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INSIGHT

Integrating Uncrewed Aerial Systems into Ceasefire Agreements: Challenges, Risks and Responses

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Acronyms and abbreviations

GPS	Global Positioning System
ICRC	International Committee of the Red Cross
IED	Improvised explosive device
ISR	Intelligence, surveillance and reconnaissance
MINUSMA	United Nations Multidimensional Integrated Stabilization Mission in Mali
NATO	North Atlantic Treaty Organization
OSCE	Organization for Security and Co-operation in Europe
SMM	Special Monitoring Mission to Ukraine (OSCE)
UAS	Uncrewed aerial system
UAV	Uncrewed aerial vehicle
UNIFIL	United Nations Interim Force in Lebanon

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Executive summary

Ceasefires are intended to stop violence, separate forces, protect civilians and create space for political dialogue. By changing how conflicts are fought, uncrewed aerial systems (UASs) have made ceasefires harder to negotiate, monitor and administer. Parties to the conflict can use UASs to conduct surveillance and limited strikes with little risk to their own forces, which enables them to maintain military pressure while claiming to respect a ceasefire. UASs also make violations harder to detect and attribute and allow external actors to influence events without being party to the agreement.

Recent ceasefires show common challenges relating to UAS use, including:

- UAS surveillance and limited strikes continuing in a grey area where their use is not clearly regulated
- Monitoring and verification missions lacking tools to detect and investigate UAS activity
- UAS flights over civilian areas and humanitarian routes creating fear, disrupting aid operations and weakening confidence in the ceasefire

This UNIDIR Insight proposes a menu of practical options adaptable to different conflicts, organized around seven lines of effort:

1. Shared understanding and scope
2. Regulation of UAS activity, including clearly defining which UAS activities are allowed and which are prohibited
3. Protection of fragile ceasefire phases
4. Monitoring, detection and attribution
5. Responsibility and external actors
6. Protection of civilians and humanitarian actors
7. Sequencing and adaptation of UAS restrictions

As UASs become a permanent feature of modern conflict, ceasefire agreements must address them from the outset. Clear, practical and adaptable rules on UASs are now essential if ceasefires are to reduce violence, protect civilians and support lasting political dialogue. This UNIDIR Insight offers practical guidance for mediators and monitoring and verification mechanisms on adapting ceasefire design to UAS-saturated conflicts. An appendix provides a set of operational considerations for incorporating UAS-related provisions into ceasefire agreements and monitoring them. It also sets out five implementation conditions without which UAS provisions are unlikely to be credible: clear operational orders; notification and liaison; protection of vulnerable movements and sites; monitoring and incident management; and review and political follow-up.



African Union-UN Hybrid Force patrols West Darfur, 30 March 2011. Credit: UN Photo/Albert Gonzalez Farran

1. Introduction

The rapid spread of military uncrewed aerial systems (UASs)[1] has reshaped aspects of contemporary armed conflict. States and non-State actors now use them for surveillance, targeting, coercion and signalling,[2] with significant implications for ceasefires. Traditional ceasefire frameworks were designed for conventional conflicts where violence is visible and attributable, which allows monitors or third parties to verify compliance. Making violations costly both politically (through international condemnation) and operationally (through casualties and material loss) underpins trust-building, confidence and gradual de-escalation. UASs complicate these assumptions. They facilitate parties' undertaking of actions, such as intelligence, surveillance and reconnaissance (ISR), that can weaken trust in the ceasefire but that may not be considered a violation (unless explicitly addressed in the agreement). They also allow overt violations of a ceasefire in a manner that is difficult to verify and attribute.

While UASs share some of their capabilities with other technologies, their novelty lies in their rapid spread and accessibility. The ability of even modestly resourced armed actors to deploy UASs has effectively

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1 An uncrewed aerial vehicle (UAV), also known as a drone, is an aircraft that has no human pilot or passengers on-board. These vehicles can be controlled remotely, can fly autonomously or a combination of both. An uncrewed aerial system (UAS) encompasses not only the UAV but also all the software, hardware, payload, pilot and communications systems required to operate the vehicle, including ground control stations and data links.

2 Signalling is the use of limited actions, such as small strikes or restraint, to send messages about intentions and resolve. Stockholm International Peace Research Institute (SIPRI), "SIPRI Yearbook 2025: Armaments, Disarmament and International Security, Summary", 2025, https://www.sipri.org/sites/default/files/2025-08/yb25_summary_en_v2.pdf, 10–11; Office of Counter-Terrorism and Conflict Armament Research, *Global Report on the Acquisition, Weaponization and Deployment of Unmanned Aircraft Systems by Non-State Armed Groups for Terrorism-related Purposes* (New York: United Nations, 2024), https://www.un.org/counterterrorism/sites/default/files/2024_unoct_car_global_report_web.pdf, viii–ix, 1–2, 45–54.

eroded the monopoly that State actors typically had over airspace. This complicates ceasefire monitoring and verification activities. When only one party could exploit airspace, monitors could easily attribute aerial activity to that party. Now they must instead treat airspace as a shared, contested domain, with explicit rules on who may fly what, where and when.

This UNIDIR Insight focuses on UASs or aerial "drones", as opposed to ground or maritime systems. To examine how widespread the use of UASs is in ceasefire situations and its effect on the implementation and credibility of ceasefires, the author:

- Engaged in extensive discussions with armed actors in several conflict settings in which UASs are present and operationally relevant
- Conducted interviews with experts involved with deploying UASs in peace operations
- Reviewed the records of the United Nations Security Council, reports of the United Nations Secretary-General, peace operations and Panels of Experts, and reports of the Organization for Security and Cooperation in Europe (OSCE) Special Monitoring Mission to Ukraine (SMM)
- Examined guidance of the International Committee of the Red Cross (ICRC), and policy and academic literature on ceasefire mediation, monitoring and the use of UASs

These sources were used to identify recurring patterns in how UASs affect the negotiation, monitoring, verification and implementation of ceasefires, and to draw illustrative examples from recent and ongoing conflicts, including in Lebanon, Libya, Mali, the Syrian Arab Republic and Ukraine.

This report is intended to support mediators, ceasefire negotiators, monitoring and verification mechanisms, and the conflict parties themselves in anticipating and addressing UAS-related risks in the design and implementation of ceasefires. It offers a menu of options, rather than a single model, recognizing that appropriate choices will depend on the type and purpose of the ceasefire, the UAS capabilities of the parties, the involvement of external actors and the resources available to monitoring and verification mechanisms. UAS provisions can reduce ambiguity and create safer incident-management arrangements, but they cannot compensate for the absence of political commitment or agreed consequences for persistent non-compliance. The report covers ceasefires of different types and durations, from short humanitarian pauses and local cessations of hostilities to longer-term arrangements linked to disengagement, withdrawal or cantonment. This UNIDIR Insight does not provide a legal analysis of the use of UASs under international humanitarian law or under international human rights law, nor does it assess the performance of specific UASs or counter-UAS technologies; UAS-related ceasefire provisions operate alongside, and do not replace, applicable international law.

Section 2 of this report outlines what ceasefires are designed to do and the assumptions on which traditional ceasefire models rest. Section 3 then examines the main types and functions of UASs and how their use challenges those assumptions, including through ambiguity, early-phase fragility, weak monitoring capacity, stand-off operations, civilian harm, fragmented responsibility, and threats to ceasefire monitoring, verification and implementation. Section 4 sets out a menu of options for addressing UASs in ceasefires, organized around seven Lines of Effort, together with the implementation conditions needed for UAS-related provisions to be credible. Finally, Section 5 provides the conclusion, while Appendix A provides illustrative operational considerations for implementing UAS-related ceasefire provisions.



United Nations Protection Force in Croatia and Bosnia and Herzegovina. A soldier from the Danish Battalion (DanBat) calibrating a night-scope in preparation for the evening's watch, 2 September 1992. Credit: UN Photo/John Isaac

2. What ceasefires do

Politically, ceasefires function as both signals and bargaining tools. Agreeing to enter into a ceasefire can indicate a party's willingness to de-escalate or engage in talks. Refusal to agree to a ceasefire, or the violation of an existing agreement, can signal a party's intent to seek a military victory, rather than a negotiated solution. Ceasefires are structured arrangements that impose temporary rules on the activities of parties in order to halt or reduce violence and to create space for political talks or humanitarian initiatives that are otherwise difficult to pursue during full-scale hostilities.[3]

Through their implementation, ceasefires seek to lower the intensity and scope of violence, allow the safe and controlled repositioning or withdrawal of equipment and forces, and through monitoring and verification mechanisms to "enhance the accountability of parties and increase the predictability of their actions, with the aim of contributing to the sustainability and credibility of the ceasefire".[4] To achieve this, ceasefires specify:

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3 The United Nations differentiates between different types of ceasefires, based on dimensions such as their relationship to the broader peace process, their focus and the number of parties involved. See Department of Political and Peacebuilding Affairs, "Guidance on the mediation of ceasefires", September 2022, https://peacemaker.un.org/sites/default/files/document/files/2025/09/csg-desktop2025.pdf, 6.

4 Department of Political and Peacebuilding Affairs, "Guidance on the mediation of ceasefires", 52.

- **Timing:** when the ceasefire comes into effect and for how long
- **Geographic scope:** e.g. cities, zones or entire territories
- **Activities that must stop:** e.g. offensive operations, mine-laying or recruitment
- **Acceptable activities:** e.g. agreed re-positioning of forces or equipment, opening of routes, demining
- **Where forces may remain** or where they must withdraw from and to

Provisions relating to movement are usually agreed using maps, timelines and defined zones, and the overall provisions are usually recorded as codes of conduct or lists of permitted or prohibited activities. These protocols regulate the behaviour of the conflict actors (including at times irregular units allied to them) during the ceasefire. They are monitored through agreed verification and liaison mechanisms, which record alleged violations, facilitate clarification, and support political or operational follow-up.

In this Insight, an "incident" is any reported or observed event involving UASs that may be relevant to the ceasefire, while a "violation" is an incident that has been found, through the agreed procedure, to breach the agreement.

Technically and procedurally, ceasefires depend on observability and verification. Traditional models assume that most violence is visible or detectable by monitors whose work is informed by an understanding of the actors present and their ability to operate in certain domains, including airspace. Monitoring and verification mechanisms:

- Record, detect and verify alleged violations
- Assess whether the violations breach the agreement
- Prescribe corrective action



KNDF UAV Department (1 July 2023), Facebook Status Update, 25 July, 2023. Credit: KNDF UAV Department

While the aim is to deter violations from happening, when violations do take place, monitors can prevent them from escalating and can take steps to discourage recurrence. This relies on clear definitions, lists of permitted and prohibited activities, standardized reporting, set timelines against which to verify behaviour, and the ability to identify and verify actual or potential breaches of the agreement.

Classic ceasefire models assume that violations will be visible and will leave physical or electronic evidence that can be investigated and assigned to responsible actors. They also assume that the threat of international criticism, reputational damage or reciprocal escalation will be sufficiently costly that it will deter systematic non-compliance. The widespread use of UASs challenges each of these assumptions because these systems:

- Erode the confidence-building function of ceasefires by allowing military pressure to move the threshold or continue to act below the threshold of an open violation
- Reduce the detectability of violations
- Complicate the attribution of responsibility where multiple, affiliated or external actors are involved

Ceasefire architecture varies from one context to another, but it usually includes a political or joint body that oversees implementation, technical or military committees, liaison arrangements between the parties, and a mechanism to monitor and verify compliance. Monitoring refers to observing, recording and reporting activity relevant to the agreement; verification refers to assessing whether that activity complies with the agreement, which may lead to findings, recommendations or corrective action. Monitoring and verification mechanisms range from party-led joint arrangements, via mixed models that include third parties, to fully third-party missions; they are often deployed and reach full capacity progressively. All of these models are affected by UASs, but the options available to address them depend on each mechanism's mandate, composition and resources.

The following section explains how the widespread use of UASs complicates the logic and implementation of ceasefires.

3. How UASs challenge ceasefires

Understanding the impact of UASs on ceasefires depends on how parties use them during fighting and periods of nominal restraint such as ceasefires.[5] Today, armed actors integrate UASs across many types of mission, far beyond simple surveillance or strike. Key patterns are outlined in Table 1.

TABLE 1

Typical uses of UASs in contemporary conflicts

Function	Description
Intelligence, surveillance and reconnaissance (ISR)[6]	Monitoring forces, tracking movements, gathering information and supporting decision-making
Target acquisition	Locating, identifying and tracking targets for artillery, missiles or air strikes
Strike operations	Delivering explosives or conducting direct attacks, including through loitering munitions
Communications relay	Extending communications networks or maintaining links in contested environments
Logistics	Delivering supplies, ammunition or equipment
Psychological operations and signalling[7]	Demonstrating capability, recording operations and influencing perceptions

UASs should not be treated as a single category for ceasefire purposes: the risks they create are determined not only by their technical characteristics, but also by how, where and for what purpose they are used during a ceasefire.

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5 Bárbara Morais Figueiredo, "The use of uncrewed aerial systems by non-State armed groups: Exploring trends in Africa". Geneva: UNIDIR, 2024. https://unidir.org/publication/the-use-of-uncrewed-aerial-systems-by-non-state-armed-groups-exploring-trends-in-africa/

Joshua Angelo Estrada Bata and Bárbara Morais Figueiredo, "The use of uncrewed aerial systems by non-state armed groups: Exploring trends in Myanmar". Geneva: UNIDIR, 2026. https://unidir.org/publication/the-use-of-uncrewed-aerial-systems-by-non-state-armed-groups-exploring-trends-in-myanmar/

Sarah Grand-Clément, "Armed and Dangerous? A Brief Overview of Uncrewed Aerial Systems: Risks, Impacts and Avenues for Action". Geneva: UNIDIR, 2024. https://unidir.org/publication/webinar-series-summary-armed-and-dangerous-a-brief-overview-of-uncrewed-aerial-systems-risks-impacts-and-avenues-for-action/

6 The North Atlantic Treaty Organization (NATO) describes the components of ISR as follows: intelligence is the final product derived from surveillance and reconnaissance, fused with other information; surveillance is the persistent monitoring of a target; and reconnaissance is information-gathering conducted to answer a specific military question. Both surveillance and reconnaissance can include electronic observation including through UASs, however surveillance is a more prolonged and deliberate activity, while reconnaissance missions are generally rapid and targeted to retrieve specific information. NATO, "Joint Intelligence, Surveillance and Reconnaissance", 8 July 2026, https://www.nato.int/en/what-we-do/deterrence-and-defence/joint-intelligence-surveillance-and-reconnaissance.

7 Karen Allen, "Drones: A propaganda tool for Africa's armed groups?", ISS Today, Institute for Security Studies (ISS), June 2025, https://issafrica.org/iss-today/drones-a-propaganda-tool-for-africa-s-armed-groups.

Different systems have different ranges, endurance, payloads, control links, launch methods and operational effects; each creates different risks for civilian protection, verification, attribution and escalation (see Table 2). The relevant distinction is not always whether the system is armed or unarmed or the platform itself; a small unarmed UAS may support targeting, while a larger system may be used solely for approved monitoring activities.

TABLE 2

UAS types and characteristics

Category	Illustrative characteristics	Main ceasefire concern
Small multirotor and commercial UASs	Short-range, low-altitude systems used for local observation, payload delivery or adapted attack	Difficult detection; persistent local surveillance; rapid, low-signature attacks
First-person-view (FPV) and one-way attack UASs	Remotely piloted or pre-programmed systems designed to strike a target and be expended	Direct attack; deniability; launch from outside restricted areas
Loitering munitions	Systems that search for, identify or wait for a target before attacking	Persistent threat; ambiguity between surveillance and attack; rapid strike after target acquisition
Tactical fixed-wing UASs	Medium-range systems used for ISR, communications relay or target acquisition; some are armed or adapted for strike	Cross-line surveillance; support to indirect fire; collection of information on protected movements
Larger long-endurance or armed UASs	Systems capable of wide-area surveillance, prolonged flight and, in some cases, precision strike	Strategic surveillance and strike; external operators; airspace and political-control issues
Monitoring and humanitarian UASs	Unarmed platforms operated or authorized by the monitoring and verification mechanism or humanitarian actors	Need for notification, data protection, safe access and protection from interference

The airspace in which UASs operate also matters. Most small and tactical systems fly in the lowest layer of airspace (sometimes described as the “air littoral”), where they are hardest to detect, below the altitudes usually covered by air-traffic control or conventional no-fly zones. Larger systems operate at higher altitudes and over longer distances. Control links matter as well: systems controlled by radio frequency can in principle be detected, jammed or traced to their operators, whereas fibre-optic (wire-guided) or pre-programmed systems emit little or no signal and are therefore harder to detect, counter or attribute. Weather, terrain and electronic interference constrain when and where all types of UAS can be used and also affect monitors’ ability to observe them. These factors shape both the risks that UASs pose to a ceasefire and what can realistically be monitored.

Because the risks created by UASs are determined by how, where and for what purpose they are used during a ceasefire in addition to their technical characteristics, agreements should regulate both the types of system and the activity they perform. This should include cross-line flight, persistent loitering, target acquisition, fire adjustment, delivery of a payload or authorized monitoring. Agreements also need to consider:

- Who operates UASs?
- Where can they operate?
- What information can they collect?
- How is their data stored and shared?
- Do their flights require notification or approval?

UASs complicate each element of the ceasefire logic outlined above. They allow parties and external actors to observe, probe and sometimes strike across wide areas without exposing their forces, often leaving little ground-verifiable evidence. By making any concentration of forces visible and vulnerable, they constrain manoeuvring, supply lines, and medical and casualty evacuation. They also extend the distances over which forces can threaten each other, with direct implications for how wide separation zones need to be to minimize the risk of clashes. Intelligence gathering, continuous surveillance and limited drone strikes can also allow parties to keep applying military pressure while appearing to respect the ceasefire. As a result, fighting may seem to have stopped on the ground, but can continue from the air, reducing trust and eroding the core confidence-building value of a ceasefire.

The following nine subsections summarize the main problems that arise when ceasefires are implemented in UAS-saturated environments. Section 4 then translates them into concrete options for the design of ceasefires, with Appendix A providing illustrative operational considerations for UAS-related ceasefire implementation.

3.1 Ambiguity and lowered coercion costs

If a ceasefire agreement does not clearly cover the use of UASs, then there will be ambiguity over what constitutes a ceasefire violation and, more broadly, over how the ceasefire is to be implemented. Armed strikes are generally accepted as violations, but surveillance flights can serve both legitimate and hostile purposes. For example, a UAS observing a checkpoint could support ceasefire verification, but the same imagery could also identify vulnerabilities for a future attack. Under most ceasefires, such unilateral flights are unlikely to be accepted unless they are cleared and coordinated through the ceasefire mechanism or unless the information gathered is shared. As a result, a party can frame surveillance as defensive, and thus falling outside the ceasefire, even though the other side may see it as threatening. This lack of clarity can fuel disputes, misinterpretation and retaliation, especially where airspace becomes a “grey zone” in which ISR and low-level strikes continue without clear consequences.

UASs also make it much easier for parties to apply military pressure during a ceasefire. Unlike ground operations or crewed aircraft, UASs can be used without putting personnel at significant risk and at relatively low financial cost. This allows a party to carry out limited strikes, send political or military signals, or test the other side’s response without triggering repercussions (e.g., accusations of violations and ensuing domestic or international backlash). As a result, it can keep applying pressure while claiming to respect the ceasefire.



Military operator launches FPV UAV with device for releasing bombs and grenades to enemy positions, 15 July 2024. Credit: Shutterstock, Parilov

3.2 Early-phase fragility and exploitation of pauses

In the early stages of a ceasefire, trust is low and both sides watch each other's actions closely. Moreover, ceasefire institutions and monitoring and verification mechanisms are often not yet fully deployed. Problems relating to UASs and uncertainty over their use are thus particularly acute in these early stages. UAS activity in the hours or days immediately after a ceasefire can quickly become the subject of competing claims of violations, particularly where the agreement does not clearly define what types of UAS activity are permitted (for an example, see Box 1). Even surveillance flights that are not explicitly prohibited may be viewed with suspicion if they appear to support continued military operations. Without clear rules and effective channels for verification, such incidents can quickly lead to accusations and retaliation and can further erode trust.

More broadly, UASs allow parties to use ceasefires as cover for intelligence gathering and to prepare for future military operations. UAS-enabled ISR can range from general situational awareness and short-duration observation to persistent monitoring, target acquisition, artillery adjustment, battle-damage assessment and the transmission of information that enables later attacks. Depending on the agreement, some of these activities may be permissible or may be prohibited during a ceasefire; however, it can be difficult for ceasefire monitors and parties to differentiate between a UAS flown for approved activities and one flown for prohibited activities.

This makes it easier for parties to ignore the spirit of the ceasefire without facing consequences, thereby weakening confidence in the agreement. This can turn a genuine attempt by willing parties to support conflict

resolution into a situation in which one or more parties treat the opportunity presented not as a means for de-escalation and political engagement but as a tactical pause to be used to gain military advantage. Broad permissions or prohibitions for "ISR" alone may therefore be insufficient. More detailed provisions regulating observable conduct (e.g., cross-line flights, persistent loitering over protected areas, surveillance of notified movements, or UAS-enabled target acquisition and fire adjustment) may be needed.

BOX 1

Illustrative example: UAS activity triggering competing claims of violations

During the three-day ceasefire between Ukraine and the Russian Federation of 9–11 May 2026, the United Nations reported violations by both sides, mainly along and near the front line, followed by a sharp escalation of attacks almost immediately after it expired.[8] This case illustrates how, when UAS activity is not clearly regulated and incidents cannot be rapidly verified, UAS use can become part of competing claims of non-compliance and can contribute to renewed escalation.

3.3 Weak capacity to monitor and attribute UAS-related activity

Most ceasefire-monitoring and verification mechanisms have been designed to detect ground-based violations involving conventional weapons. Observation posts, patrols and incident reporting are poorly suited to detecting high-altitude military UASs, small commercial UASs or short, low-signature attacks, including by loitering munitions, that leave little trace. Moreover, UASs expand the monitoring challenge into contested airspace, where surveillance and long-range strikes can be carried out quickly, remotely and with limited attribution.

Unlike troops and heavy weapons, which occupy visible ground and can be observed and withdrawn from restricted areas, UASs enter and leave an area quickly and can be launched from well outside a restricted area. This allows parties to conduct surveillance or attacks without moving ground forces into restricted areas, so a buffer zone may appear to be respected while military activity continues from the air. Where monitoring and verification mechanisms lack airspace surveillance, UAS-detection systems, or procedures for collecting and sharing technical evidence, they struggle to verify incidents or assign responsibility.[9] This weakens deterrence as parties recognize that UAS-related violations are less likely to be detected, investigated or attributed than breaches on the ground.

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8 Security Council, "Maintenance of peace and security of Ukraine – Security Council, 10152nd meeting", UN Audiovisual Library, 19 May 2026, https://media.un.org/avlibrary/en/asset/d357/d3576058?, timestamp 7:10.

9 United Nations, "Ceasefire monitoring 'can no longer be just about being present', senior official tells Security Council, noting new capabilities for real-time observation", 7 April 2025, https://press.un.org/en/2025/sc16039.doc.htm.



UNIFIL peacekeepers on helicopter patrol along Blue Line, 22 August 2022. Credit: UN Photo/Pasqual Gorriz

3.4 Stand-off operations across ceasefire lines and restricted zones

Ceasefire lines, buffer zones and demilitarized zones are designed to separate opposing forces, reduce direct contact and create areas where military activity is restricted. However, UASs can undermine these arrangements by allowing parties to observe, identify targets or carry out attacks across boundaries without moving personnel or weapons into the restricted area. A party may therefore comply with the letter of a ceasefire by keeping its forces outside a buffer zone while using UASs launched from territory or areas it controls to observe enemy positions, deliver weapons, or direct artillery fire and support other attacks beyond it (see the example in Box 2). Crewed aircraft could in principle be used in the same way, but UASs make such stand-off activity cheaper, less risky, harder to detect and attribute, and available to many more actors, including non-State armed groups.

This weakens the link between physical separation and reduced hostilities. The risk is not only of UASs flying inside a buffer zone, but also of hostile actions within or across the zone being enabled by UASs that are operating outside the zone. Ceasefire agreements should therefore regulate not only where UASs may operate, but also how they are used. This includes prohibiting them from supporting attacks, target acquisition, artillery fire adjustment, or other hostile military activities across ceasefire lines or against protected areas, even when they are launched from outside the restricted zone. Where parties are not ready to accept such comprehensive restrictions at the outset, agreements can start with a narrower core, such as a prohibition on armed UAS strikes and UAS-enabled fire adjustment across agreed lines, and expand the restrictions as confidence grows (see Line of Effort 7 in Subsection 4.7).



UNIFIL peacekeepers on armoured patrol near Blue Line in Lebanon, 29 June 2012. Credit: UN Photo/Pasqual Gorriz

BOX 2

Illustrative example: Sustaining pressure through UASs in Lebanon

Following the November 2024 cessation of hostilities between Israel and Lebanon, the United Nations Interim Force in Lebanon (UNIFIL) recorded continued Israeli air activity, including extensive UAS operations. According to UNIFIL's 3D Surveillance Chief, the pattern of air activity appeared designed to "maintain situational awareness and exert pressure", while persistent violations "continue to undermine stability and complicate the operational environment".[10] UASs therefore enabled continued ISR and signalling across a ceasefire line, sustaining pressure without the movement of ground forces across the line or a wider escalation.

3.5 Civilian harm beyond kinetic violence

Ceasefires not only regulate relations between armed actors; they are also intended to improve safety for civilians and create conditions for humanitarian assistance. UASs can undermine these objectives even when they are not carrying out attacks. The presence of military UASs can create uncertainty and mistrust, particularly when civilians and humanitarian actors cannot easily determine their purpose. This can affect perceptions of safety, restrict movement and make humanitarian operations more difficult, particularly where UASs are operating near aid workers, facilities or access routes.

10 United Nations, "UNIFIL records uptick in Israeli air violations", 18 December 2025, https://peacekeeping.un.org/en/news/unifil-records-uptick-in-israeli-air-violations?.

This is particularly important where ceasefires prohibit UAS strikes but do not regulate surveillance over towns, displacement sites or humanitarian routes. While the absence of attacks may reduce physical violence, continued UAS activity can maintain fear and uncertainty and can create risks for humanitarian access and staff safety. The ICRC has noted that the use of UASs can create confusion, mistrust, or threats to humanitarian access or safety and that the persistent presence, sound or sight of UASs can have serious psychological effects on civilians.[11] If this behaviour is not explicitly addressed in the ceasefire agreement, it can erode public confidence in the ceasefire or the peace process. Where UAS strikes also continue after a ceasefire has been agreed, as in Gaza, the combination of attacks and persistent overhead presence shapes how civilians experience the ceasefire and their confidence in it (see Box 3).

BOX 3

Illustrative example: Impact on civilians of continued UAS use in Gaza

Since a ceasefire took effect in Gaza in October 2025, UAS activity has continued to shape how civilians experience "pauses" in fighting.[12] For example, according to the Office of the United Nations High Commissioner for Human Rights (OHCHR), the period from the signing of the ceasefire until 21 January 2026 "included 126 reported attacks by Israeli [UAVs] across Gaza resulting in the killing of at least 87 Palestinians, including 12 children".[13] The ceasefire-monitoring arrangements incorporate surveillance by US UASs to identify potential violations.[14] However, there is limited information on how alleged violations involving UASs are independently verified, attributed to a party and followed up. This creates an important gap between the detection of an incident and the establishment of responsibility for it, raising questions as to the effectiveness of the monitoring and verification mechanism in responding to and deterring UAS-related violations.

3.6 Deniability and fragmented responsibility

UAS programmes may involve States, militias and foreign sponsors in ways that place key operators partly outside formal ceasefire bargains. Where UASs are supplied, maintained or operated by external actors, ceasefires negotiated with local parties may not be sufficient to curb the actions of those external actors, who are not accountable under the agreement. In this context, non-signatories may continue to

11 International Committee of the Red Cross (ICRC), "Frequently asked questions: International humanitarian law and the use of drones in armed conflict", 10 December 2025, https://www.icrc.org/en/article/faq-international-humanitarian-law-drones-armed-conflict.

12 Armed Conflict Location & Event Data (ACLED) Project, "Middle East overview: November 2025", September 2025 reporting, https://acleddata.com/update/middle-east-overview-november-2025.

13 Office of the United Nations High Commissioner for Human Rights, "Gaza: Civilian killings continue after ceasefire", 23 January 2026, https://reliefweb.int/report/occupied-palestinian-territory/gaza-civilian-killings-continue-after-ceasefire-enar.

14 UK Parliament, "Gaza: Peacekeeping operations question for Ministry of Defence", tabled 6 January 2026, https://questions-statements.parliament.uk/written-questions/detail/2026-01-06/103212.

pursue their own strategic goals and, in doing so, violate the ceasefire without being accountable and without worrying about the consequences.[15]

In some cases, parties to the ceasefire may lack control over UAS operations conducted by "allied" actors whose actions undermine the signatory's commitment to the ceasefire. In other cases, signatories may overtly or tacitly approve of these activities and may profit from them while denying responsibility. In practice, it is often not possible to establish whether a given UAS was operated by a party to the ceasefire, an affiliated group or an external actor, particularly where control, affiliation and operational authority overlap (see Box 4). A related challenge arises where splinter factions or new armed groups that are not party to the ceasefire emerge, as illustrated in Colombia where FARC dissident groups have increasingly

BOX 4

Illustrative example: Deniability in Libya and fragmented responsibility in Syria

In Libya, during the 2019–2020 conflict, the United Nations Panel of Experts on Libya reported that Turkish-made Bayraktar TB2 UASs were supplied to the forces of the United Nations-recognized Government of National Accord, while the self-styled Libyan National Army benefited from UASs and support from the United Arab Emirates, Russia and others.[16] The October 2020 ceasefire agreement called for the departure of foreign fighters and the suspension of military training agreements, but did not directly regulate the UAS capabilities that external supporters had provided.[17]

In Syria, during the violence in Suwayda in July 2025, UASs were reportedly used in multiple attacks amid the involvement of government forces, tribal fighters, Druze armed groups and Israeli forces. The Human Rights Council's Independent International Commission of Inquiry distinguished between tribal fighters operating under the effective control of government forces and those participating independently in the hostilities.[18]

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15 States party to Additional Protocol I must review new weapons, means and methods of warfare to determine whether their employment would be prohibited by international law (Article 36). External States or entities that supply, direct or otherwise support UAS operations may also incur responsibility where the applicable conditions for aiding or assisting an internationally wrongful act are met.

16 Security Council, Final report of the Panel of Experts on Libya established pursuant to Security Council resolution 1973 (2011), S/2021/229, 8 March 2021, https://docs.un.org/S/2021/229, 306; Security Council, Final report of the Panel of Experts on Libya established pursuant to Security Council resolution 1973 (2011), S/2019/914, 9 December 2019, https://docs.un.org/S/2019/914, 34–35.

17 Security Council, Letter dated 27 October 2020 from the Secretary-General addressed to the President of the Security Council, S/2020/1043, 27 October 2020, https://docs.un.org/en/S/2020/1043.

18 General Assembly, Human Rights Council, Syria Independent International Commission of Inquiry on the Syrian Arab Republic, "International human rights law and international humanitarian law violations committed during the July 2025 violence in Suwayda", A/HRC/61/CRP.7, 27 March 2026, https://www.ohchr.org/sites/default/files/documents/hrbodies/hrcouncil/sessions-regular/session61/a-hrc-61-crp-7.pdf.

used improvised UASs for surveillance and attacks against security forces and rival groups;[19] such a group's UAS activity can affect the ceasefire even though no signatory controls it.

3.7 UASs and the vulnerability of ceasefire implementation

Ceasefire-mandated disengagements, withdrawals and assembly can make forces highly vulnerable. Persistent UAS surveillance can expose these movements, reduce forces' confidence that agreed routes or sites will be respected, and allow enemies to launch fast attacks if the ceasefire fails. These risks are especially acute in the early phase of ceasefire implementation, when trust is low and parties may interpret aerial observation as preparation for attack (see Table 3). Without agreed restrictions on UAS activity and credible monitoring of protected movements and sites, parties may delay or resist measures that are essential to ceasefire implementation (see Line of Effort 3 in Subsection 4.3).[20]

TABLE 3

UAS threats to troop movement and assembly

Threat type	To troop movement	To assembly of forces
Direct attacks	Direct attacks on vehicles during movement (including recovery, fuel and medical vehicles) in order to strand or slow the column; and direct attacks on concentrations of forces at bridges, river crossings and other chokepoints	Attacks on personnel or infrastructure (tents, shelters, vehicle parks, command posts, ammunition or fuel dumps) in assembly areas
ISR cueing for artillery, rockets or missiles	Small ISR UASs tracking convoys and cueing artillery, rockets or larger UASs	Persistent ISR mapping layouts and routines, enabling later precision strikes
Route-shaping and support for improvised explosive devices (IEDs)	UASs spotting, placing or adjusting IEDs and mines along likely convoy routes, including to channel convoys into ambushes	UASs steering movements into pre-registered fire zones around the site
Saturation and swarm tactics	Multiple UASs distracting gunners and saturating limited counter-UAS capacities during moves	Swarms used to overwhelm base defences and attack multiple targets at once.
Psychological pressure	Constant buzzing and filming increasing stress on drivers, causing risky decisions	Persistent overhead presence creating "basing paralysis" and fear of movement.

19 ACLED, "'Total Peace' paradox in Colombia: Petro's policy reduced violence, but armed groups grew stronger: An analysis of Colombian President Gustavo Petro's Total Peace strategy and its impact on armed conflicts and peace negotiations", 28 November 2024, https://acleddata.com/report/total-peace-paradox-colombia-petros-policy-reduced-violence-armed-groups-grew-stronger.

20 The continuous presence of drones carries a psychological effect on combatants, recognized by NATO. It can cause immobilization of combatants as they seek safety inside buildings or bunkers, leading to a paralysis of ground forces under persistent drone presence. See North Atlantic Treaty Organization, Allied Command Transformation (ACT), Cognitive warfare reports, https://www.act.nato.int/activities/cognitive-warfare/.



Members of the Special Monitoring Mission present a long-range uncrewed aerial vehicle (UAV) to OSCE Secretary General Thomas Greminger during his visit in eastern Ukraine, Stepanivka, 27 July 2018. Credit: © OSCE/Evgeniy Maloletka

3.8 Vulnerability of UAS-supported monitoring and verification

Monitoring missions such as the OSCE's SMM in Ukraine have employed UASs specifically to track movements of forces and heavy weapons across ceasefire lines, allowing monitoring to continue even where ground patrols faced restrictions or security risks. When properly governed, UASs operated by monitoring and verification mechanisms can strengthen ceasefires by improving the monitor's ability to map front lines, verify disengagement, and track troop and weapon movements. Time-stamped imagery from UASs can clarify disputed incidents and reduce speculation and disinformation. In this role, UASs function as a monitoring tool, rather than an instrument of advantage for either side. Their usefulness, however, depends on clear mandates, mission control, agreed flight parameters and safeguards on data access. Without these, parties may fear that the monitoring and verification mechanism's UASs are gathering targeting intelligence.

These concerns may lead armed actors to use active electronic and physical countermeasures to target the monitoring and verification mechanism's assets. They have used GPS jamming, electronic warfare and direct fire against monitoring UASs to blind or intimidate missions. This severely degrades their capacity to log violations and verify compliance. Experience in Mali and Ukraine shows that UASs can strengthen a monitoring and verification mechanism's situational awareness, but must be supported by redundant observation methods, clear protection obligations and procedures that distinguish technical detection from attributable responsibility (see Box 5).

BOX 5

Illustrative example: UAS monitoring and electronic interference in Mali and Ukraine

In Mali, the use by the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) of unarmed surveillance UASs faced persistent restrictions on air operations, including for ISR. This affected the safety of MINUSMA convoys, which were deprived of pre-convoy reconnaissance and intelligence collection along resupply routes.[21]

In Ukraine, the OSCE Special Monitoring Mission used UASs to observe ceasefire-relevant activity and areas that were difficult or unsafe to access. In 2021, the SMM reported unprecedented GPS interference and increased instances of UASs being targeted by gunfire; blanket jamming led to the temporary suspension of some UAS operations. The SMM could document the effects of interference but could not identify its precise source.[22]

3.9 Using UASs to disrupt monitoring and verification

UASs can hinder third-party monitoring and verification. Conflict parties can deploy their own UASs to map peacekeeping patrol routes and track troop positions. Unless these flights are declared and agreed to in advance, the intent behind them remains unknown to the monitors and may raise the threat level, creating a highly compromised air and ground environment. In such cases, observers may feel that they need to limit their movement for security reasons (see Box 6), especially if these overflights are combined with measures to limit the monitor's ability to deploy their own UASs.

Ceasefires should treat interference with a monitoring and verification mechanism's UASs as a violation. Monitoring and verification arrangements should be designed redundantly, combining UASs with cameras, satellite imagery, human patrols and other sensors. This will ensure that the arrangements do not collapse when UASs are jammed or grounded.

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21 Security Council, "Situation in Mali", Report of the Secretary-General, S/2023/21, 6 January 2023, https://docs.un.org/S/2023/21, para. 57.

22 OSCE, "Spot report by the Special Monitoring Mission to Ukraine (SMM): Small-arms fired close to SMM UAS near Staryi Aidar", 11 April 2017, https://www.osce.org/special-monitoring-mission-to-ukraine/311111. See also OSCE, "Restrictions to the SMM's freedom of movement and other impediments to the fulfilment of its mandate January–June 2021", Thematic report, December 2021, https://cdn.osce.org/sites/default/files/f/documents/0/b/508991.pdf; OSCE, "Long-range unmanned aerial vehicle damaged in emergency landing due to dual GPS signal interference", OSCE SMM Spot Report 11/2021, 2021, https://www.osce.org/special-monitoring-mission-to-ukraine/484661.



A UNIFIL explosive ordnance disposal expert examines the site of a drone crash at the mission's Naqoura headquarters, 11 May 2026. Credit: Kandice Ardiel (UN)

BOX 6

Illustrative example: UAS threats to peacekeepers in Lebanon

In Lebanon, UNIFIL reported that, during a planned patrol near Adeisse in January 2026, a UAS hovering above peacekeepers dropped a grenade approximately 30 metres from them.[23] In October 2025, UNIFIL similarly reported that a UAS-dropped grenade exploded near one of its positions, injuring a peacekeeper.[24] These incidents show that UASs can threaten not only civilians and parties to a ceasefire, but also the personnel responsible for monitoring and implementing it. Ceasefire arrangements should therefore expressly prohibit attacks, intimidation and deliberate interference directed at authorized monitoring and verification personnel and assets.

23 United Nations Interim Force in Lebanon, Statement, 16 January 2026, https://unifil.unmissions.org/en/press-releases/unifil-statement-16-january-2026.

24 United Nations Interim Force in Lebanon, "UNIFIL statement on recent grenade attack near peacekeepers", 12 October 2025, https://unifil.unmissions.org/en/press-releases/unifil-statement-recent-grenade-attack-near-peacekeepers.

4. A menu of options for addressing UASs in ceasefires

Ceasefires are usually implemented through a series of connected phases, starting with the end of fighting and moving through disengagement, withdrawal and cantonment, accompanied by ongoing monitoring and verification. At each phase, UASs create specific challenges for compliance and for determining who is responsible for violations.

The precise sequence varies by context, and phases often overlap. For the purposes of this Insight, the cessation of hostilities is the point at which offensive operations stop; separation and disengagement involve pulling forces back from lines of contact and establishing buffer or restricted zones; and withdrawal, assembly and cantonment involve moving forces and weapons to agreed locations. Airspace regulation and monitoring and verification are cross-cutting functions that apply throughout. The initial stabilization period and phases involving mandated movements are the most fragile, because trust is lowest and forces are most exposed.

Ceasefires are also implemented for different purposes and across different geographic locations. The appropriate regulation of UAS activity will depend on the nature, scope and purpose of the ceasefire and on battlefield realities:

- A short humanitarian pause may require tightly time-bound restrictions to protect civilian movement and aid operations.
- A local cessation of hostilities may focus on preventing surveillance, targeting or strikes across agreed lines.
- A longer-term ceasefire linked to disengagement, withdrawal or cantonment may require more detailed rules on protected movements, assembly areas, monitoring and verification and accountability.

UAS provisions should therefore be tailored to the agreement's objectives, the parties' capabilities, the level of trust and the monitoring and verification arrangements available. These provisions may vary as the ceasefire progresses (see Line of Effort 7 in Subsection 4.7).

The UAS clauses needed in a ceasefire will depend on the conflict. Where both sides use large numbers of UASs, the agreement may need to focus on armed attacks, targeting support, operations across cease-fire lines, interference with monitoring and verification and rapid procedures for dealing with incidents. Where one side has a marked UAS advantage, stronger protections may be needed for troop withdrawals, assembly areas and other activities that could expose opposing forces or civilians to surveillance or attack. Where several armed groups or external actors are involved, the agreement should place greater emphasis on who is responsible for UAS activity, liaison between the parties and procedures for resolving disputed violations.

Rather than offering a single model, this section provides a range of options that mediators, parties and monitoring and verification actors can adapt to their specific context. The seven subsections that follow examine these measures in more detail across seven Lines of Effort for ceasefire design and implementation:

1. Shared understanding and scope
2. Regulation of UAS activity
3. Protection of fragile ceasefire phases
4. Monitoring, detection and attribution
5. Responsibility and external actors
6. Protection of civilians and humanitarian actors
7. Sequencing and adaptation of UAS restrictions

Each of these Lines of Effort groups related measures that serve a common objective; the seven Lines of Effort are complementary and can be pursued in parallel, rather than as sequential steps or phases. Table 4 summarizes possible UAS-related provisions for each phase of ceasefire implementation and indicates relevant Lines of Effort.

TABLE 4

UAS-related provisions by ceasefire implementation phase

Ceasefire phase or function	Primary UAS risk	Illustrative provisions
Cessation of hostilities	Ambiguity over whether strikes, ISR or loitering constitute violations	Define covered systems and activities (Line of Effort 1(a) and 1(b)) Prohibit armed UAS use (Line of Effort 2(a)) Require authorization for exceptional flights (Line of Effort 2(i) and 3(a))
Separation and disengagement	ISR exposes movements or enables targeting	Restricted flight areas or time windows (Line of Effort 2(d) and 3(a)) No-flight rules over buffer zones (Line of Effort 2(f) and 3(a)) Monitoring flights by the ceasefire monitoring and verification mechanism only (Line of Effort 4(a))
Withdrawal, assembly and cantonment	Parties use UASs to track, target or conceal force movements	Agreed notification and flight corridors (Line of Effort 2(i) and 3(b)) Limited disclosure of relevant UAS locations/capabilities (Line of Effort 1(c) and 2(i)) Mission verification where feasible (Line of Effort 3(c), 4(a), and 4(g))
Airspace regulation	Unclear authority, cross-line incursions and competing flight activity	Agreed zones, altitude bands and notification procedures (Line of Effort 2(d) and 2(i)) Joint or mission-supported approval arrangements (Line of Effort 2(d) and 4(c))
Monitoring and verification	Insufficient detection, contested evidence and interference	Mandate for monitoring and verification UASs operated by the ceasefire mechanism (Line of Effort 4(a)) Incident-reporting and evidence protocols (Line of Effort 4(c), 4(d) and 7(d)) Redundant monitoring and verification tools (Line of Effort 4(b)) Prohibition of interference (Line of Effort 2(h), 4(f) and 6(e))

Taken together, these options form a menu from which mediators, parties and monitoring and verification mechanisms can select and combine options to fit the type of ceasefire, the balance of UAS capabilities between the parties, the degree of external involvement and the capacity of the monitoring and verification mechanism. The menu includes two broad kinds of option: policy-level options and practical and technical options.

The policy-level options are addressed primarily to mediators, negotiators and political decision makers. They concern what a ceasefire agreement should regulate, how UAS activity should be defined and who is responsible for it. These are most prominent in Lines of Effort 1, 2 and 5.

The practical and technical options are addressed primarily to monitoring and verification mechanisms, liaison officers and military planners. They concern how agreed provisions are implemented, monitored and adjusted on the ground. These are most prominent in Lines of Effort 3, 4, 6 and 7 and are complemented by the implementation conditions set out in Box 7 and the operational considerations in Appendix A.

4.1 Line of Effort 1: Shared understanding and scope

UASs should be addressed from the outset of ceasefire negotiations, rather than treated as a technical issue to be resolved later. Ambiguity about which UAS activities are covered and about what is permitted or prohibited can quickly lead to disputes and alleged violations. A useful drafting principle is to regulate UAS activity by function, location, timing and effect (what they do, where and when they operate, and the effects they can produce), rather than by platform alone.



Southern Shan Drone Force - SSDF, Facebook status update, 2 July 2023. Credit: Southern Shan Drone Force

Recommended elements:

a. **Define UAS activities by function.** Agree categories of UAS use that are relevant to the ceasefire, such as surveillance and reconnaissance, mapping, targeting support, strike, communications or signalling. Regulating functions as well as platforms helps to ensure that new, improvised or commercially available systems are covered.

b. **Define the scope of regulated activity.** Specify which UAS activities are subject to the ceasefire and where restrictions apply. These may include armed attacks, military ISR, targeting support, loitering, cross-line flights, persistent observation, and UAS activity near disengagement lines, restricted sites, civilian areas or humanitarian routes.

c. **Use behaviour-based definitions where appropriate.** Where parties are unwilling to disclose specific systems or capabilities, define prohibited or restricted behaviour instead. For example, an agreement could prohibit "any UAS conducting ISR across agreed lines or within designated restricted zones", rather than identifying particular platforms or models.

d. **Use clear and measurable terminology.** Define terms that determine whether an activity is permitted or prohibited, including ISR, target acquisition, loitering, persistent observation, cross-line flight, notification, authorization, and restricted or protected areas. Where possible, use measurable criteria such as location, duration, frequency, altitude or purpose. This reduces disputes over whether a particular flight or activity falls within the ceasefire rules.

e. **Apply the definitions consistently.** Use the same UAS terminology in the ceasefire agreement, codes of conduct, monitoring and verification procedures, incident reporting forms and subsequent guidance to military and civilian personnel. This helps to ensure that parties, monitors and affected communities have a common understanding of what constitutes permitted and prohibited UAS activity. A short agreed glossary, annexed to the agreement or code of conduct, can help achieve this.

4.2 Line of Effort 2: Regulation of UAS activity

Ceasefire provisions should answer, in practical terms, "what may or may not be done with UASs, by whom, where and when". General prohibitions on "hostile acts" are unlikely to be sufficient in conflicts where UASs are widely used, particularly because surveillance, targeting and strike activities can have different implications.

Recommended elements:

a. **Assign a clear status to each covered activity.** For each UAS activity within the scope agreed under Line of Effort 1 (including armed strikes, loitering munitions, ISR, logistics and communications), specify whether it is prohibited, restricted (i.e., permitted only under specified conditions) or permitted. Armed UAS strikes should normally be prohibited from the outset.

b. **Regulate ISR according to purpose, location and effect.** Do not treat all ISR as equivalent. Specify:

- Where UAS surveillance is permitted, restricted or prohibited
- Whether cross-line or persistent observation is allowed
- Whether UASs may support targeting, fire adjustment, battle-damage assessment or the transmission of targeting information



Tactical military reconnaissance drone on field launcher, 22 January 2026. Credit: Shutterstock, Chenkaliuk Bogdan

- What restrictions apply over civilian areas, humanitarian routes, protected movements, assembly areas and other sensitive sites
- How data collected during permitted flights may be stored, shared and used

c. **Control the use of information obtained through permitted UAS activity.** Specify whether imagery and other information collected during authorized flights may be retained, shared or used for targeting, intelligence or operational purposes. Where monitoring and verification or humanitarian UASs are authorized, their data should be subject to separate access and use protocols.

d. **Establish airspace deconfliction arrangements where necessary.**[25] Define permitted flight areas, corridors, altitude limits, operating times and notification procedures. Identify points of contact for resolving unexpected or unidentified UAS activity. These arrangements should cover party-operated, monitoring and verification and, where relevant, humanitarian UASs. Because most tactical UASs operate in the lowest layers of airspace, these arrangements will usually need to extend well below the altitudes covered by conventional no-fly zones.

e. **Set clear rules for loitering and cross-line flights.** Define these activities using measurable criteria and assign them a clear status: prohibited, restricted or authorized under specified conditions. Restrictions should apply to the activity and its effect, not only to where the UAS is physically located.

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25 Airspace deconfliction measures are most useful for cooperative or larger platforms. In environments dominated by low-altitude, short-range or improvised UASs, agreements may need to focus instead on prohibited functions, launch and recovery areas, protected locations, reporting, and incident-management arrangements.

f. **Regulate UAS-enabled hostile effects.** Prohibit the use of UASs, or information obtained through UASs, to conduct, facilitate or support attacks or other hostile activity across agreed lines, within buffer or demilitarized zones, or against protected sites.

g. **Include UAS rules in codes of conduct and orders.** Where ceasefires use codes of conduct or lists of permitted and prohibited activities, include UAS restrictions in clear, operational language that can be understood and applied by commanders and personnel.

h. **Regulate counter-UAS measures.** Specify whether and under what conditions parties may detect, jam, spoof, disable or physically engage UASs. Counter-UAS measures should be proportionate, geographically limited and designed to avoid unnecessary escalation or interference with civilian, humanitarian or authorized monitoring and verification activity.

i. **Control permitted flights.** Where UAS activity is authorized, specify applicable requirements for notification, routes, altitude, timing, operating areas and, where necessary, data handling. This should provide enough information to distinguish legitimate activity from a potential violation without requiring parties to disclose unnecessary operational details.

4.3 Line of Effort 3: Protection of fragile ceasefire phases

The early days of a ceasefire and mandated movements (e.g., withdrawals, rotations, humanitarian operations) are periods of heightened vulnerability in any ceasefire because trust is low and forces are exposed. UASs amplify this vulnerability by enabling surveillance and targeting and by increasing the risk of incidents and misinterpretation. Where one side has much stronger UAS capabilities, the weaker side is unlikely to withdraw, disengage or assemble in designated areas unless those movements and locations are protected from surveillance and attack. Measures under this Line of Effort should reduce the risk that movements or assembly required to implement the ceasefire are perceived as opportunities for surveillance, targeting or attack (see Table 5).

Recommended elements:

a. **Protect the initial stabilization period.** For an agreed initial stabilization period, which may be 48–72 hours or another locally appropriate period, adopt:

- A ban on armed UAS strikes
- A ban or strict limit on cross-line UAS-enabled ISR over front lines
- A ban or tight restrictions on UAS flights over population centres and key disengagement routes
- A requirement for the ceasefire mechanism to provide advanced authorization for any permitted UAS flights

b. **Protect movement windows and corridors.** Identify specific routes and time windows for notified withdrawals and rotations, and:

- Prohibit armed UASs and targeting ISR over those corridors during the agreed windows
- Require prior notification of convoy size, composition and timing

- Where feasible, consider a monitoring and verification mechanism presence at key junctions or choke points

  Restrictions should apply not only to UAS flights above or within the corridor or zone, but also to UAS-enabled surveillance, target acquisition and fire support conducted from outside the corridor or from beyond the agreed line.

c. **Protect assembly, cantonment and weapon-storage areas.** Designate these sites as no-strike or tightly regulated areas for armed UASs. Map their boundaries and access routes and establish clear rules for UAS activity near them, including any authorized monitoring and verification by the ceasefire mechanism.

TABLE 5

Illustrative sequencing of UAS restrictions

Stage	Priority	Illustrative approach
Initial stabilization	Prevent escalation and miscalculation	Prohibit armed UAS use Restrict cross-line ISR and persistent observation Protect civilian, humanitarian and disengagement areas Require authorization for exceptional flights Establish rapid incident reporting
Consolidation	Build confidence and verify restraint	Permit only agreed and notified activity Strengthen monitoring, airspace deconfliction and incident investigation Review early compliance
Implementation	Support withdrawals and political process	Establish agreed flight zones, corridors or altitude rules Monitor using UASs operated by the ceasefire mechanism where feasible Protect sensitive movements Adjust restrictions according to verified compliance
Longer-term arrangements	Integrate UASs into security governance	Incorporate UAS rules into broader airspace management, civilian protection, counter-UAS arrangements and investigation procedures

4.4 Line of Effort 4: Monitoring, detection and attribution

Monitoring and verification of UAS activity involve three related but distinct tasks: detecting UAS activity, verifying what occurred and whether it breached the ceasefire, and attributing responsibility. The appropriate monitoring package depends on mission access, resources and party consent. It will also evolve over time: monitoring and verification mechanisms are often deployed progressively; monitors may need specific training on UASs; and, for some ceasefire objectives, only limited monitoring may be feasible. In many contexts, missions operate somewhere between a minimum and an "enhanced" credible ability to detect and investigate UAS incidents (see Table 6).

TABLE 6

Monitoring UAS incidents: minimum and enhanced arrangements*

Monitoring function	Minimum credible arrangement	Enhanced arrangement
Incident reporting	Standard forms, 24-hour contact points, geo-referenced incident log	Integrated digital reporting and shared operational picture
Observation	Trained visual and acoustic observation; patrols and fixed observation points	Monitoring UASs, electro-optical systems and dedicated observation teams
Technical information	Available commercial imagery, community reports and open-source information	Radar, air-traffic data, radio frequency detection, satellite imagery and technical analysis capacity
Verification	Corroboration across available sources; rapid liaison with parties	Sensor fusion, specialist analysis and independent technical investigation
Resilience	Multiple low-technology reporting channels (e.g. radio, telephone hotlines, messaging applications and paper-based reports)	Redundant platforms, secure communications and backup data systems
Data governance	Basic access controls and agreed reporting procedures	Formal data-handling protocols, secure storage and clear separation from parties' operational chains; where monitoring is conducted jointly with the parties, agreed arrangements for joint analysis of, and access to, data

* **The two columns of the table should be read as the ends of a spectrum, rather than as two alternatives.**

Recommended elements:

a. **Authorize and govern monitoring and verification UASs.** Where feasible and politically acceptable, allow the monitoring and verification mechanism to operate its own unarmed UASs. Agree their operating areas, routes, altitudes, timing, tasking and data-handling arrangements. The mechanism's UASs should be used for monitoring and verification and should not provide information directly to parties' operational or targeting chains.

b. **Use layered monitoring.** Combine monitoring and verification UASs with other sources. These other sources may depend on the resources available, mandates and permissions required to use them.

c. **Establish rapid incident-notification and clarification procedures.** Create a 24-hour mechanism through which parties and monitors can report, acknowledge and clarify UAS incidents quickly. Where possible, the mechanism should allow incidents to be recorded and investigated before public accusations or retaliatory action.

d. **Standardize incident reporting and investigation.** Establish common reporting formats, timelines and procedures for UAS incidents. Define the types of evidence that may be used, including imagery, flight or radar data, technical information and witness accounts. Establish how contested incidents will be investigated.

e. **Separate verification from attribution.** In monitoring and verification mechanisms, distinguish between establishing that a UAS activity occurred, determining whether it violated the ceasefire and



A Ugandan soldier from the African Union Mission in Somalia (AMISOM) launches surveillance equipment over the town of Qoryooley, Somalia, one month after the town was captured from Al-Shabaab militants, 30 April 2014. Credit: UN Photo/Tobin Jones

identifying the responsible actor. Evidence sufficient to verify a violation may not always establish who operated the UAS.

f. **Protect monitoring and verification mechanism assets.** Treat the deliberate jamming or spoofing of, firing at, or other interference with authorized monitoring UASs as a serious violation. Establish procedures for reporting and investigating such incidents and, where appropriate, graduated responses to repeated interference.

g. **Verify UAS-related commitments on the ground.** If the parties agree to withdraw, relocate or store their UASs, launch equipment or ground control stations or agree to redeploy them into defensive positions, specify how this will be verified. This could be, for example, through declared and geo-referenced storage or launch sites, movement restrictions, inspections or spot visits, and periodic reporting.

4.5 Line of Effort 5: Responsibility and external actors

UASs can make attribution difficult where several armed groups, allied forces or external actors are involved. The challenge is greatest in fragmented conflicts, where the party that signs the ceasefire may not be the same as the group controlling the territory, operating the UASs or providing external support. A ceasefire should therefore establish not only how a UAS operator can be identified, but also who is responsible for UAS activity carried out by forces or groups under their control or with their support.

Measures under this Line of Effort cannot eliminate deniability, but they can reduce the gap between formal responsibility under the ceasefire and actual control over UAS operations.

Recommended elements:

a. **Establish presumptions for initial attribution.** Where appropriate, establish a rebuttable presumption that a party is responsible for UAS activity launched from territory or facilities under its effective control, subject to investigation and evidence to the contrary.

b. **Cover subordinate and affiliated actors.** Parties should commit to prevent, investigate and respond to UAS violations by subordinate forces, affiliated armed groups or other actors operating on their behalf or under their control. The agreement should distinguish between physical operation of a UAS and responsibility for its use, including where an actor provides direction, control, training, equipment or operational support.

c. **Provide a process for disputed attribution.** Establish procedures for investigating contested incidents. These could include referral to joint mechanisms or independent experts and use of available evidence such as launch location, flight path, imagery, technical data and witness accounts. Distinguish between establishing that a violation occurred and establishing who was responsible.

d. **Address external operators and sponsors.** Where external States or other actors supply, operate, maintain or support UASs, seek explicit commitments that their activities will comply with the ceasefire. Where appropriate, link these commitments to arms transfers, training, operational support or other forms of external assistance (see Box 4).[26]

e. **Define consequences for failure to control UAS activity.** Specify the steps expected of parties when affiliated or subordinate actors violate the rules. These could include investigation, corrective action and, where appropriate, sanctions or other agreed responses. The ceasefire mechanism should also review such incidents in order to agree measures to prevent their recurrence.

4.6 Line of Effort 6: Protection of civilians and humanitarian actors

Ceasefires should improve security for civilians and create conditions for humanitarian assistance. Even when they do not carry out attacks, UASs can undermine these objectives by creating fear and uncertainty, restricting movement and complicating humanitarian access. UAS provisions should therefore protect civilian spaces and humanitarian operations in the vicinity of military separation lines. This should include cases where UAS activity creates uncertainty, intimidation or security concerns without involving an attack. The objective is not necessarily to prohibit all UAS activity over civilian areas, but to ensure that permitted activity is clearly defined, deconflicted and consistent with civilian protection and humanitarian

26 Comparable challenges arise where an armed group depends on outside support to develop or operate its UASs. This support can include equipment, technical knowledge, training or operational advice. Reporting by the United Nations Panel of Experts on Yemen linked Houthi UAS capability to such external assistance and assessed that the group could not have developed and produced most of the advanced systems it displayed without outside support. See Security Council, Final report of the Panel of Experts on Yemen established pursuant to Security Council resolution 2140 (2014), S/2024/731, 11 October 2024, https://docs.un.org/S/2024/731, 17, 19.



UNMIL peacekeepers prepare for troop withdrawal, 1 December 2018. Credit: UN Photo/Albert Gonzalez Farran

access. Existing political commitments, such as the September 2025 Declaration for the Protection of Humanitarian Personnel, do not specifically address UASs;[27] ceasefire provisions can help to fill this gap.

Recommended elements:

a. **Designate protected civilian areas.** Establish UAS-free or tightly regulated airspace, permanently or during agreed time slots, over population centres, displacement sites, hospitals, schools and other protected civilian facilities. Map these areas and communicate the rules to all parties, monitors and relevant humanitarian actors.

b. **Protect humanitarian routes and operations.** Identify humanitarian corridors, logistics routes and key facilities, then prohibit armed UASs and targeting ISR over or near them; define any permitted non-hostile UAS activity, such as damage assessment; and establish notification and deconfliction procedures for authorized flights.

c. **Address persistent overhead presence.** Treat sustained or repeated UAS surveillance over civilian or humanitarian areas as a compliance concern where it creates intimidation, restricts movement or undermines humanitarian access. Monitoring and verification mechanisms should be able to record and report such activity even where no attack occurs.

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27 The 2025 Declaration for the Protection of Humanitarian Personnel does not specifically regulate or refer to UASs. Its general commitments on international humanitarian law and humanitarian access nevertheless apply to attacks involving drones, while paragraph 21.3(d) recognizes the need for security risk management that takes account of emerging technologies. See Declaration for the Protection of Humanitarian Personnel, September 2025, https://icrcndresourcecentre.org/wp-content/uploads/2026/08/01224-Declaration-Humanitarian-Personnel-V4-spreads.pdf.

d. **Coordinate with humanitarian and protection actors.** Consult humanitarian organizations and relevant protection actors when defining restricted areas, routes and exceptions. Ensure that UAS rules and notification procedures are clearly communicated to affected communities.

e. **Protect authorized humanitarian and monitoring and verification UASs.** Clearly distinguish authorized humanitarian or monitoring and verification mechanism flights from military UAS activity and prohibit interference with them, including deliberate jamming, targeting or other obstruction.

4.7 Line of Effort 7: Sequencing and adaptation of UAS restrictions

UASs are now embedded in many parties' military operations, so ceasefire rules need to be realistic, phased and capable of adjustment. The strongest restrictions may be needed during initial stabilization, while later phases can allow carefully controlled activity as trust between the parties increases and confidence in the monitoring and verification mechanism improves. The aim should be to combine strong initial safeguards with a credible pathway towards greater freedom of movement as compliance improves, while ensuring that persistent low-level UAS activity cannot gradually undermine the ceasefire.

Recommended elements:

a. **Phase restrictions over time.** Structure UAS rules around implementation phases. For example, apply the strongest restrictions on armed UASs, cross-line ISR and persistent observation during initial stabilization; allow limited, notified UAS activity as compliance improves and trust grows; and integrate UAS rules into broader airspace and security arrangements in longer-term agreements.

b. **Focus restrictions on the key activities.** In conflicts with heavy UAS use, focus initial restrictions on the activities that pose the greatest risk and that can be monitored most easily (e.g. armed UAS operations, targeting, directing fire, prolonged UAS activity near protected areas and interference with monitoring and verification activities).

c. **Build in review and adjustment.** Set review points and criteria for tightening, maintaining or easing restrictions. Reviews should consider verified compliance, monitoring capacity, changes in the security environment and the political process. Where restrictions are intended to be temporary, the agreement should identify the conditions for maintaining, easing or extending them. Agreements can also provide for adaptation without reopening the ceasefire itself, for example by treating codes of conduct or UAS annexes as open-ended documents that the ceasefire mechanism can update by agreement.

d. **Categorize incidents by type and severity.** Distinguish between armed attacks, unauthorized ISR or cross-line flights, interference with monitoring and verification activities, and technical or inadvertent incidents. Repeated lower-level violations should also be addressed where they undermine confidence or amount to sustained coercion.

e. **Establish predictable responses.** Agree in advance a graduated response, ranging from clarification and warnings to investigation, corrective measures, public reporting and, where appropriate, sanctions. Responses should be proportionate to the seriousness and certainty of the violation and should be designed to manage escalation, rather than trigger automatic retaliation.

BOX 7

Implementation conditions for credible UAS-related ceasefire provisions

UAS provisions will only be effective if they are translated into clear and practical arrangements for parties, UAS operators, monitors and other relevant actors. The precise arrangements will depend on the conflict, but five conditions are particularly important.

1. Clear operational orders and dissemination

Political agreements should be translated into clear instructions for commanders, UAS operators and, where relevant, affiliated or irregular forces. Orders should specify: prohibited, permitted and notifiable activities; restricted areas and protected periods; authorized exceptions; applicable self-protection measures; and reporting requirements. Maps, simple visual products and regular briefings can help ensure that restrictions are understood and are applied at the operational level.

2. Notification, liaison and deconfliction

Parties should establish procedures for notifying authorized UAS activity and sensitive movements. Notifications should include timing, location, purpose and any information required for safe deconfliction. Designated liaison officers, 24-hour contact points and reliable communication channels should enable parties and monitors to clarify ambiguous activity quickly and, where necessary, agree temporary restraint measures. Arrangements should also specify how information from authorized monitoring and verification mechanism or humanitarian UASs is protected from operational misuse.

3. Protection of vulnerable movements and sites

Disengagement, withdrawal, assembly and cantonment can create particular risks because forces may be concentrated and movements predictable. Where appropriate, ceasefire arrangements should establish protected movement windows, routes and assembly areas, with clear restrictions on armed UAS activity, targeting support, persistent observation and other UAS-enabled activity that could facilitate an attack. Similar arrangements may be required for weapon-storage sites, humanitarian operations and other sensitive locations.

4. Monitoring and incident management

Monitoring and verification mechanisms should maintain records of authorized activity, receive reports of suspected violations and apply agreed procedures for detection, verification and attribution. Where possible, monitoring and verification should draw on multiple sources, including patrols, visual observation, community reporting, imagery and available technical information, rather than relying on a single platform or technology. Procedures should specify who reports an incident, who responds, the timeframe for clarification, how evidence is preserved and how unresolved cases are referred for further action.

5. Review and political follow-up

UAS provisions should be reviewed periodically through the ceasefire mechanism. Reviews should consider patterns of incidents and violations, changes in UAS and counter-UAS capabilities, the involvement of new actors and the effectiveness of existing restrictions. Parties should be able to clarify, tighten or adjust arrangements through agreed political and technical mechanisms, rather than allowing new forms of UAS activity to undermine the ceasefire.

These measures do not replace political commitment, effective monitoring and verification or accountability. Their purpose is to make UAS provisions clear, implementable and monitorable, particularly during the vulnerable early stages of a ceasefire.



A helicopter at the United Nations Mission in South Sudan (UNMISS) compound in Malakal, South Sudan, 10 December 2014. Credit: UN Photo/JC McIlwaine

5. Conclusion

Ceasefires remain one of the most important tools for reducing violence, creating political space and enabling humanitarian action, but the widespread use of UASs complicates many of the assumptions on which traditional ceasefire models were built. Earlier frameworks largely presumed that violations would be visible on the ground and attributable to a limited set of actors, and that their political and operational cost would be so high as to deter systematic non-compliance. In conflicts where UASs are integral to how parties fight, these assumptions are less reliable: ISR can continue under the cover of formal restraint; low-level strikes can be carried out with limited risk and deniability; and external suppliers or affiliated forces can act partly outside formal ceasefire bargains.

To remain credible in such settings, ceasefires do not need to become entirely new instruments, but they do need to incorporate UAS-related provisions explicitly. This Insight shows that effective arrangements are those which make UAS activity visible within the agreement:

- Clarifying what functions and platforms are regulated
- Protecting disengagement movements, assembly sites and humanitarian corridors from UAS-enabled exposure
- Strengthening monitoring, detection and attribution through layered tools that combine UASs with other forms of observation
- Closing responsibility gaps between local parties, subordinate or affiliated actors, and external sponsors

The guidance offered in this Insight is deliberately framed as a menu of options, not a rigid template. This recognizes that appropriate choices will depend on conflict type, capability balance, external involvement and the capacity of mediators and monitoring and verification mechanisms. Whichever options are

chosen, they will only be credible if supported by the implementation conditions set out in Box 7: clear operational orders, notification and liaison, protection of vulnerable movements and sites, monitoring and incident management, and review and political follow-up.

The broader lesson is that adaptation to UASs must now be part of the normal business of ceasefire design, monitoring and verification, not an optional technical add-on. In many contexts, UASs are only one among several weapons and technologies that affect ceasefires, and nothing in this Insight suggests that they are the sole or primary determinant of success or failure. However, ignoring their role can leave blind spots in observability, accountability and civilian reassurance. UASs should be treated as a core issue early in negotiations: they should be integrated into wider security and airspace arrangements, and realistic, phased and reviewable restrictions should be planned. If UASs are treated in this way, then mediators and practitioners can help ensure that ceasefires continue to serve their fundamental purposes: to halt or reduce violence and to support political and humanitarian initiatives.

The options in this Insight should be tested and refined as experience accumulates. Feedback from mediators, parties and monitoring and verification mechanisms on which provisions have proved workable in practice would help to inform future iterations of this guidance.

Appendix A. Illustrative operational considerations for UAS-related ceasefire implementation

This appendix is intended as a practical companion for mediators, monitoring and verification mechanisms and liaison officers. It provides non-exhaustive, illustrative examples of measures that parties and monitoring and verification mechanisms may consider when implementing the UAS-related provisions outlined in Section 4. That section sets out the principles and provisions to be addressed in ceasefire design; this appendix illustrates how selected provisions might be translated into practical implementation arrangements.

The measures should be adapted to the conflict, mandate, resources and political circumstances of each ceasefire and should not be treated as a standard template. Not all measures will be appropriate or feasible in every context. The relevant package should be selected according to the ceasefire's objectives, risks, monitoring and verification capacity and the agreement of the parties.

TABLE 7

Appendix A operational considerations mapped to the Lines of Effort*

Appendix A operational consideration	LoE 2 Regulation of UAS activity	LoE 3 Protection of fragile ceasefire phases	LoE 4 Monitoring, detection and attribution	LoE 5 Responsibility and external actors	LoE 6 Protection of civilians and humanitarian actors	LoE 7 Sequencing and adaptation of UAS restrictions
1. Reducing exposure during protected movements		✓				✓
2. Protecting assembly and cantonment sites		✓			✓	✓
3. Self-protection, counter-UAS, deconfliction and restraint	✓	✓	✓			✓
4. Managing UAS-enabled ISR and targeting risk	✓	✓	✓			✓
5. Preventing UAS-enabled hostile activity across ceasefire lines	✓	✓				✓
6. Local monitoring, early warning and attribution			✓	✓		✓
7. Operational liaison and dissemination			✓			✓
8. UAS incident notification, clarification and response			✓	✓		✓

* **Each row relates to a subsection of Appendix A. A tick shows that the subsection gives operational examples for that Line of Effort (LoE) in Section 4. LoE 1 is not covered as shared definitions and scope are agreed during negotiation, rather than during implementation.**

A.1 Reducing exposure during protected movements

(Operational example for Lines of Effort 3 and 7.)

Ceasefire-mandated withdrawals, rotations, humanitarian movements and transfers to assembly areas may create predictable periods of vulnerability to aerial observation or attack.

Implementing arrangements may therefore provide for:

- Agreed movement windows, routes and assembly points, communicated through the ceasefire mechanism
- Advance notification of relevant movements, sufficient to allow monitoring and deconfliction while limiting unnecessary disclosure of sensitive operational information
- Temporary restrictions on armed UAS activity, loitering or cross-line ISR over designated movement routes and during agreed movement windows
- Visible monitoring and verification presence at selected locations where feasible, particularly where routes intersect with agreed lines, civilian areas or other sensitive sites
- Timely reporting to the monitoring and verification mechanism of unauthorized UAS activity, suspected interference or incidents affecting the movement

Parties may also adopt proportionate measures to reduce avoidable exposure during notified movements, provided that these do not conflict with agreed monitoring and verification arrangements, conceal prohibited military activity or obstruct monitoring and verification activities.

A.2 Protecting assembly and cantonment sites

(Operational example for Lines of Effort 3, 6 and 7.)

Assembly, cantonment, weapon-storage areas and other designated sites can concentrate personnel and equipment and may therefore become especially vulnerable to observation, harassment or attack.

Ceasefire implementing arrangements may:

- Designate agreed sites and their access routes as protected or no-strike areas, including against UAS-enabled attacks
- Specify restrictions on UAS flights over, near or across designated sites, taking account of the need for authorized monitoring and verification activities
- Clearly map site boundaries, access routes and any associated restricted airspace, and communicate them to all relevant command structures and monitors
- Establish a monitoring and verification presence, where feasible, to verify agreed force composition, record incidents and facilitate communication with parties
- Require prompt notification of unusual UAS activity near protected sites and establish a procedure for rapid clarification through liaison channels

Measures intended to reduce unnecessary exposure of protected sites should remain consistent with the ceasefire's verification requirements. Parties should not use protective arrangements to conceal prohibited weapons, unauthorized reinforcements or other activities inconsistent with the agreement.

A.3 Self-protection, counter-UAS, deconfliction and restraint

(Operational example for Lines of Effort 2, 3, 4 and 7.)

Parties may be reluctant to comply with withdrawal, movement or assembly obligations if they believe that they will be exposed to aerial attack. Where limited protective or counter-UAS measures are considered necessary, they should be narrowly defined and integrated into the ceasefire's wider deconfliction arrangements.

Such arrangements may include:

- Declaration of relevant capabilities or positions where necessary for deconfliction and monitoring
- Geographic and temporal limits on self-protection and counter-UAS measures, linked to notified movements, protected sites or defined periods of heightened vulnerability
- Clear identification and notification procedures for uses of authorized monitoring and verification mechanism or humanitarian UASs, so that these can be distinguished from other aerial activity
- Defined flight areas, corridors, altitudes or operating periods for permitted UAS activity if required to prevent interference or miscalculation
- Notification and liaison procedures for exceptional or unexpected UAS activity, including designated contact points for rapid clarification
- Immediate reporting of any engagement, attempted engagement, interference or suspected threat to the ceasefire mechanism
- Post-incident review through agreed liaison, investigation and accountability procedures

Where counter-UAS measures are permitted, the agreement should specify which measures are authorized, by whom and under what conditions. Geographic and temporal limits on counter-UAS measures should be established, particularly where jamming, spoofing or physical engagement could affect civilian aviation, humanitarian operations or authorized monitoring and verification assets.

The agreement should avoid broad or ambiguous self-defence exceptions that could be invoked to justify continued hostile activity. Any measures adopted should protect civilians, humanitarian operations and authorized monitoring and verification assets and should not undermine the ceasefire's overall restraint obligations.

A.4 Managing UAS-enabled intelligence, surveillance and reconnaissance and targeting risk

(Operational example for Lines of Effort 2, 3, 4 and 7.)

UAS-enabled ISR is not a single activity. The key distinction is between, on the one hand, observation and intelligence collection and, on the other, information used to enable or support hostile action. ISR can include limited observation, persistent surveillance, target acquisition, fire adjustment, battle-damage assessment and the transmission of information that enables later attacks. Ceasefire arrangements should therefore regulate identifiable conduct, locations and effects, rather than relying on broad permissions or prohibitions for "ISR".

Depending on the ceasefire's purpose and context, parties and monitoring and verification mechanisms may consider:

- Prohibiting UAS-enabled target acquisition, fire adjustment, battle-damage assessment, persistent loitering and surveillance of notified movements, assembly areas or humanitarian operations within designated areas or periods
- Prohibiting cross-line UAS flights, or making them subject to advance notification and approval, particularly during initial stabilization and protected movement windows
- Restricting persistent UAS observation over civilian areas, displacement sites, humanitarian routes, cantonment areas, weapon-storage sites and other protected locations
- Clarifying whether short-duration observation from within a party's own area is permitted, restricted or notifiable; any permission should not allow information collection or transmission in support of prohibited attacks
- Requiring notification of exceptional authorized flights near agreed lines, protected sites or humanitarian routes, including their purpose, general area and expected duration
- Establishing rapid liaison procedures for reported ISR incidents, especially where UAS activity affects protected movements, civilian areas or assembly sites.
- Ensuring that information from authorized monitoring and verification mechanism UASs is used only for verification through the agreed mechanism and is not shared directly with parties' operational command structures

Repeated unauthorized surveillance, cross-line flights or loitering should be treated as compliance concerns even where no strike occurs. Monitoring and verification mechanisms should distinguish between a reported flight, a corroborated incident and a finding that ISR supported an attack, while preserving relevant information for assessment.

A.5 Preventing UAS-enabled hostile activity across ceasefire lines

(Operational example for Lines of Effort 2, 3 and 7.)

Where ceasefire arrangements establish agreed lines, buffer zones or demilitarized zones, parties may consider provisions that prohibit not only unauthorized UAS flights within those areas, but also UAS-enabled hostile activity conducted from outside them.

Possible measures include:

- Prohibiting the use of UASs to conduct direct attacks across or into agreed lines, buffer zones or demilitarized zones
- Prohibiting UAS-enabled target acquisition, fire adjustment or battle-damage assessment or the transmission of information in support of attacks across or into those areas
- Restricting persistent UAS observation or loitering near agreed lines, particularly where it may expose forces, civilian communities, humanitarian operations or protected movements to attack
- Requiring the reporting and rapid clarification of suspected UAS-enabled hostile activity, including activity undertaken from outside the relevant restricted area
- Specifying that compliance is assessed not only by the location from which a UAS is launched or flown, but also by whether its activity produces, facilitates or supports hostile effects across or within the agreed area

A.6 Local monitoring, early warning and attribution

(Operational example for Lines of Effort 4, 5 and 7.)

High-end surveillance and counter-UAS capabilities may be unavailable, inaccessible or politically unacceptable. Monitoring and verification arrangements should therefore combine technical means with accessible, low-technology approaches.

Possible measures include:

- Designating local monitoring points near protected routes, assembly sites, humanitarian corridors and agreed lines
- Training monitors, liaison officers and, where appropriate, local observers to record relevant UAS indicators, including time, location, direction of travel, apparent altitude, observable markings, sound and reported impact
- Using standardized incident-reporting forms and communication channels so that reports can be compared and corroborated
- Maintaining accurate geographic records of reported incidents, authorized flight areas, restricted zones and protected sites
- Combining different sources of information, including ground observation, available imagery, technical data, community reports and information from humanitarian actors
- Establishing arrangements for rapid contact between monitoring and verification teams, party liaison officers, humanitarian actors and relevant local authorities to clarify potentially escalatory incidents
- Recording information relevant to attribution, including launch location, observed flight path, timing, markings, technical characteristics and any available information on the operator or controlling actor

Monitoring and verification mechanisms should distinguish between establishing that a UAS incident occurred, determining whether it violated the ceasefire, attributing the operation to an actor and determining responsibility under the ceasefire. Where responsibility is disputed, incidents should be referred to the agreed investigation mechanism and assessed using the available evidence, including evidence of effective control or affiliation where relevant.

Where attribution cannot be established, the incident should nevertheless be recorded and assessed for its implications for ceasefire compliance and confidence, and for measures to prevent recurrence. The purpose of these measures is not to create a complete air-surveillance system, but to establish a credible shared record of incidents, to support attribution where possible and to enable timely clarification and de-escalation.

A.7 Operational liaison and dissemination

(Operational example for Lines of Effort 4 and 7.)

UAS-related provisions are only effective if they are understood by commanders, operators, affiliated forces and personnel responsible for implementing the ceasefire. Parties should therefore translate agreed provisions into concise operational instructions and dissemination arrangements.

These may include:

- Written orders setting out prohibited, authorized and notifiable UAS activity
- Designated liaison officers with authority to receive notifications, seek clarification and communicate urgent concerns
- Briefing materials for relevant units (including irregular or affiliated forces) that explain protected areas, movement windows, reporting procedures and restrictions on UAS use
- Procedures for promptly updating forces when the ceasefire mechanism adjusts flight rules, protected areas or implementation timelines
- Clear instructions to prioritize reporting, liaison and de-escalation over unilateral action where alleged violations occur

Effective dissemination is particularly important during the first days of a ceasefire, when misunderstandings, unauthorized activity and delayed communication can rapidly undermine confidence.

A.8 UAS incident notification, clarification and response

(Operational example for Lines of Effort 4, 5 and 7.)

UAS incidents can quickly lead to accusations, fear and retaliation before the facts are clear. Ceasefire arrangements should therefore set out simple procedures for reporting incidents, seeking clarification and taking proportionate action. These procedures should prioritize immediate safety and de-escalation while preserving information needed to verify what happened and, where possible, identify those responsible.

Possible measures include:

- Establishing 24-hour contact points for each party, the monitoring and verification mechanism and, where relevant, humanitarian liaison personnel
- Requiring initial reports to record the time, location, observed activity, immediate risks and any available supporting information
- Requiring parties to acknowledge reports promptly and to provide an initial response through agreed liaison channels
- Allowing temporary protective measures where necessary, such as time-bound restrictions on UAS activity near a protected site, movement route or civilian area
- Preserving available evidence, including imagery, technical data, debris, witness accounts, monitoring and verification records and relevant communications
- Distinguishing immediate safety measures and preliminary reporting from formal findings on whether a violation occurred or who was responsible
- Referring unresolved or disputed incidents to the joint mechanism, mediator, independent technical experts or agreed guarantors, as appropriate
- Applying proportionate responses to repeated or serious violations, ranging from clarification and corrective action to formal investigation, public reporting or other agreed measures

These arrangements should enable rapid de-escalation without requiring monitors or parties to reach immediate conclusions about responsibility. Where responsibility remains uncertain, the mechanism should still record the incident, assess its effect on the ceasefire and identify steps to prevent recurrence.

Ceasefires are intended to stop violence, separate forces, protect civilians and create space for political dialogue. Yet armed conflicts and ceasefires have been reshaped by the proliferation and use of uncrewed aerial systems (UASs). Clear and context-specific provisions on UASs are thus now essential for effective ceasefires, and negotiators now require operational guidance for incorporating and implementing such measures in contemporary armed conflict settings.

Drawing on recent experiences, this UNIDIR Insight identifies common challenges posed by UASs in ceasefires, including continued surveillance and limited strikes, difficulties in monitoring, verifying and attributing violations as well as risks to civilians and humanitarian operations. It offers a practical, adaptable menu of options that can support mediators, negotiators, monitoring and verification mechanisms, and the parties themselves in anticipating and addressing UAS-related risks when they are designing and implementing ceasefires. The Insight offers a menu of options rather than a single model, recognizing that appropriate choices will depend on the type and purpose of a ceasefire, the capabilities of the parties, the involvement of external actors and the resources available to monitoring and verification mechanisms.

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