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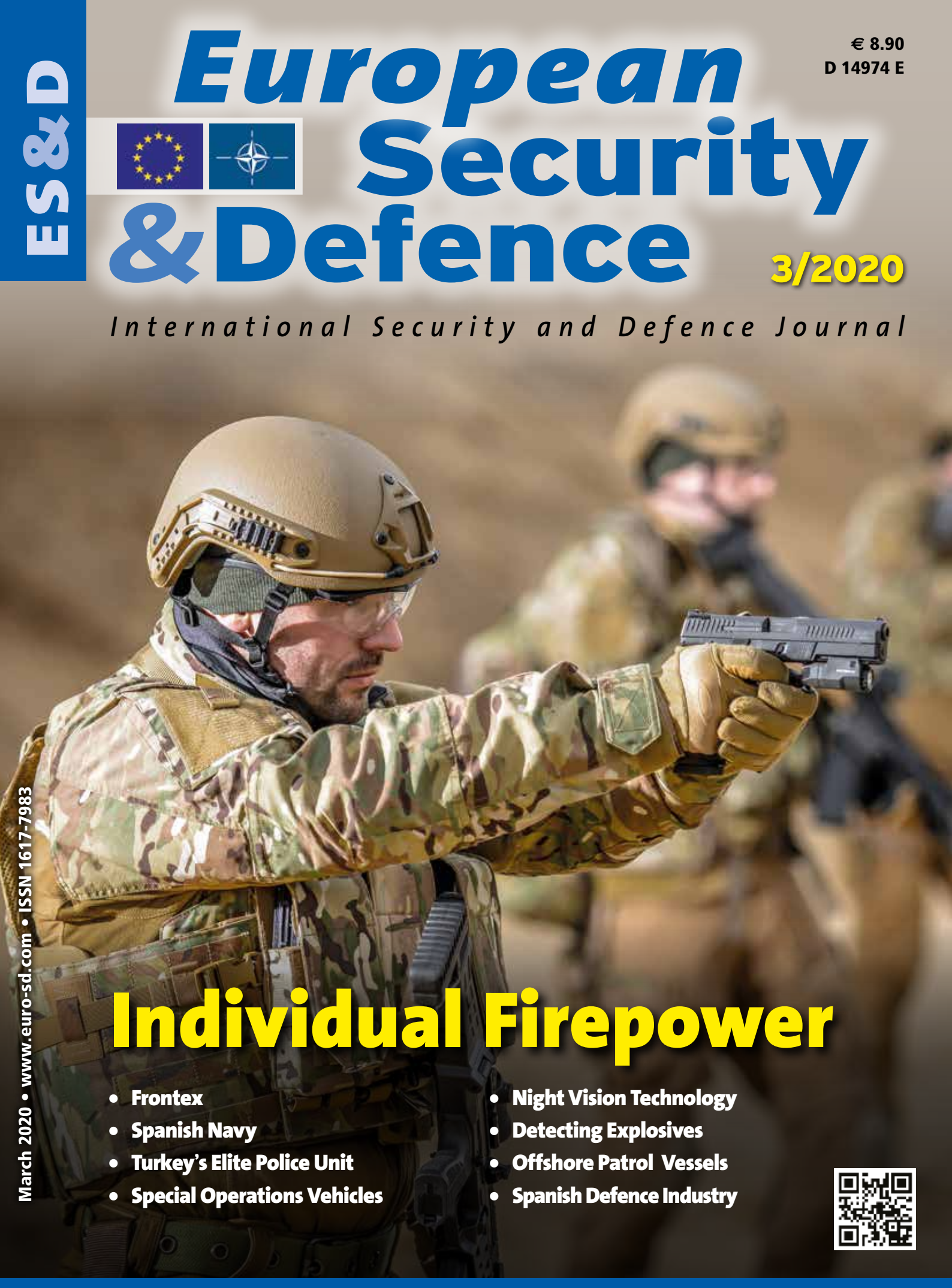

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Peace on the Spectrum

Electronic Warfare – a Game Changer?

Thomas Withington

When it comes to peacekeeping, electronic warfare is a controversial subject. Could its cautious, wider adoption during such missions become a game changer?

Electronic Warfare (EW) is more closely associated with high-tempo air-land battle than it is with peacekeeping efforts. In fact, its deployment to support such missions, particularly those led by the United Nations (UN), is controversial. Nevertheless, while some in the global peacekeeping community are cautious regarding the use of EW en masse therein, others feel that it could have a growing role to play in supporting future undertakings.

Within the wide remit of EW, it is arguably the gathering of Signals Intelligence (SIGINT), primarily Communications Intelligence (COMINT) and, to a lesser degree Electronic Intelligence (ELINT), and the electronic attack of hostile communications systems and possibly radar systems, which may have the most relevance to peacekeeping. Gathering COMINT has two useful purposes: It allows you to determine the position of friendly, hostile, and civilian communications systems. These can include an array of emitters, from military tactical radios to commercially available civilian 'walkie-talkie' style handheld systems and civilian cell phones. Though gathering this information, COMINT practitioners can generate an electronic Order-of-Battle (ORBAT). By generating the electronic ORBAT, friendly forces can be located by identifying and localising their tactical radios via their emissions. Likewise, emissions from hostile communications systems can be identified and localised, along with emissions from cellphones which may be used by civilians or non-state actors such as militia units. COMINT practitioners may be able to perform similar identification and localisation for military and civilian Satellite Communications (SATCOM).

Photo: US DoD

Peacekeeping operations can run the gamut from riot control to kinetic engagement. What role does electronic warfare have in supporting such missions?

Once the electronic ORBAT is drafted, a force can keep tabs on hostile forces relative to its own position. Imagine a nearby army unit which has in the past been known to attack civilians. It has been in the same spot for the past two days. COMINT has shown that their communications have been sporadically active, but have remained largely stationary. Suddenly, COMINT analysts detect a significant upsurge in radio traffic. A couple of hours later, they note that these emissions are no longer stationary. The army unit is now clearly moving, and heading towards a nearby village. Is the COMINT indicating that an attack on this village is imminent?

Collecting COMINT from areas over which a peacekeeping mission has responsibility for has other potential benefits. In our scenario discussed above COMINT practitioners would know where to direct electronic attack to jam these communications to perhaps slow down the momentum of the potential attack, or to transmit voice messages warning the army unit to cease and desist lest further action, possibly the use of lethal force, is taken.

History

EW has been used sporadically to support peacekeeping operations in the past. Open sources note that special forces from the Koninklijke Landmacht (Royal Dutch Army) were deployed to support the United Nations Multidimensional Integrated Stabilisation Mission in Mali (MINUSMA). MINUSMA has been in underway since April 2013. It is intended to help bring peace to the north of Mali which has been suffering an insurgency following a bid for independence by the National Movement for the Liberation of Azawad to achieve a homeland for the Tuareg ethnic group. Dutch special forces reportedly deployed COMINT gathering equipment, most probably manpack electronic support measures identifying and localising communications, to support their deployment. This equipment may have been used to eavesdrop on insurgent cellphone communications. Apart from this, precious little information has entered the public domain regarding the extent to which EW systems have been deployed during peacekeeping missions. Nonetheless, EW may have been involved in other operations, although not

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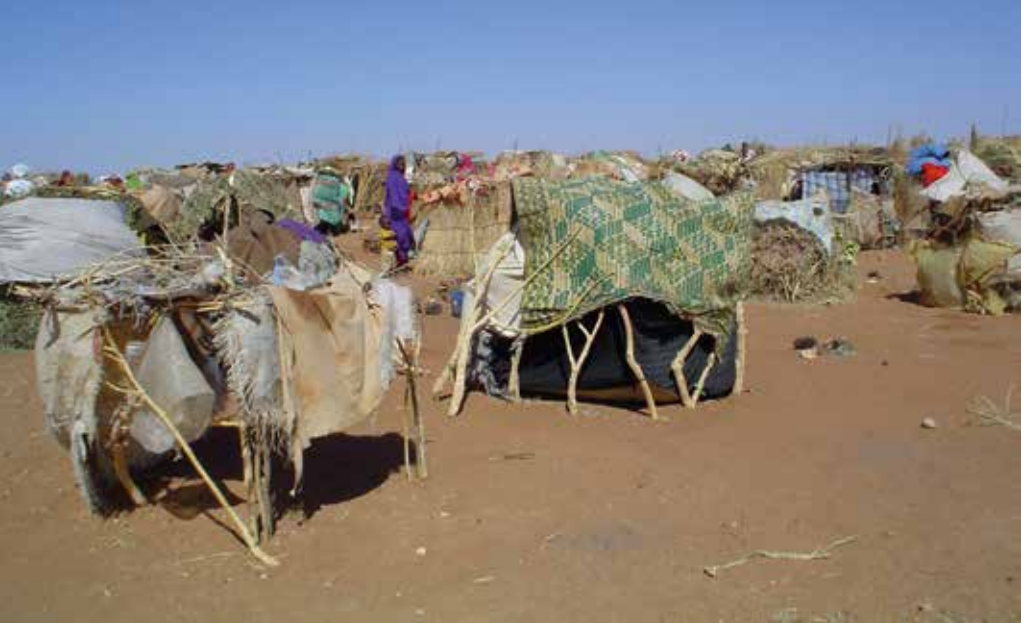


Photo: UN

Refugee camps could be protected by electronic warfare equipment which could discern the presence of any armed groups potentially threatening such facilities.

reported due to sensitivities: "We do have limited COMINT capabilities that we can call upon in certain contexts," says a senior source close to peacekeeping operations, "but member states are very sensitive about discussing these."

These sensitivities are important discriminators vis-à-vis EW in conventional warfare and EW in peacekeeping: "For 'conventional' war fighting, EW tends to be constrained only by your own capabilities (technology and people) and any self-imposed constraints; such as limitations on jamming to avoid 'blue on blue' electronic fratricide," observes Alan Blackwell, a former British Army EW practitioner and director of ABAL Insight: "In peacekeeping operations, there is a significant additional constraint. You are operating usually with the consent of the national government/authority, and acting in support of broadly civil aims."

The source adds that there is no 'one size fits all' as regards COMINT deployment to support a specific peacekeeping operation. Much will depend on the sensitivities of the host nation where the mission is taking place: "In some theatres using COMINT to listen in on militias is not a sensitive issue," they continue "but it can become one when a state's government thinks you may be listening in on their communications." Ultimately "COMINT is not a standard capability that we will bring to peacekeeping operations as a matter of routine."

EW is not restricted to COMINT. The domain also encompasses the jammers used to nullify Radio Frequency (RF) activated Remote Controlled Improvised Explosive Devices (RCIEDs). As the carnage during the NATO- and US-led interventions in Afghanistan and Iraq illustrated such bombs can be activated by a cornucopia of plentiful RF-driven wireless devices. These can include cell phones, garage door openers and even baby monitors. This threat has triggered a corresponding development of vehicle-born and manpack Electronic Countermeasures (ECMs) that can be used to protect convoys, individual vehicles and dismounted troops:

"Some of our troop contributing countries deploy with ECMs, particularly to protect against RCIEDS," the source articulated. For example, vehicles deployed to support the United Nations Interim Force in Lebanon which monitors the cessation of hostilities in Lebanon following Israeli's invasion and withdrawal from the country in 1982 and 2000, respectively, have been so equipped. The source cautioned that the deployment of RCIED jammers "is not always universally popular because the equipment can be really sophisticated from the perspective of the host governments" who might be concerned that such equipment is used to gather COMINT. Such concerns are understandable given that the Very/Ultra High Frequencies of 30MHz to three gigahertz waveband where such potential RCIED activation devices reside are the same which host civilian and military communications. There are also occasions where, despite the sensitivities that EW systems writ large may generate, the UN or the international organisation tasked with leading the peacekeeping mission may insist that certain EW materiel is allowed into theatre: "We would not deploy a close air support platform without self-protection systems like ECMs," the source confided, reflecting the threat from infrared-guided Man-Portable Air Defence Systems (MANPADS) which are present in several theatres around the world. They added that a similar reticence would be found over the deployment of warships to support peacekeeping missions which lacked EW systems to protect them against radar-guided Anti-Ship Missiles (AShMs) which may be fired by belligerents from littoral areas in war-torn states.

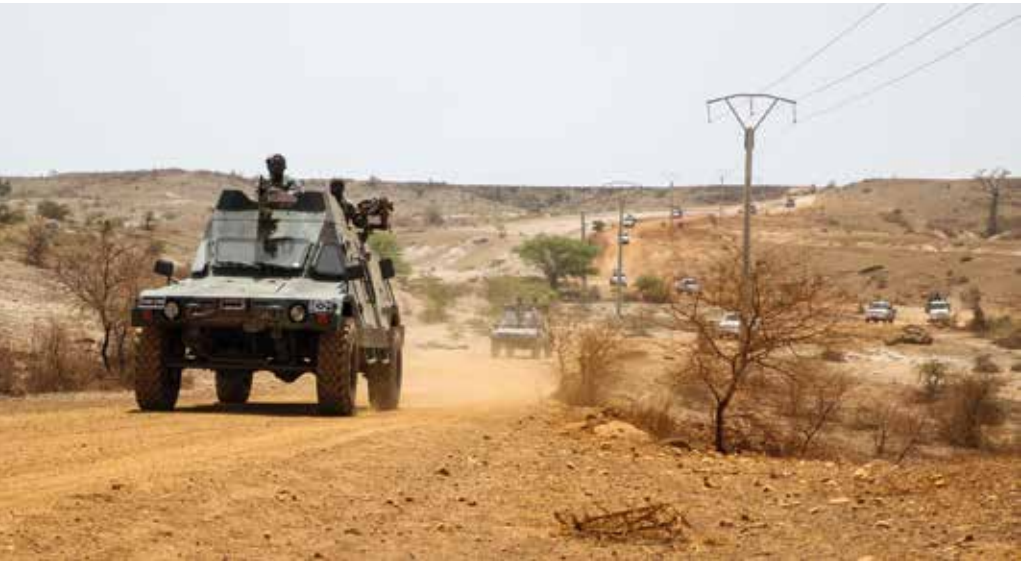


Photo: US DoD

Convoys supporting peacekeeping operations can be vulnerable to attack by RCIEDs. Jammers have been used to this effect in the past supporting peacekeeping missions, although their deployment can be controversial.

Threat Proliferation

These are not idle concerns. Recent years have witnessed the proliferation of both threats. Turkish media reported in late December 2019 that Russian-origin KBM 9K38 IGLA (NATO reporting name SA-18 Grouse) infrared MANPADS had been found by Turkish forces during operations against Kurdish insurgents in northern Syria. Similarly, on 9, 12, and 15 October 2016, a flotilla of US Navy ships, including the ARLEIGH BURKE class destroyer USS MASON came under attack from a total of nine AShMs believed to have been fired

by Houthi insurgents involved in Yemen's civil war. The ships were navigating the Bab el-Mandeb Strait connecting the Red Sea to the Gulf of Aden. Fortunately, the ships were able to repel the attack through the use of their soft and hard kill defensive systems notably BAE Systems' NULKA active RF decoys and Raytheon RIM-66 Standard Missile-2 series semi-active radar homing surface-to-air missiles.

The use of EW for force protection can be controversial in other ways. Deploying EW to protect troops on peacekeeping operations, although defensive, might not be seen that way by the host nation: Force protection depends on "understanding the intent of hostile actors. That often requires a more aggressive form of EW to seek out intelligence to put together the threat picture," says Mr. Blackwell: "The extent to which this is needed, justifiable and/or acceptable can be a sensitive matter and it is easy for a host nation, which by definition is on the 'back foot' if it has had to ask for peacekeeping assistance, to feel threatened by a foreign military force on its soil."

Despite these challenges, the source emphasised that sensitivities regarding the deployment of ECM-based self-protection equipment can often be ironed out by dialogue with the host nation where the peacekeeping mission will occur: "We tend to be quite transparent about what we are deploying and to be open to the host governments… This is all sorted out through discussions and negotiations and follows the three basic principles by which UN peacekeeping operations are organised: the defence of the force and the mission, the impartiality of the force and the consent of all parties."

Equipment

From an equipment perspective armies supporting peacekeeping operations tasked to deploy EW have a wide array of material to choose from, particularly in the COMINT and Communications Jamming (COMJAM) domains. Such equipment will at the very least need to cover a 30 megahertz to six gigahertz waveband. This will allow it to gather COMINT on civilian and military very/ultra high-frequency (V/UHF) communications. Dismounted troops can employ backpack-based COMINT and COMJAM systems such as Allen Vanguard's SCORPION-2, Chemring's RESOLVE, DSE's MRJ family, Elettronica's ELT/334(V)2, Enterprise Control Systems' Kestrel series, GEW Technologies' GMJ-9000 family, L3Harris" Broadshield-LCS/MCS, Leonardo's GUARDIAN-W2/C2, and Plath's JS-MC and AJS-40P. Likewise, deployments may require larger mobile COMINT/COMJAM platforms capable of providing a wider radius of coverage. Appropriate platforms in this regard include Albrecht's SAJ-2000MD, Israel Aerospace Industries' EL/K-7020 and EL/K-7012, HP Marketing and Consulting's HP-326OH/OM; Indra and Rohde and Schwarz's V/UHF jamming systems, and SRC's TRC-274. Finally, RCIED jammers to protect convoys will continue to be an important consideration: Aselsan provides the Sapan reactive counter-RCIED jammer which joins Netline's C-Guard-RJ, SESP Group's Jamkit and Sierra Nevada's AN/PLQ-9 JCREW-3.1. While this is by no means an exhaustive list, it provides an indication of the products available. These will vary considerably in price. This is important as some armies

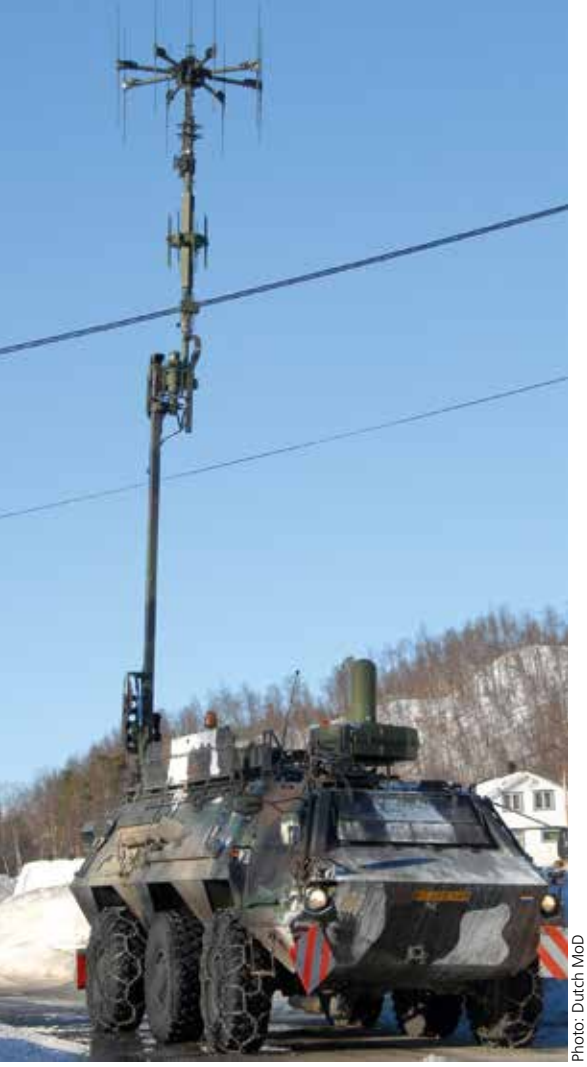


Photo: Dutch MoD

The deployment of EW platforms, particularly mobile assets, could provide peacekeeping missions with useful COMINT and COMJAM capabilities, yet such deployments must be executed carefully.

may lack the cash to splash out on highly sophisticated COMINT/COMJAM systems. Moreover, the electronic threats which maybe encountered during a peacekeeping mission may be relatively unsophisticated meaning that an army might not necessarily need to buy advanced EW equipment to ensure they can meet their mission's electromagnetic obligations.

The Future

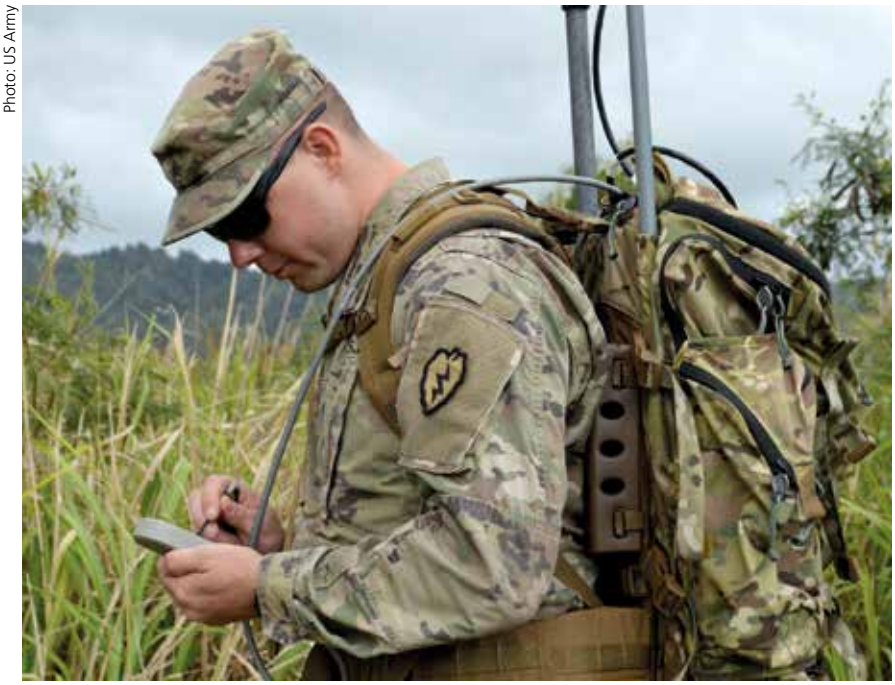
Walter Dorn, professor of defence studies at the Royal Military College of Canada, believes that the UN should think more about the wider adoption of EW, particularly electronic attack to support its peacekeeping efforts: "Jamming should be an important capability for the UN." Dorn argues that jamming of a belligerent's communications or radars provides a useful means of frustrating offensive action which might violate the terms of a ceasefire, for instance, short of using kinetics: "You could see an attack occurring, or about to occur, and you could use jamming to disrupt this," he argues. Alternatively, electronic attack could be used to intercept the belligerent's communications and to transmit warnings regarding the potential consequences of their actions. Similarly, collecting COMINT could pay dividends when particular individuals such as alleged war criminals are being sought as part of the mandate. Monitoring the spectrum could reveal the individual's location, as well as revealing their intentions and behaviour, helping with their arrest.

The relevance of the electromagnetic spectrum to peacekeeping operations will only increase, Blackwell believes, driven by the demands militaries place on the spectrum for communications: Even, a rag-tag militias using civilian handheld radios to communicate are still using the spectrum: "More military activity will be conducted over data networks that look increasingly similar, often using the same communications bearers, as civilian data," Blackwell posits: "The advent of 'cyber', in its widest sense, has further blurred the distinction between military and civilian data and communications that it is almost impossible to distinguish between activities necessary to protect one's own troops, and activities that seek to gain intelligence".

As noted above, the use of electronic warfare writ large can be highly sensitive in peacekeeping, and electronic interception and attack could be similarly controversial. Dorn argues that "the UN should be doing this, but it should be done at a very tactical level against specific targets, and it should only be done with high level permission to provide safeguards against abuse of this capability." Having such clear and transparent safeguards could give reassurances to host governments and the civilian population where the peacekeeping mission is taking place "that it is not the UN's intention to perform widespread spying." Likewise, it could be stressed that any deployed EW capabilities are being used to protect the population, Dorn underscores. The Janjaweed militia which terrorised isolated villages in the region of West Darfur in south-western Sudan were reliant on tactical radios, thought to have been supplied by domestic Sudanese companies and by the Islamic Republic of Iran, and SATCOM. Electronic attack directed against such communications could have significantly degraded the ability of the Janjaweed and their Sudanese government sponsor to command and control such attacks.

"The UN is a very cautious organisation, and its leaders do not want a military mind-set to dominate in peacekeeping operations," Prof. Dorn observes, echoing the three basic principles of peacekeeping missions cited above. Nonetheless, while "there is a reason to be cautious it should not stop innovation," he argues. "Is it not better to do electronic damage rather than physical damage, and only use force as a last resort?" ■

Photo: US Army



Backpack EW systems would have the potential to protect dismounted troops supporting peacekeeping operations, as well as helping to gather COMINT. Such capabilities may have been deployed by Dutch special forces during recent peacekeeping missions.