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HACKER - A person who delights in having an intimate understanding of the internal workings of a system - computers and computer networks in particular. The term is almost universally misused in a pejorative context, where **CRACKER** would be the correct term. [10:2736] Also called **WHITE HAT HACKER**. See also **GRAY-HAT HACKER**, **HONEYPOT**. **NOTE**: Although **CRACKER** is the correct term for malicious actions directed against computer systems, the term **HACKER** is becoming (2001) synonymous through popular usage.

HAIRY BUFFALO (HB) - a modified NP-3 ("Orion") airplane incorporating a **FIBER-OPTIC BACKBONE** that allows for rapid systems integration in order to provide a flexible flying test bed for sensors, communications and **COMMAND AND CONTROL (C²)** equipment. This fiber optic backbone links with a Real Time Surveillance Data Link (RTSDL) that allows for secure Tactical Computer Protocol/Internet Protocol (TCP/IP) connection to the surface forces. Currently (*circa* 2002), **HAIRY BUFFALO** is investigating ways of ensuring autonomous platform targeting capabilities using onboard and offboard sensors and onboard targeting systems, while providing the ability to communicate and operate in a Joint Tactical Command System / **NETWORK-CENTRIC WARFARE (TCS/NCW)** Environment. [10:2978] **NOTE**: The *Hairy Buffalo*, as the *Orion* is called, is a "Time Sensitive Strike and Network Centric Warfare Test Aircraft" equipped with air-to-ground sensors and data-links; it employs off-the-shelf components and some spin-off technologies to find, identify and attack moving targets within minutes. .



Hairy Buffalo

HAND-EMPLACED JAMMER - A lightweight, man-portable, expendable solid-state jammer with self-disabling features, designed to be hand-emplaced to operate against threat signals. [4:26] See also **LEAVE-IT-BEHIND JAMMER**.

HANDHELD INTERAGENCY IDENTIFICATION DETECTION EQUIPMENT (HIIDE) - A portable, self-contained system used in the field for the tactical identification of persons. The device contains software for collecting **BIOMETRICS** information on thousands of persons. It includes tools for iris, facial and fingerprint collection and matching. [10:3106]

HANDHELD STANDOFF MINE DETECTION SYSTEM (HSTAMIDS) - A lightweight dual-sensor (combined **GROUND-PENETRATING RADAR** and metal detector) landmine detector with a claimed (2002) detection rate near 100 percent. [Ft. Belvoir Army News Service, Feb. 20, 2002] **NOTE:** The dual-sensor makes detection of plastic-cased mines possible.

HANDOFF - The passing of tracking responsibility from one system to another, such as from a search radar to a fire-control radar. []

HANDSHAKING - Part of a communications **PROTOCOL** that requires the interchange of predetermined signals between devices prior to making a connection. [10:45]

HAPTIC DEVICE - A force feedback system that permits a user to experience a sense of touch (haptics) when interacting with a computer-driven interface. Haptics and **VIRTUAL REALITY (VR)** have applications in driving simulators and telemedicine and training for surgery. []

HAPTICS - The science of applying touch (tactile) sensation and control to interaction with computer applications by applying forces, vibrations and/or motions to the user.. By using special input/output devices (joysticks, data gloves, or other devices), users can receive feedback from computer applications in the form of felt sensations in the hand or other parts of the body. In combination with a visual display, [] **NOTES:** (1) Haptics technology can be used to train people for tasks requiring hand-eye coordination, such as surgery and space ship maneuvers. (2) The International Society for Haptics Web site is www.isfh.org.

HARD KILL - The physical destruction of a weapon or a platform through employment of electronic counter- measures techniques, bombs, or missiles. [] Contrast with **SOFT KILL**, **FIRM KILL**.

HARD-KILL ECM - HARD KILL weapons which employ electronic warfare concepts to achieve target destruction. [] See also DIRECTED ENERGY WEAPON, FRONT-DOOR SYSTEM PENETRATION, BACK-DOOR SYSTEM PENETRATION; LETHAL ELECTRONICS COUNTERMEASURES.

HARD TARGET SMART FUZE (HTSF) - A tail-mounted bomb fuze that incorporates accelerometers and a processor chip. The HTSF can determine if the bomb has struck earth, concrete, rock, or empty space, and can count the number of layers it has penetrated. Accordingly, it can compute distance or time to detonate the bomb for a specific target. [10:2927]

HAVE STARE (HS) - An X-band (8-12 GHz) 200 Kw tracking RADAR that can detect small space debris in the 1 to 10 cm range, depending on altitude. []

HAYSTACK LONG RANGE IMAGING RADAR (LRIR) - Part of the Millstone Haystack complex consisting of two radars that share hardware and power which precludes simultaneous operations. The two radars are the Haystack Long Range Imaging Radar (LRIR) and the Haystack Auxiliary Radar (HAX). These radars support missions for the U.S. Space Command, the National Science Foundation, and NASA. Their primary function is for deep space imaging of foreign and domestic satellites and orbital debris. The radars image every new foreign space launch in Near Earth (NE), and image domestic satellites in trouble. The LRIR takes two-dimensional images of earth satellites by processing highly stable, coherent signals to extract target return range and Doppler information. The radar is capable of tracking and imaging near-earth (NE) satellites, 200-4,000 km altitude, as well as deep space objects out to 40,000 km range and beyond. The maximum tracking rate of the Haystack antenna is 2 degrees/second, and this sets the limits on observation of near-earth satellites, especially those passing nearly overhead. The limitation on deep space objects is their size: a one square meter radar cross section at 40,000 km is roughly the detection threshold of the radar. The radar operates at 10-GHz center frequency and transmits over a broad range of pulse widths and pulse repetition frequencies, including a 1-GHz linear FM pulse which, when compressed, is used for radar imaging. The radars also provide detection of objects in space and gather information about their estimated size, velocity, altitude, and direction of travel. [10:2804]

HAZARDS OF ELECTROMAGNETIC RADIATION TO PERSONNEL, ORDNANCE, AND VOLATILE MATERIALS (HERO) - See ELECTROMAGNETIC RADIATION HAZARDS.

HEAD-UP DISPLAY (HUD) - A display of flight, navigation, attack, or other information superimposed upon the pilot's forward field of view. [1.1] See also HORIZONTAL SITUATION DISPLAY, VERTICAL SITUATION DISPLAY.

HEALING AGENT - See AUTONOMIC HEALING

HEDGEHOG (HH) - An anti-submarine mortar-like projectile used by destroyers and anti-submarine ships *circa* 1942 - 1960. They were favored over depth charges because they could be fired in patterns 100-150 yards ahead of the ship while it still maintained sonar contact with the target submarine. Each hedgehog was approximately 7 inches in diameter at the warhead end and carried 30 lbs of TNT (or 34 lbs of Torpex). Twenty-four hedgehogs were mounted in open view in a cradle-like base on the bow of the ship. The cradle was mounted on a power drive which allowed a training arc of 20 degrees on either bow (later versions allowed a full gun train). The ring-finned tail of each hedgehog was sleeved to a rod mount called a *spigot* which held the firing pin. The spigots also had a tilt capability to compensate for the roll-and-pitch motion of the deck. Hedgehogs were fired in pairs at intervals which deployed the 24 weapons in a 1 - 1.5 second interval, forming a circular pattern at water entry. [*ALL HANDS* magazine, April 1958, p45] See also MOUSETRAP.
NOTE: Hedgehogs had the additional advantage over depth charges (which detonated at preset depths) in that they did not detonate except on contact. Thus, if the submarine was not hit, sonar conditions were not deteriorated by bubbles and water disturbance generated by a detonation, as would be the case with depth charges.

HELICOPTER MINE - A device which will autonomously search, detect, track, identify, engage and destroy enemy helicopters flying at speeds up to 350 kilometers per hour and at altitudes up to 250 meters. It possesses a positive hostile target signature identification processor that sorts and identifies helicopter acoustic signatures. The mines can be equipped with counter-mobility remote control system transceivers, enabling them to be de-activated for friendly force passage and mine recovery. [10:2546]

HERTZ - The unit of FREQUENCY, one cycle per second. [3]

HETERODYNE LADAR - See HOMODYNE LADAR.

HETEROGENEOUS URBAN RSTA (Reconnaissance, Surveillance and Target Acquisition) TEAM (HURT) – A low-flying Unmanned Aerial Vehicle (UAV) under control of individual soldiers in an urban battle situation. As envisioned (2005), HURT technology would allow the warfighter to directly request timely information from UAVs like the Hunter system (see illustration below). [*www.Military.com*]
NOTE: For example, a soldier with a handheld computer would request information about suspected enemy positions, and the system would prioritize the requests and direct individual UAVs to obtain the information and deliver it. Such technology could someday be adapted for other military applications and missions.



HIDDEN SCAN - An ECCM technique for use by semi-active missile guidance receivers. [8] See also **INVERSE GAIN ECCM**.

HIGH ALTITUDE AIRSHIP (HAA) - A lighter-than-air craft capable of carrying a 4,000 lb payload of sensors and other mission equipment. It operates at an altitude of approximately 12 miles in a geostationary position for up to a year at a time. The electrically-driven propellers of the HAA are powered by a combination of solar panels and fuel cells. [10:3033] NOTE: The 500-foot long HAA is about 25 times the size of the familiar blimps seen at sport events in the U.S.

HIGH ENERGY DENSITY MATERIAL (HEDM) - Material composed of high-energy ingredients, such as explosives, propellants, and pyrotechnics. [10:89]

HIGH ENERGY LASER (HEL) - A **HARD-KILL** ECM device which employs lasers used as directed energy weapons. They work by accelerating electrons to very high velocities, then causing them to radiate some of their kinetic energy at the proper wavelength and in the proper direction in resonance with light waves in the electron beam. [5:1] EXAMPLES: X-RAY, CHEMICAL, FREE-ELECTRON, and EXCIMER LASERS.

HIGH ENERGY MILLIMETER WAVE (MMW) - Directed energy in the **MILLIMETER WAVE** region of the **ELECTROMAGNETIC SPECTRUM**. []

HIGH-ENERGY LASER WEAPON SYSTEM (HELWEPS) - A defensive system incorporating a **HIGH ENERGY LASER (HEL)** designed to protect Aegis-class cruiser and destroyers against high-speed, sea-skimming cruise missiles. The self-

contained, modular (fire-control, ammunition, and pump) weapon configuration is intended to replace a ship's forward 5-inch/54 gun mount. The device is a deuterium-fluoride (DF) LASER which produces a coherent beam that can (with only about 1-second engagement duration) destroy missile target radomes at 4 kilometers, and optical systems at up to 10 kilometers. [10:2560] See also MIRACL.

HIGH ENERGY RADIO FREQUENCY (HERF) - A weapon that can direct high levels of RF radiation at digital devices such as computers and navigation equipment, thereby disrupting their operation. [] Also called EMP/T BOMB.

HIGH-FREQUENCY SURFACE WAVE ARRAY RADAR (HIFAR) - A BISTATIC RADAR operating in the HF (3 - 30 MHz) range, used for ocean surveillance. At these frequencies, the radar waves propagate over the ocean surface for long distances, well beyond the normal radar horizon. []

HIGH OFF-BORESIGHT SYSTEM (HOBS) - A helmet-mounted sight and short-range missile system to combat Mig-29s. []

HIGH PAY-OFF FOCUS AREA (HiPOFA) - An area where: (a) if activities were undertaken, could significantly enhance, or (b) if not undertaken, have a critical adverse impact on, the effectiveness of coalition operations. HiPOFA may include strategic, operational, tactical, technological, and inter- American, British, Canadian, Australian (ABCA) organisational activities. [10:2999] NOTE: The feature of a HiPOFA is that the output from the collaborative effort should be significantly greater than the collective investment.

HIGH POWER COMBINER - A radio frequency (RF) device which combines the outputs of multiple solid state amplifiers over a given frequency range. []

HIGH-POWERED MICROWAVES (HPM) - See HIGH-POWERED RF.

HIGH POWER MICROWAVE/RADIO FREQUENCY (HPM/RF) - A DIRECTED ENERGY WEAPON (DEW) under DoD's WEAPONS SYSTEMS TECHNOLOGIES (WST). The use of high-power electromagnetic microwaves for penetrating military systems through unconventional and/or inadvertent pathways, causing permanent damage or temporary upset to mission-critical electronic equipment. [www.dtic.mil] See also ANTIMATTER PARTICLE BEAM (APB), CHARGED PARTICLE BEAM (CPB), GAMMA-RAY LASER (GRASER), KINETIC ENERGY WEAPON (KEW) and NEUTRAL PARTICLE BEAM (NPB).

HIGH-POWERED RF - A term replacing **HIGH-POWERED MICROWAVES**, high-power energy roughly above 1,000 MHz. [] See **HIGH POWER MICROWAVE/RADIO FREQUENCY (HPM/RF)**.

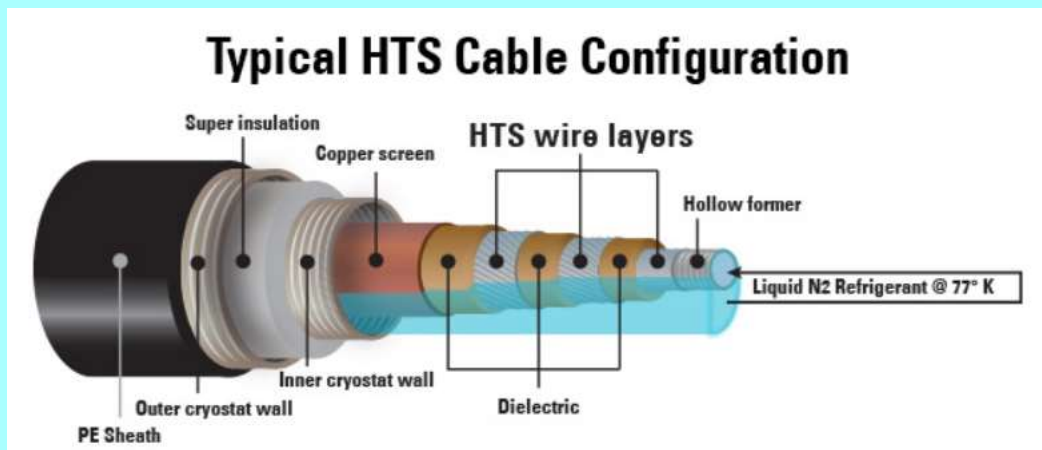
HIGH-POWER SOURCE NOISE JAMMING - A type of **BARRAGE JAMMING** in which noise is added to the high-power signal of the jammer. [10:36] Contrast with **LOW-POWER SOURCE NOISE JAMMING**.

HIGH POWERED ACOUSTIC WEAPON - A **NONLETHAL WEAPON** versatile high power acoustics system with a tunable, less-than-lethal incapacitating capability. [10:2745] See also **ACOUSTIC WEAPON**.

HIGH SPEED ANTI-RADIATION MISSILE (HARM) - High-speed anti-radiation missiles designed for use against early-warning radars and air defense systems. [] See also **ANTI-RADIATION MISSILE**.

HIGH-SPEED CHOP - A technique to achieve compatibility between **RADAR WARNING RECEIVERS (RWRs)** and **ECM** systems. The receiver and transmitter operate effectively simultaneously by implementing a high-speed time sharing scheme. [10:2400] See also **LOOK AROUND, LOOK OVER, and LOOKTHROUGH**.

HIGH TEMPERATURE SUPERCONDUCTIVITY (HTSC) - Superconductivity (zero electrical resistance) at temperatures above 125 degrees Kelvin (-234 degrees Fahrenheit). [10:116] **NOTES:** (1) The goal in HTSC is to be able to produce superconductors that can operate at room temperature. (2) Magnesium diboride shows promise (circa 2002) as a superconductor. Its superconducting properties were discovered by Japanese scientists in 2001. Magnesium diboride is inexpensive to make, simple to cool, easy to shape into powder-filled iron wires, and has a superconducting transition temperature of 39 degrees Kelvin. [10:2943]



HOG NOSE - See RIVET JOINT

HOG CHEEKS - See RIVET JOINT

HOLE-FINDING - An ECCM technique used against a noise jammer which partially covers a radar frequency band. It consists of scanning the receiver bandwidth at the end of a pulse repetition period to determine the frequency having the lowest jamming level at which the radar will operate during the next pulse repetition period. [8]
Synonymous with HOLE-HUNTING and HOLE-SEEKING.

HOLE-HUNTING - See HOLE- FINDING.

HOLE-SEEKING - See HOLE- FINDING.

HOLOGRAM - An in-depth apparent three-dimensional image with great realism produced by illuminating an object field with two interrelated coherent light beams, one directly from a light source and the other slightly delayed, thus giving the three-dimensional appearance. [10:14]

HOLOGRAPHIC DATA STORAGE SYSTEM (HDSS) - Optical interference images recorded in a light-sensitive, usually erasable, medium. To achieve high storage density, the images are multiplexed -- that is, more than one image occupies the same volume within the crystal. To differentiate among images, subtle recording differences, such as changing the reference angle, changing the wavelength of the laser light, or other optical stratagems, are used. Later, the inverse optical conditions are used to reconstruct the hologram so that data can be optically or photographically read out. [10:2594]

HOLOGRAPHIC MEMORY - A four- dimensional (the fourth dimension is wavelength) storage medium based on a method called "spectral hole burning" to retain holographic images (HOLOGRAMs), which can later be retrieved using low level laser rays. [10:2410]

HOLOGRAPHIC NIGHT VISION GOGGLES (HNVG) - Night goggles which give the wearer a see-through image, enlarged peripheral vision, and protection from flashes, while allowing the performance of night tasks for driving vehicles, flying low-speed aircraft, map reading, maintenance, and night patrols and surveillance. [*from Internet IOP Sensor System (Belgium) product description*] NOTE: Because of the large exit pupil diameter no accurate positioning of the goggles on the head is needed. For close work such as map and document reading, there is a built-in auxiliary light source emitting light in the INFRARED (IR) spectrum so that it cannot be detected by the naked eye.

HOMEKEY – A 16-gigabyte (*ca* 2012) USB stick that is set up to run a simple operating system in a secure environment. When plugged into a personal computer (except MacIntosh, *ca* 2012), it bypasses the internal hard drive and runs the simple software straight off the stick. [10:3122, *SIGNAL*, June 2012] NOTE: HOMEKEY will work even if the hard drive is not functioning, because all work is saved on the HOMEKEY stick.

HOMELAND SECURITY DEVICE - (1 - personal device) A small, light-weight, device that can be worn on the person to alerts military, civilian, and private citizens by broadcasting accurate REAL TIME tailored messages during emergencies.

Depending upon the individual's job function, organizational position, or clearance level, the wearer will receive the critical information needed to either respond to the emergency or to get out of the way. (2 - vehicle device) An auto safety system that, when triggered, alerts law enforcement or security personnel that the vehicle is being tampered with or stolen, or that a driver or its occupants are victims of a holdup or car-jacking or undergoing a medical emergency. [*Govcon.com news item 2/24/02*]

NOTE: Examples of features of a vehicle homeland security device: automatically dialing 911 and opening a live channel with an emergency operator who can monitor what is going on inside the vehicle as well as pinpoint its location. The device can also disable the vehicle after engine cutoff and initiate calls to pre-selected telephone numbers to notify recipients that the vehicle is being tampered with or being stolen.

HOME-ON-JAM (HOJ) - A means whereby a missile guidance receiver utilizes the self-screening target jamming signal to develop angular steering information so that the missile can home on that target. [8]

HOMING GUIDANCE - A system by which a missile steers itself towards a target by means of a self-contained mechanism which is activated by some distinguishing characteristics of the target. [1.1] See also ACTIVE HOMING GUIDANCE, PASSIVE HOMING GUIDANCE, SEMI-ACTIVE HOMING GUIDANCE.

HOMODYNE LADAR - A laser radar which includes an optical detector constantly receiving a local oscillator (LO) signal in the form of a low-power laser beam. When a reflected return from a target is received, the returned beam is combined with the LO beam on the optical detector which picks up the difference frequency between the two beams. The frequency of the beat signal indicates target relative speed and direction. [] Synonymous with HETERODYNE LADAR.

HONEYPOT - A computer system set up for the express purpose of attracting and studying computer HACKERS. [10:2964]

HONEYPOTS - Closely monitored network decoys serving several purposes: they can distract adversaries from more valuable machines on a network, they can provide

early warning about new attack and exploitation trends and they allow in-depth examination of adversaries during and after exploitation of a **honeypot**. **Honeypots** are a highly flexible security tool with different applications for security. They don't fix a single problem. Instead they have multiple uses, such as prevention, detection, or information gathering. **Honeypots** all share the same concept: a security resource that should not have any production or authorized activity. In other words, deployment of **honeypots** in a network should not affect critical network services and applications. A **honeypot** is a security resource whose value lies in being probed, attacked, or compromised.

There are two general types of **honeypots**:

- **Production honeypots** are easy to use, capture only limited information, and are used primarily by companies or corporations;
- **Research honeypots** are complex and used to deploy and maintain, capture extensive information, and are used primarily by research, military, or government organizations.

[www.honeypots.net] NOTE: An example of a **honeypot** is a system used to simulate one or more network services that you designate on your computer's ports. An attacker assumes you're running vulnerable services that can be used to break into the machine. This kind of **honeypot** can be used to log access attempts to those ports including the attacker's keystrokes. This could provide advanced warning of a more concerted attack. See also www.honeypots.net/honeypots/links for related information and to learn all about the different types of Honeypots.

HOOAH - A slang term used by soldiers (*circa* 2001). primarily light infantry, airborne troops and rangers, referring to or meaning anything and everything except "no." Some documented meanings (presumably depending on context and the situation): (1) Wonderful, great; (2) Good copy, solid copy, roger, message received, understood, good; (3) Glad to meet you, welcome; (4) I don't know the answer, but I'll check on it, I haven't the vaguest idea; (5) You've got to be kidding; (6) Thank you; (7) Go to the next [briefing] slide; (8) You've taken the correct action; (9) I don't know what that means, but I'm too embarrassed to ask for clarification; (10) I am not listening; (11) That is really neat - I want one too; (13) Yes; (14) Stop sniveling; (15) That is enough of your drivel - sit down; (16) Amen. []

HOP - (1) In FREQUENCY HOPPING (HF), the shifting of a transmitter from one frequency to another. [] (2) For network ROUTING, a segment of a path to a destination on a network (a path from the origin to a destination on a network is a series of hops through ROUTERS). [10:2736] See also ROUTE.

HORIZONTAL SITUATION DISPLAY - An electronically generated display on which navigation information and stored mission and procedural data can be presented. Radar information and television picture can also be displayed either as a map overlay or as a separate image. [1.1] See also **HEAD-UP DISPLAY**, **HORIZONTAL SITUATION INDICATOR**, **VERTICAL SITUATION DISPLAY**.

HORIZONTAL SITUATION INDICATOR (HSI) - An electronically generated display that provides a basic horizontal view of the aircraft's navigation picture. []
NOTE: In the F-15E, for example, HSI can provide navigation data to selected ground navigation facilities such as TACAN or Instrument Landing System (ILS), or to onboard navigation systems such as the Inertial Navigation System (INS).

HORN - An antenna consisting of a waveguide section in which the cross-sectional area increases toward an open end which is the aperture. [3]

HORN ANTENNA - A radiating element having the shape of a horn. [3]

HOST-BASED INTRUSION DETECTION - A type of **INTRUSION DETECTION** that examines computer operations data to detect **HACKERS**. [10:2853] Also called **COMPUTER-BASED INTRUSION DETECTION**. See also **ANOMALY DETECTION**, **NETWORK-BASED INTRUSION DETECTION**, **PORT SCAN**, **SIGNATURE DETECTION**.

HOSTILE ARTILLERY LOCATOR (HALO) - A system which will detect and locate all sources of high energy sound and provide rapid analysis and identification of artillery, guns, mortars and machine guns. It is accurate to 20 meters at range of 15 km; and can work at ranges of 30-40 km. [10:2732] **NOTE:** HALO processes signals from pre-positioned microphones to identify specific types of ordnance by the acoustic waves they make in flight. HALO can also identify and track engine sounds and even human footfalls. [10:2889]

HOT CHAFF - An infrared counter-measure employing small chaff elements which generate infrared radiation when exposed to air. When deployed, hot chaff generates a broad signature source which counters an infrared detector's decoy discrimination features. [] See also **INFRARED COUNTERMEASURES**.

HOVERING DECOY - See **NULKA**.

HUMAN FACTORS ECCM - A generic ECCM technique that covers the ability of an electronic warfare officer (EWO), a radar operator, a military vehicle operator, a commanding officer, and/or any other EW-associated personnel to recognize the various kinds of ECM, to decide what the appropriate ECCM should be, and/or to take the necessary ECCM action within the framework of this command structure. [8]

HUMAN FACTORS ECM - A generic ECM technique that covers the ability of an EW-related individual or supervisor to recognize the need for ECM, to decide what the appropriate ECM should be, and to take the necessary ECM action within the framework of the individual's command structure. [Patterned after the definition of HUMAN FACTORS ECCM from reference 8]

HumanID - A Defense Advanced Research Project Agency (DARPA) Total Information Awareness (TIA) program to develop automated BIOMETRIC identification technologies to detect, recognize and identify humans at great distances. [10:2969]

HUMAN INTELLIGENCE (HUMINT) - A category of intelligence derived from information collected and provided by human sources. [1.1] See also HUMAN RESOURCES INTELLIGENCE.

HUMAN RESOURCES INTELLIGENCE - The intelligence information derived from the intelligence collection discipline that uses human beings as both sources and collectors, and where the human being is the primary collection instrument. Sometimes called HUMINT. [1.1] See also HUMAN INTELLIGENCE.

HUMAN UNIVERSAL LOAD CARRIER (HULC) - A robotic exoskeleton designed to augment soldiers' strength and endurance while reducing load carriage injuries and exhaustion. HULC takes the weight off of a person and transfers it to the ground through the robotic legs of the lower-body exoskeleton. [10:3112]

HUMANE WEAPON - See NONLETHAL WEAPON (NLW)

HUMVEE LASER ORDNANCE NEUTRALIZATION SYSTEM (HLONS) - (1) A "Humvee" roof-mounted laser used to destroy unexploded explosive ordnance (EO). The laser beam can penetrate the metal casings of EO, or simply cut fuze wires to the ordnance. [10:3035] NOTE: HLONS, also called ZEUS-HLONS, works by focusing energy on the outer casing of the target, heating the munition until it is destroyed by internal combustion. The combustion created by the laser produces low-level detonations rather than activating the explosive power designed into landmines and UXO. An advantage to using a laser to neutralize munitions is its large magazine (it uses diesel fuel to create the laser beam), ultra precision, assured neutralization, safe stand off range for personnel, and controllable effects with reduced collateral damage. [Military.com]

HUNTER SENSOR SUITE (HSS) - A vehicular integrated, long-range target acquisition suite mounted on an extendible mast assembly platform, remotely controlled from an operator's station located inside the vehicle, e.g., HMMWV. HSS operates both on the move and stationary. The integrated sensor suite includes 2nd-generation THERMAL IMAGING, ACOUSTIC DETECTORS, day TV, Eyesafe

laser Ranging, Aided Target Recognition (ATR), high density integrated processing, color digital maps, image compression/transmission, GLOBAL POSITIONING SYSTEM (GPS), North-Seeking Module (NSM) and secure communications. [10:2801]

HUNTER STANDOFF KILLER TEAM (HSKT) - A command and control (C²) system to increase the Joint Maneuver Commander's situational awareness while decreasing decision and reaction timelines. [10:2915]

HYBRID CHANNELIZED/SUPERHETERODYNE RECEIVER ARCHITECTURE - A receiver system that uses multiple-channel channelizers to provide frequency video and to act as a pulse-by-pulse tuner for the associated narrowband superheterodyne receiver. A portion of each received signal is fed into the channelizer, with the remaining signal going straight into the superheterodyne after a delay of several hundred nanoseconds. Both receivers generate amplitude video, offering a higher probability of intercept with high levels of sensitivity and measurement accuracy. []

HYBRID INSECT MICROELECTROMECHANICAL SYSTEMS (HI-MEMS) - See INSECT CYBORG

HYBRID SPACE MINE - A variation of the SPACE MINE. The hybrid space mine is maintained in a "storage orbit" and is maneuvered to its target by command signals. A hybrid space mine's storage orbit may be such that it is covertly placed among drifting space debris until the time it is maneuvered to its target. [5.8]

HYBRID THREAT - A threat resulting from a mix of systems having differing national origins, such as a Soviet aircraft using a French IFF system. []

HYBRID ULTRA-LARGE AIRCRAFT (HULA) - A large aircraft sharing helium lift and aerodynamics (*e.g.*, a lift comprising 70% helium lift and 30% air flow dynamics from forward motion). [10:2994] NOTES: HULA features the following: (1) low RCS; (2) A benign failure mode (they deflate slowly and float to the surface); (3) Large capacity (*e.g.*, more than 500 tons of military men & equipment); (4) Ability to operate without ground crews or airports; (4) Long range capability (5,000 miles at 60-90 knots), cruising just over the surface and below 10,000 feet.

HYDROGEN FLUORIDE (HF) LASER - A CHEMICAL LASER which combines heated hydrogen (produced in a combustion chamber similar to the one in a rocket engine) with fluoride gas to produce excited hydrogen fluoride molecules. The light beam that results radiates on multiple lines between 2.7 μm and 2.9 μm . These wavelengths transmit poorly through the atmosphere. Even so, the BALLISTIC

MISSILE DEFENSE (BMD) organization is considering (1997) HF lasers for space-based defenses needing to propagate through only the upper atmosphere. [10:2607] See also DEUTERIUM FLUORIDE (DF) LASER.

HYDROMAGNETICS - The science that deals with an electrically conducting fluid, as a liquid metal or an ionized gas. [] Also called MAGNETOHYDRODYNAMICS. See also MEASUREMENT AND SIGNATURE INTELLIGENCE.

HYPERBOLIC METAMATERIAL WAVEGUIDE – A microchip made of ultrathin films of metal, semiconductors or insulators. It is capable of halting and absorbing different frequencies of light and placing them in a vertical arrangement, making it possible to capture and use the photons for a variety of purposes. [*SIGNAL*, April 2013, 11]]

HYPERENCRYPTION - The hiding of a message within a very large stream of data. [10:2906] NOTE: In the face of hyperencryption, a code-breaker would be unable to store the message-within-data for eventual decoding because the total amount would simply be overwhelming.

HYPERLINK -- (1) A pointer from a segment of text or from an image to a BOOKMARK or UNIVERSAL RESOURCE LOCATOR (URL), which may be located on the same page, another page or computer file in the web site in which the hyperlink exists, or to a file or bookmark in another web site on the World Wide Web. Hyperlinks allow the user to navigate between bookmarks on the same page, to other files on the same site (as most of the hyperlinks in this lexicon) or to bookmarks or files on other web sites (as in the hyperlinks to sound files under ELECTROMAGNETIC JAMMING). (2) A pointer within a HYPertext document which points (links) to another document, which may or may not also be a hypertext document. Also called ANCHOR. See also HYPertext MARKUP LANGUAGE (HTML). []

HYPERSONIC FLIGHT - Flight faster than Mach 5, or five times the speed of sound (about 3,300 miles per hour). [NASA]

HYPERSPECTRAL IMAGERY -- A process in which visual light is significantly enhanced by a computer processor, enabling the smallest changes in color variance of the water to be detected, thus improving the ability to detect submarines. [10:2656] The HYPERSPECTRAL (IMAGING) SENSOR is designed to provide a detailed analysis of the entire light spectrum from visible light up to FAR INFRARED. Current (1999) multispectral imaging sensors can break this range into a dozen or more sections for individual analysis. The hyperspectral imaging sensor can examine extremely narrow bands of this range, allowing the sensor to look for specific

chemical compositions that reflect light only in those very narrow bands. This provides a capability to "look" through dense foliage and detect, for example, camouflage paint. The image presented to the sensor's user would give a visual representation of that "hidden" source in the same manner as infrared or other displays. [10:2692] See also AIRBORNE TARGETING AND CROSS-CUEING SYSTEM (ATACCS), LITTORAL AIRBORNE SENSOR-HYPERSPECTRAL (LASH), HYPERSPECTRAL SENSOR.

HYPERSPECTRAL SENSOR - A reconnaissance sensor system used to quickly pinpoint objects that are undetectable to traditional ELECTRO-OPTIC (EO) equipment. The system divides the incoming optical radiation into hundreds of spectral bands and analyzes that information for specific signatures unique to a scene. The signatures are processed in a way that allows accurate detection of objects that are different from their backgrounds. [10:2590] Synonymous with HYPERSPECTRAL IMAGING SENSOR. See also PORTABLE HYPERSPECTRAL IMAGER FOR LOW LIGHT SPECTROSCOPY (PHILLS). NOTE: A HYPERSPECTRAL IMAGING SENSOR is a MULTISPECTRAL IMAGING SENSOR having more than 20 discrete spectral bands. [12]

HYPertext - A document, written in HYPertext MARKUP LANGUAGE (HTML), which contains HYPERLINKS to other documents, which may or may not also be hypertext documents. Hypertext documents are usually retrieved from the INTERNET, using the WORLD WIDE WEB (WWW). [10:2736]

HYPertext MARKUP LANGUAGE (HTML) -- A programming language used to build Web sites. It contains standard codes, or tags, that determine how a Web page looks when a browser displays it. HTML tags may be used to create headings, paragraphs, and lists. HTML tags also make possible the HYPERLINKs that connect information on the World Wide Web. [] See also DYNAMIC HYPertext MARKUP LANGUAGE, GENERALIZED MARKUP LANGUAGE, JAVA NOTE: In most browsers, you can see the underlying HTML code for the displayed page by selecting the Menu item "View", and then "Source".

HYPERVERLOCITY INTERCEPTOR - A KINETIC KILL VEHICLE that can reach speeds of more than 8,000 feet per second within fractions of a second after launch. [10:74]
