

Appendix 4

Summary of the benefits of various monitoring technologies

Table A4.1 Summary of the benefits of various monitoring technologies

Monitoring technology	Benefits
Video monitors	
<ul style="list-style-type: none"> • video cameras • web cameras • closed-circuit television • digital video networks • aerial and space-based 	<ul style="list-style-type: none"> • supplement observation by the human eye • zoom capability for higher-resolution imagery • monitor current conflict zones nearby, from the air or from a remote location • spot approaching threats in daytime and in illuminated areas at night (e.g. in UN compounds) • verify commitments made in peace agreements, spot violations of human rights • detect illegal activities, including malicious acts, smuggling or sanctions evasion • share imagery in real time and in reports • record events for future analysis or for use as evidence in commissions or tribunals
Night vision	
<ul style="list-style-type: none"> • image intensifiers • thermal imagers 	<ul style="list-style-type: none"> • as above, but at night • allow for night patrols and monitoring of illegal movements of arms and personnel at night (including sanctions evasion and preparations for attack) • thermal imagers can operate in complete darkness whereas image intensifiers require some ambient light (e.g. moonlight or artificial illumination)
Motion detectors	
	<ul style="list-style-type: none"> • detect approaching humans or vehicles, especially at night • activate cameras, illuminators and/or alarms
Radars	
<ul style="list-style-type: none"> • air surveillance (ASR) • artillery locating • ground surveillance • ground penetrating (GPR) • synthetic aperture • marine • weather 	<ul style="list-style-type: none"> • operate day and night • operate in all weather conditions • detect and/or image aircraft (ASR), ground vehicles or boats and individuals • locate the origins of artillery fire • discover buried weapons or mass graves (GPR) • warn of oncoming storms or turbulence

Table A4.1 (cont.)

Monitoring technology	Benefits
X-ray machines	<ul style="list-style-type: none"> • examine baggage for dangerous/prohibited items such as weapons
Acoustic sensors	<ul style="list-style-type: none"> • detect and locate small arms fire • detect movement of persons or vehicles
Seismic sensors	<ul style="list-style-type: none"> • detect personnel/vehicles (geophones) • detect explosions (seismic arrays)
<ul style="list-style-type: none"> • geophones • seismic arrays 	
Chemical sensors	<ul style="list-style-type: none"> • detect explosives, poisons and possible chemical weapons
Metal detectors	
<ul style="list-style-type: none"> • hand-held wand • mine detector 	<ul style="list-style-type: none"> • check for metal-containing weapons (hand-held wand) • detect mines
Pressure transducers	
<ul style="list-style-type: none"> • intrusion alarms • road monitor 	<ul style="list-style-type: none"> • detect persons entering camps • detect vehicles trying to circumvent checkpoints
Radio-wave monitoring	
<ul style="list-style-type: none"> • signal-locating equipment • radio scanners / signal monitoring 	<ul style="list-style-type: none"> • find source of radio transmission • intercept calls of hostage-takers
Positioning and tracking systems	
<ul style="list-style-type: none"> • Global Positioning System (GPS) • transponders and tags • radio frequency identification (RFID) 	<ul style="list-style-type: none"> • determine location of observer or of distant objects (using GPS and laser range-finders) • relay position to remote monitors (transponders and tags) • identify equipment (including stored weapons, using RFID)

Note: Technologies less likely to be used in peacekeeping include: sonar, ultrasound, LIDAR, taut-wire fences, IR break-beam detectors, seals and tags. Nuclear detectors (Geiger counters) are needed only when nuclear materials present a danger.