian work has always required adaptation. There is a need to evolve protective strategies to match emerging threats. Frequency analysers represent a necessary evolution in how humanitarians protect themselves. Local humanitarian organisations are not asking for perfection—they are asking for tools that improve their odds.

Legal analysis confirms that passive drone detection for humanitarian protection does not constitute Direct Participation in Hostilities under International Humanitarian Law. The technology maintains clear distinction from military assets while providing actionable information that enables protective responses. This legal foundation supports principled deployment that preserves humanitarian status while acknowledging operational realities in modern conflict environments.

The strategic implications of humanitarian FA use extend beyond Ukraine's immediate context. ICUAV drone threats are expanding globally as the technology becomes more accessible. Humanitarian ICUAV security frameworks developed in Ukraine will inform sector-wide approaches to this emerging threat.

The implementation for FA technology should reflect urgency balanced with responsible partnership principles. The window for action is narrowing. As drone-related casualties climb, local organisations face impossible choices between accepting disproportionate risks to conduct lifesaving activities and their own personal safety. Frequency analysers represent a lawful, low-cost, and field-tested mitigation that falls within existing humanitarian frameworks.

Documented threat detection and successful protective responses provide concrete evidence of impact. Reduced casualty rates among participating organisations offer quantitative measures of effectiveness. Broader acceptance and adoption by other humanitarian actors indicate scalability and sector relevance.

V. Recommendations

Protecting those who protect others demands immediate action. The humanitarian system must evolve faster than the threats it faces. The integration of FAs into Duty of Care frameworks is a practical, proven, and lawful step that can save lives now. To achieve the successful integration of this tool NP recommends that the humanitarian community:

1

Advisory and Coordination Framework
Establish an advisory group comprised of protection specialists, International Humanitarian Law and security experts, along with local humanitarian representatives to guide FA implementation and ensure decisions are grounded in both legal compliance and field realities. This body would develop and circulate adaptable and evolving SOPs on emerging mitigation strategies and FA usage grounded in humanitarian principles. The body should also have strategic engagement with UN OCHA, the Access Working Group, Protection Cluster representatives, and civil-military liaison structures.

2

Comprehensive Training Integration and Capacity Development
Integrate standardised training curricula into existing security and evacuation protocols, ensuring FAs enhance safety rather than build overconfidence. Training modules must address both technical operation and ethical parameters, emphasising limitations to prevent overconfidence.

3

Evidence-Based Learning and Sector-Wide Knowledge Sharing
Establish an information management system to measure impact — capturing both quantitative data (threat detection rates, evacuations safely completed, emerging trends) and qualitative lessons learned.

4

Sustainability and Local Ownership Framework
Develop comprehensive sustainability frameworks addressing maintenance, technical updates, equipment replacement, and local production capacity to ensure long-term autonomy within humanitarian networks.

5

Donor Engagement and Policy
Engage donors to highlight the cost-effectiveness and scalability of proactive protection measures. Adapt modalities within existing funding models to rapidly accommodate emerging protective strategies that enhance safety and operational continuity, recognising that preventing harm is more efficient than responding to it. Utilise evidence generated in Ukraine to inform Global Standards for protecting civilians and humanitarians in all high-risk environments, leading to the formal integration of drone mitigation technologies into standard Duty of Care (DoC) packages across the humanitarian landscape.

Appendix – NP's Comprehensive Implementation Framework

Nonviolent Peaceforce is committed to deploying frequency analysers responsibly, anchored in humanitarian principles and designed to be integrated into larger security frameworks.

Phase 1: Training and Awareness

One or two-day workshops build both technical capacity and operational understanding. Using simulation and field exercises, NP trainers teach teams to integrate FA data into real-time decision-making. Trainings specifically highlight limitations and blind spots of FAs to reduce overconfidence. No devices will be distributed without completion of this training.

Phase 2: Ethical and Institutional Safeguards

NP works with partners to define responsible use through Memoranda of Understanding (MoUs) that prevent any blurring of civilian and military boundaries. Continuous compliance reviews will ensure the devices are used solely for humanitarian protection. Partners commit to information security protocols that prevent any intelligence sharing with military actors. Strong relationships, vetting, and trust are foundational.

Phase 3: Controlled Deployment and Co-Mentoring

Devices are distributed under existing NP Duty of Care frameworks. Partner selection prioritises organisations with established track records of principled humanitarian action and existing relationships with NP that are built on mutual trust and support. Geographic focus on frontline areas like Kherson and Donetsk oblasts reflects both acute threat levels and accessibility for training and technical support. The approach scales gradually to ensure quality control and lessons learned are integrated before broader deployment.

Phase 4: Learning and Sector Dissemination

NP, along with partners document impact and share lessons learned through local and national humanitarian coordination channels. Standard Operating Procedures (SOPs) will be developed and shared across the sector. All information gathered through FAs will remain within humanitarian networks to preserve neutrality and distinction under International Humanitarian Law.