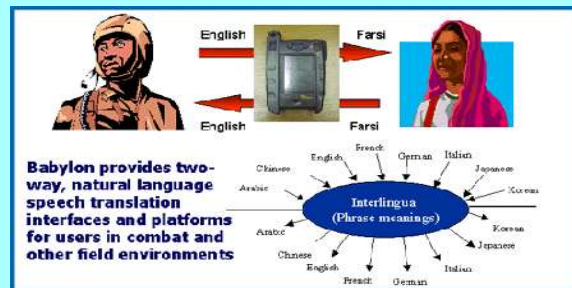


# B

*Researched and compiled by Joe Cyr (www.joe-cyr.com)*

**BABBLE JAMMING** - A communications jamming technique that superimposes previously recorded signals with existing signals. []

**BABYLON** - A Defense Advanced Research Project Agency (DARPA) Total Information Awareness (TIA) program to develop rapid, two-way, natural language speech translation interfaces and platforms for the warfighter for use in field environments for force protection, refugee processing, and medical triage. [10:2969] NOTE: (2002) Babylon will build and deploy palm-sized PDA devices (12 hour battery endurance) that will provide one-way speech translation for four target languages: Pashto, Dari, Arabic, and Mandarin.



## **BABYLON Concept**

**BACKBONE** - The top level in a hierarchical network. **STUB NETWORKS** and **TRANSIT NETWORKS** which connect to the same backbone are guaranteed to be interconnected. [10:2736]

**BACK DOOR** - A "hole" in the security of a system which was deliberately left in place by designers or maintenance personnel, thus allowing privileged access by these people. [] Synonymous with **TRAP DOOR** and **WORMHOLE**. NOTE: A **BACK DOOR**, of course, is a vulnerability subject to discovery by **HACKERS** and **CRACKERS** with danger of exploitation by the latter.

**BACK-DOOR COUPLING** - Any technique used to access the target system by media other than the one for which the system was designed. [10:46] Contrast with **FRONT-DOOR COUPLING**. See also **BACK-DOOR SYSTEM PENETRATION**.

**BACK-DOOR SYSTEM PENETRATION** - A **DIRECTED ENERGY WEAPON** term to indicate energy entering a target system through its apertures and enclosure seams. Back door penetration is most effective at the resonant frequency of the

enclosure opening. [10:16] Contrast with FRONT-DOOR SYSTEM PENETRATION. See also BACK- DOOR COUPLING.

BACKGROUND MATCHING - Blending an object into its background. [10:89] See also ELECTRO-OPTIC PAINTING, RADAR CAMOUFLAGE, YEHUDI.

BACKLIGHT - In LIQUID CRYSTAL DISPLAYs (LCDs), a lamp positioned behind a transmissive liquid LCD designed for direct viewing, as is the case for virtually all laptop-computer displays. The PIXELs of the LCD have varying degrees of opacity, which controls how much light from the backlight reaches the viewer from each point on the screen. [10:2600] Contrast with FRONTLIGHT.

BACK LOBE - A radiation SIDE LOBE whose axis makes an angle of approximately 180 degrees with respect to the axis of the MAJOR LOBE of an antenna. [3]

BACKSCATTER - Energy reflected in a direction opposite to that of the INCIDENT WAVE. Compare with RETROREFLECTION. Contrast with FORWARD SCATTERING. See also SCATTERING, RADAR SCATTERING. [3]

BACKSCATTERING - Radio wave propagation in which the direction of the incident and scattered WAVES, resolved along a referenced direction (usually horizontal), are oppositely directed. A signal received by backscattering is often referred to as BACKSCATTER. [1.1] See also SCATTERING, RADAR SCATTERING.

BACKSCATTER RADAR (BSR) - A RADAR that detects BACKSCATTER.

BACKSCATTER SOUNDER (BSS) - A RADAR that measures the characteristics of the ionosphere at the point where refraction of the radar waves occurs. [10:2778]

BACKTRACKING - See WEAPON BACKTRACKING.

BACK TELLING - Transferring information from a higher to a lower echelon of command. [1.1] See also CROSS TELLING, FORWARD TELLING, OVERLAP TELLING, RELATERAL TELLING, TRACK TELLING.

BAGPIPES - A communications jamming technique consisting of repeated multiple tones. [] HEAR the sound of bagpipes.

BALACLAVA - A head concealment (hood and face cover), usually for urban snipers, which can be coated with Kevlar, NOMEX®, or polypropylene for protection against knife cuts and/or fire. [] Also called NINJA MASK or NOMEX® HOOD. See also DRAG BAG, SNIPER FACE VEIL, GHILLIE SUIT.

BALANCED TECHNOLOGY INITIATIVE (BTI) - A program created by Congress to accelerate focused research into innovative ways to maintain conventional defensive capabilities. [10:67]

BALLISTIC MISSILE DEFENSE (BMD) - A missile defense program shared among the nation's military services and some allies, mainly the United Kingdom and Israel. The concept is a layered approach: Boost-phase defenses, *e.g.*, AIRBORNE LASER; Upper-tier (area) defenses, *e.g.*, THEATER HIGH-ALTITUDE AERIAL DEFENSE (Thaad); and Lower-tier (point) defenses, *e.g.*, Patriot. [10:2606]

BALLISTIC MISSILE DEFENSE COUNTERMEASURES (BMDCM) - Actions taken to alter ballistic missile characteristics with tactics or devices intended to hinder or prevent ballistic missile defense systems from identifying or hitting the incoming missiles. These include EVASIVE MANEUVERS BMD COUNTERMEASURES, FALSE-TARGET BMD COUNTERMEASURES, SHROUDING BMD COUNTERMEASURES, SUBMUNITION BMD COUNTERMEASURES, TRAJECTORY BMD COUNTERMEASURES. [10:2609]

BALLOON REFLECTOR - A balloon supported CONFUSION REFLECTOR to produce fraudulent ECHOES. [1.1]

BALLUTE - Acronym for Balloon + Parachute. Ballutes are deployed from the tail section of certain bombs to permit the launching aircraft to achieve a safe separation before the bomb (*e.g.*, cluster bomb) detonates. []

BALUN - (BALanced to UNbalanced transformer) A passive device having distributed electrical constants used to couple a balance system or device to an unbalanced system or device. []

BAND PASS (BANDPASS) - The number of cycles per second [Hertz] expressing the difference between the limiting frequencies at which the desired fraction (usually half-power) of the maximal output is obtained. [1.1] See also BANDWIDTH.

BANDPASS FILTER (BAND PASS FILTER) - (1) A WAVE FILTER with a single transmission band, neither of the cutoff frequencies being zero or infinity. [3] (2) A FILTER that allows a select range of frequencies to pass while attenuating all frequencies outside the range. [10:45]

BAND STOP FILTER - See FILTER.

BANDWIDTH - The range of frequencies within which performance, with respect to some characteristic, falls within specific limits. [3]

**BANDWIDTH EXPANSION** - An ECCM technique that enhances a DOPPLER RADAR's ability to quickly reacquire a signal after it is lost through VELOCITY GATE WALK OFF jamming. []

**BAR CODE** - A printed code consisting of a series of dark and light bars organized, according to specific rules, into various patterns which represent letters, numerals, and other symbols. [] NOTE: Information conveyed by a bar code is due to the numbers of bars, their spacing, and relative widths of both the bars and spacing between bars.

**BARRAGE JAMMING** - (1) Simultaneous electronic jamming over a broad band of frequencies. [1:1] (2) Noise jamming spread in frequency to deny the use of multiple radar frequencies to effectively deny range information. [4:1] See also BROADBAND CHAFF, CLICK JAMMING, ELECTRONIC JAMMING.

**BARRAGE ROUND** - A naval gun round encased by sabots which fall away from the shell as it leaves the muzzle of the gun, thus achieving longer range (*e.g.*, 40 nautical miles from a 5-inch gun). [10:2930] See also ADVANCED GUN SYSTEM (AGS), AUTONOMOUS NAVAL SUPPORT ROUND. NOTE: When a barrage round explodes, it dispenses a large number of small metal arrows.

**BARREL-LAUNCHED ADAPTIVE MUNITION (BLAM)** - A self-correcting bullet containing a PIEZOELECTRIC ceramic actuator that tilts the round's nose to correct for wind drift and provide sufficient lift to compensate for gravity's pull. [10:2614] Also called SMART BULLET. NOTE: A BLAM round can provide a doubling of range and a 15-fold increase in accuracy.

**BASILAGE** - The marking of a route by a system of dim beacon lights enabling vehicles to be driven at near day-time speed, under blackout conditions. [1:1]

**BATCH FILE** - A computer program consisting of an ASCII text file containing several DOS commands. When the file is run, each line (DOS command) is executed serially. [10:45] See also DOS.

**BATTLE DAMAGE ASSESSMENT (BDA)** - A determination, using both active and passive sensors, as to whether a target was destroyed. [] See also ELECTRONIC WARFARE EFFECTIVENESS ASSESSMENT.

**BATTLE SPACE** - (1) (AAW) Airspace in which enemy aircraft and airborne weapons can be detected, targeted, engaged and destroyed. [10:5] (2) (General - Joint) The multi-dimensional space (*e.g.*, air, land surface, sea, subsurface, space) in which military operations are conducted. Also written as BATTLESPACE. []

**BATTLECUBE** - A COPERNICUS term. The battlecube is a conceptual, multi-dimensional area [sic] that includes subsurface, surface, air and space as the environment for conducting warfare. [10:2698]

**BATTLEFIELD COMBAT IDENTIFICATION SYSTEM (BCIS)** - An all-weather, digitally encrypted question/answer system used as a "friend or foe" system. BCIS includes an interrogator mode and a transponder mode. In the interrogator mode, the device sends an encrypted signal to a targeted vehicle to verify its "friend or foe" status. If the targeted vehicle is equipped with BCIS, the transponder will automatically reply with a coded signal identifying it as a "friend." [10:2549] See also IDENTIFICATION FRIEND OR FOE.



**BATTLEFIELD UNIVERSAL GATEWAY EQUIPMENT (BUG-E)** - Equipment used to link dissimilar networks so that they can share data. [10:3004] NOTE: For example, (2003) an F-16 equipped with Link 16 and an A-10 close support aircraft using the Situational Awareness Datalink (SADL) cannot normally share information. BUG-E can connect both aircraft, so that close air support will be able to access the location of Army units on the battlefield.

**BATTLESPACE PREPARATION AUTONOMOUS UNDERWATER VEHICLE (BPAUV)** – An AUTONOMOUS UNDERWATER VEHICLE (AUV) designed to travel a pre-set course loaded into its program. The ship-crane launched BPAUV is equipped with a side scan sonar, and is able to detect and classify mine-like contacts ahead of the controlling ship. The ten-foot long 21 inches wide BPAUV weighs 800 pounds (1,000 wet). It is powered by lithium polymer batteries, and has an operational speed of 3 knots. [10:2996] NOTE: The BPAUV is intended (2003) to reduce the

vulnerability to critical mine countermeasure ships and help shorten the tactical time-line associated with surface mine-hunting.

**BAUD** - A unit of measure for data transmission speed. It represents the number of signal elements (typically bits) transmitted per second. [10:45] Named after the French engineer and telegrapher, Maurice-Emile Baudot, a baud is unit of signaling speed equal to the number of discrete conditions or signal events per second. [10:2580] NOTE: "baud" and "bits per second (bps)" are not synonymous. Typical earlier baud rates are 300, 1200, 2400, 4800, 9600, and 19200.

**BAYESIAN NETWORK CLASSIFIER (BNC)** - An ARTIFICIAL INTELLIGENCE submarine ID/classification system which uses FUZZY LOGIC to identify and classify various threat families of submarines. []

**BEACH-ZONE ARRAY (BZA)** - An explosive neutralization system used to clear a beach of mines. [10:2691] See also LINE CHARGE (LC), SURF-ZONE ARRAY (SZA)

**BEACONING EFFECT** - The extending of the surveillance range of a radar due to a target's premature employment of JAMMING. [10:2]

**BEAM-AWAY SHOT** -- A missile launch at a target from the side opposite to that toward which the target is turning. [] Contrast With BEAM-TOWARDS SHOT, HEAD SHOT, TAIL SHOT.

**BEAM DIAMETER** - The distance between two diametrically opposed points at which the irradiance is a specified fraction of the beam's peak irradiance; most commonly applied to beams that are circular or nearly circular in cross section. [3] Synonymous with BEAMWIDTH.

**BEAM-PLASMA DEVICE** - A broadband high-powered microwave generator that employs the interaction of relativistic electrons and plasma. See also FREE-ELECTRON LASER; GYROTRON; VIRTUAL-CATHODE OSCILLATOR. [10:16] NOTE: Beam-plasma devices have potential for use as DIRECTED ENERGY WEAPONS.

**BEAM SQUINT** - A phenomenon where the MAIN LOBE of a radiation pattern moves away from the desired angle with changes in operating frequency. [10:2556] NOTE: BEAM SQUINT limits the array's instantaneous bandwidth and (in 1994) precludes the use of phased arrays in wide band applications such as target-ID radar and spread-spectrum communication systems.

**BEAM-TO-BEAM CORRELATION** - An ECCM technique used with phase or frequency scan radars employing multiple overlapping beams. Signals that do not correlate with those on adjacent beams are rejected by the radar. []

**BEAM-TOWARDS SHOT** -- A missile launch at a target from the side toward which the target is turning. [] Contrast with **BEAM-AWAY SHOT**, **HEAD SHOT**, **TAIL SHOT**.

**BEAMWIDTH (BEAM WIDTH)** - The angle between the directions, on either side of the axis, at which the intensity of the radio frequency field drops to one-half the value it has on the axis. [1.1] Synonymous with half-power beam width. See also **BEAM DIAMETER**.

**BEAN BAG BATON** - A **NONLETHAL WEAPON** consisting of an aluminum baton which utilizes an air cartridge to fire a bean bag filled with lead shot at 300 ft/sec. [10:2745]

**BEARING RESOLUTION** - (1) The ability of the radar equipment to separate two reflecting objects at identical ranges, but at different bearings (azimuths) from the antenna. (2) The ability to distinguish between two targets solely by the measurement of their bearings (azimuths from the radar); usually expressed in terms of the minimum angle by which two targets of equal strength at the same range and elevation angles must be spaced to be separately indistinguishable. [] See also **RANGE RESOLUTION**, **RESOLUTION**, **TARGET DISCRIMINATION**.

**BEEPS AND SQUEAKS** - A tongue-in-cheek reference to **ELECTRONIC WARFARE**. []

**BEHAVIORAL BIOMETRICS** - **BIOMETRICS** which include voiceprints, handwritten signatures and key stroke/signature dynamics. [10:2622]

**BENT-PIPE COMMUNICATIONS** - Communications via earth-to-space-to-earth relay. []

**BICONICAL ANTENNA** - An antenna consisting of two cones, positioned tip to tip, and fed at the apex. [10:2571]

**BIFRINGENT FILTER** - An optical filter, used in **TUNABLE LASERS**, that consists of several plates of optical material that exhibits double refraction, or birefringence. The frequency of the outgoing laser beam is determined by the angle of the incoming beam with respect to the optical axis of the filter. [10:83]

**BIG BEE PROJECT** - An Advanced Research Projects Agency (ARPA) project (*ca* 2000) examining the feasibility of employing bees to detect explosives, nerve gas, pesticides and land mines. One concept entails the marking of bees with TNT detecting bacteria. If the marked bee flies in the vicinity of TNT, the bacteria will react by assuming a glow which is detectable when the bee returns to its hive. Other especially-trained bees, marked with RF tags, can then be used to fly and remain at the site, thus marking the location of the TNT and allowing for its disposal. [10:2877]

**BIGDOG** - A quadrupedal, or four-legged, robot ("packbot") developed to run and scramble, as opposed to carefully placing steps in a structured gait. The robot resembles a headless, tailless dog, except that the front "knees" bend in the direction opposite from the "back" knees. BigDog is intended to carry up to 100 pounds of equipment and supplies and to be able to follow soldiers in terrain where vehicles cannot operate. [10:3076]

**BINARY-PHASE-CODED CONTINUOUS-WAVE RADAR - A LOW PROBABILITY-OF-INTERCEPT (LPI) RADAR** which has a PSEUDORANDOM phase-coded MODULATION on a transmitted CONTINUOUS-WAVE (CW) SIGNAL. [10:2859]

**BIOLUMINESCENT BIOREPORTER INTEGRATED CIRCUIT** - A photodetector microchip which employs genetically-engineered bacteria that will glow blue-green in the presence of contaminants such as ammonia, cadmium, or any of a host of other chemicals to detect dangerous chemical fumes. [10:3038]

**BIOMATERIALS** - That category of MATERIALS TECHNOLOGY which addresses materials that function in biological application (e.g., medical implants) or are derived through biological types of processes (*e.g.*, spider silk). [12]

**BIOMETRIC DEVICE** - A device which identifies people through unique body characteristics. [] NOTE: Biometric devices include those which can identify hand-geometry, fingerprints, retinal patterns, signatures, and voice-prints.

**BIOMETRICS** - The automatic identification of a person based on his/her physiological or behavioral characteristics. Refer to the table below for a list of biometric technologies. Biometrics fall into two categories: PHYSIOLOGICAL BIOMETRICS and BEHAVIORAL BIOMETRICS. [10:2622] NOTE: (1) The person to be identified is required to be physically present at the point-of-identification.



<b><i>BIOMETRIC TECHNOLOGIES</i></b>
Dynamic Signature Verification (DSV)
Face Geometry
Finger Scan
Hand Geometry
Iris Scan
Keystroke Dynamics
Speaker Verification
Retina Scan (Iris Scan)

**BIOMETRICS IN SUPPORT OF PERSONNEL IDENTITY (BSPI)** - The collection of Iris Scan, Finger Prints, Facial Recognition, and Palm Print. etc. data (by the National Geospatial-Intelligence Agency) for processing and sharing with various agencies such as Border Patrol, Special Operations Forces, Humanitarian Relief, Maritime Interdiction, and Homeland Security. [10:3100]

**BIOMIMETICS** - Techniques to develop novel synthetic materials, processes and sensors through advanced understanding and exploitation of design principles found in nature. [10:2592] NOTE: An example includes genetically engineered high-strength silk fibers. These fibers, which are about 5 microns in diameter, are 100-percent tougher than Kevlar aramid fibers. See also NANOSCIENCE

**BIOMIMICRY** - The examination of nature, its models, systems, processes, and elements to emulate or take inspiration from in order to solve human problems. [Wikipedia 2011] NOTE: The term "biomimicry" and "biomimetics" (see above) come from the Greek words *bios*, meaning "life," and *mimesis*, meaning "to imitate." Other terms often used are BIONICS, BIOMIMETICS, BIO-INSPIRATION, and BIOGNOSIS.

**BIO-OPTIC SYNTHETIC SYSTEM (BOSS)** - An optical system which is biologically-inspired, such as a lens with a dynamically controllable field of view (emulating, for example, the crystalline fisheye lens which is remarkably compact and possesses a varying index of refraction for a wide field of view and control of spherical aberration.) [10:2955]

**BIORADAR** - A RADAR device which helps in searches for buried persons. It can measure heart frequency and breathing up to 3 meters under snow and rubble. It can also detect persons in buildings from the outside, even through stone walls up to 6 meters thick. []

**BIO-SURVEILLANCE** - A Defense Advanced Research Project Agency (DARPA) Total Information Awareness (TIA) program to develop the information technologies and resulting prototype capable of automatically detecting covert releases of biological pathogens. [10:2969]

**BIRDNESTING** - A term describing poor chaff dispersal caused by adhesion between DIPOLES and entanglement due to lack of stiffness. [10:68] Contrast with JACKSTRAWING.

**BISTATIC CLUTTER JAMMING** - A jamming technique that exploits GROUND CLUTTER in the vicinity of the victim radar. High power, generally CONTINUOUS WAVE, generated by the jammer is reflected from multiple points and enters the radar receiver through its antenna SIDE LOBES and BACK LOBE. [10:22]

**BISTATIC INTERCEPT** - An intercept technique by which electromagnetic radiation is unintentionally reflected by objects such as missiles in flight, or even the moon, and received by an ELINT receiver. [10:2718]

**BISTATIC RADAR** - A radar using antennas at different locations for transmission and reception. [3] Contrast with MONOSTATIC RADAR. See also RELOCATABLE OVER-THE-HORIZON RADAR, SPACE TO AIR BISTATIC RADAR.

**BISTATIC RADAR ESM** - A technique involving the use of an ESM receiver to exploit transmitters of opportunity - both friendly and hostile - for detecting targets. []

**BISTATIC RADAR INTELLIGENCE GENERATION AND ANALYSIS DEVELOPMENT (BRIGAND)** - Forerunner of an ECM technique involving the "stealing" of a victim radar's picture, so that the ECM operator is able to replicate the victim radar's display in REAL TIME. []

**BIT** - A contraction of the term "binary digit;" a unit of information represented by either "0" or "1". [3] See also BYTE, DIBIT.

**BLACKBERRY** - A hand-held device with features of cell-phone, instant e-mail, and one-button walkie-talkie. [] NOTE: Following September 11, 2001, members of the U.S.

Congress and some top aides were given Blackberry devices, allowing them to receive immediate, confidential information about security threats and evacuation plans.

**BLACK CHAFF** - See **ABSORPTIVE CHAFF**.

**BLACK-HAT HACKER** - A **HACKER** who, for illegal purposes, exploits publicly-exposed (*i.e.*, on the Internet) software security flaws posted by **GRAY-HAT HACKERS**. [] See also **HONEYPOT**.

**BLACK LAYER TECHNOLOGY** - The use of optical interference using a thin-film structure in display devices to provide contrast in sunlight and a night vision capability, resulting in usability from full sunlight to total darkness. [10:2709]

**BLACK NETWORK** - A **PACKET-SWITCHED NETWORK** that carries both the data secured by **BLACKER FRONT ENDS (BFEs)** and any other unsecured data. [Nortel Networks Technical Documentation Web Site: <http://support.baynetworks.com/library/tpubs/docsrt.htm> 11/2000] Contrast with **RED VIRTUAL NETWORK**.

**BLACK PROGRAM** - A highly classified weapon system acquisition program, generally requiring special security clearances and facilities for contractors and others involved with the program. []

**BLACKBOARD** - A component of an **EXPERT SYSTEM**. The blackboard records intermediate hypotheses and decisions (*i.e.*, plans, agenda, and solution elements) that the expert system manipulates. [] **NOTE**: An expert system containing a blackboard is sometimes called a **BLACKBOARD SYSTEM**.

**BLACKER FRONT END** - A classified encryption device used to communicate across unsecured wide area networks (WANs). [Nortel Networks Technical Documentation Web Site: <http://support.baynetworks.com/library/tpubs/docsrt.htm> 11/2000] See also **RED VIRTUAL NETWORK**.

**BLADE COMPUTER** - A compact, slim computer (hence the name "BLADE") grouped side-by-side in an enclosure, like books on a shelf. Blades have few physical cable connections and are equipped with individual management programs, allowing ease of installation, configuration and reconfiguration (*ca* 2004). [10:3048]

**BLANKET SHIELD** - A set of **DECOY** devices designed to deny all detailed information about an incoming force. [4:23] See also **CHAFF CORRIDOR**, **ELECTROMAGNETIC OBSCURANT**.

**BLANKING** - A generic ECCM technique that blanks out part of a jammed radar's received signal on the basis of time, phase, frequency, or direction in order to decrease jammer effectiveness. [8]

**BLINDING LASER** - A NONLETHAL WARFARE weapon consisting of a laser intended to overload, destroy or degrade optics or target-acquisition electronics from the air, sea or land. [10:2648] See also ANTI-AIR LASER.

**BLIND SOURCE SEPARATION (BSS)** - An algorithmic method of singling out useful signals from a mix of incoming Internet traffic. [10:2758]

**BLINKING - NARROWBAND JAMMING** by two sources in the same angular cell of the victim radar. The jamming is alternated between sources causing the radar system to oscillate (between targets). Too high a blinking frequency can allow the tracker to average the data while too low a frequency will cause the missile to home in on one of the jammers. [4:1]

**BLIP** - The display of a received pulse on a CATHODE RAY TUBE. [1.1]

**BLIP ENHANCEMENT** - The augmentation of a radar signal. (1) An ECM technique to make a small target appear much larger to the victim radar. [] (2) An ECCM technique to enhance real targets in the presence of JAMMING or CLUTTER. []

**BLUE** - A term used to indicate friendly. For example, BLUE FORCES, blue systems, BLUE-ON-BLUE. [] Contrast with GRAY, ORANGE FORCES, PURPLE FORCES, RED FORCES.

**BLUE FORCE TRACKING (BFT)** - A technology (*ca* 2003) which allows automatic plotting of the position of friendly forces on a computer display. [10:3034] NOTE: For example, if equipped with BFT, a soldier navigating the battlefield in a tank can see displayed which of the contacts it holds are friendly.

**BLUE FORCES** - Those forces used in a friendly role during NATO exercises. [1.1]

**BLUE-ON-BLUE** - Friendly forces engaging other friendly forces. []

**BLUE SCREEN OF DEATH** - On a computer display, a blue screen, sometimes displaying computer code, which appears when the operating system crashes and must be rebooted. []

**BLUETOOTH™** - A standard for wireless connections among Personal Computers (PCs), mobile phones, Personal Digital Assistants (PDAs), and Personal Area Network (PAN) devices at relatively low data rates over short distances using very

little power. [10:2793] See also GRAYTOOTH. NOTES: (1) Bluetooth™, named after a 10th century Viking king., deals with devices using Frequency Hopping Spread Spectrum (FHSS) in the 2.4 GHz band. It's range is limited to about 10 meters. (2) [ca 2005] The use of Bluetooth™ to link various pieces of equipment around the body of a soldier is being explored. Issues such as eavesdropping, jamming, electromagnetic radiation around the body and adverse environments must be addressed.

BLUNT IMPACT MUNITIONS - NONLETHAL WEAPON munitions consisting of rubber balls, rubber pellets, finned rubber projectiles, bean bags, shot bags (e.g., SOFT RAGS, STINGBAGS), etc. which are fired at low velocity, with a range of 10-50 meters. [10:2745]

BODY BLIND - See GHILLIE SUIT.

BODY VEIL - See GHILLIE SUIT.

BOGEY WHEEL - One of a number of modern tank-tread double-wheels; bogey wheels put traction weight on the tank's tracks. [] NOTE: On a modern tank, beginning from the rear, the drive wheel is connected to the cross-drive transmission. The next five (double) wheels put traction weight on the tank's track -- these are called *Bogey Wheels*. The front-most wheel is the idler wheel, which maintains the tank track's tension, going in and out as the tank goes over objects. [Thanks to former tank-battalion commander, COL Dick Meyer, USA (Ret) for this insight]

BOL - A Swedish CHAFF countermeasures dispenser for aircraft self-protection. An electromechanical drive mechanism feeds the payload packs towards the rear of the dispenser, where one pack at a time is released into the air stream, creating a large chaff cloud in a very short time. BOL can carry IR (e.g., HOT CHAFF) or RF chaff, and boasts a high capacity payload (e.g., 160 packs per dispenser), giving pilots a sustained defensive capability. []

BOLO - A NONLETHAL WEAPON consisting of a shotgun round holding three rubber projectiles connected by 5.5 foot high-strength cords. The bolo is designed for use against fleeing target individuals, where a target hit by any of the balls will cause the other balls to wrap the cord around the legs of the individual. []

BONDING - In electrical engineering, the process of connecting together metal parts so that they make low resistance electrical contact for direct current and lower frequency alternating currents. [1.1] See also EARTHING, GROUNDING.

BOOST GLIDE VEHICLE (BGV) - A hypersonic maneuverable aircraft-type weapon delivery system. Launched from an aircraft, the boost glide vehicle rapidly boosts ballistically through rocket assistance to the exoatmosphere, where it porpoises

along the top of the atmosphere, gliding to the target area. Upon reaching the target area, it dives, maneuvering as needed to home on the target. [10:17] NOTE: The boost glide vehicle is guided by a combination of remote control and terminal homing. Consequently, it is effective against maneuvering targets.

**BORESIGHT** - (1) The physical direction of the main lobe of an antenna array. (2) To align a directional antenna, using either an optical procedure or a fixed target at a known location. []

**BOT** - A word derived from "robot", signifying a software program designed to independently carry out tasks in unknown networked environments; a more limited AGENT. [10:2595] See also SPIDER.

**BOUNCE JAMMING** - The use of large flat objects or smooth earth features, such as ice, to act as reflectors for reradiating jamming signals into victim radars. [10:37] Synonymous with TERRAIN BOUNCE.

**BOUNDING NON-LETHAL MUNITION (BNLM)** - A NONLETHAL WEAPON tactical area denial munition for site security and perimeter defense. The payloads produce an audible alert signal to friendly forces within a range of 200 meters. [10:2857]

**BOUQUET MINE** - One of several in a "bouquet" of mines attached to a common sunken mooring site. When one mine is activated or released from its tether, then it is replaced by another liberated (and tethered) from the anchored site. []

**BOW-TIE ANTENNA** - A type of BICONICAL ANTENNA in which the cones are collapsed into two-dimensional triangular dipoles. [10:2571]

**BRAGG CELL** - A thin slab of transparent crystal (such as tellurium oxide) with one or more piezoelectric transducers attached. A microwave signal excites the transducer to create a sound wave in the crystal at the microwave's frequency. The PIEZOELECTRIC EFFECT generated by the sound wave changes the crystal's optical index of refraction, also at the microwave frequency. These changes in the optical index diffract a portion of the incident light beam so that two beams emerge from the crystal - an un-diffracted beam exiting at the angle of entry, and a diffracted beam exiting at an angle proportional the frequency of the sound wave. [10:29\*] See also ACOUSTO-OPTICS.

**BRAIN-COMPUTER INTERFACE (BCI)** - A system which allows the user to interact with a VIRTUAL-REALITY environment using brain waves. []

**BREAK LOCK** - In a **TERMINAL DEFENSE** situation: The condition where a homing sensor or fuze loses the target which it has had a lock-on. If so configured, the sensor will revert to a search mode to regain a lock-on its target. [] Contrast with **BREAK TRACK**.

**BREAK TRACK** - In a situation other than **TERMINAL DEFENSE**: The condition where a tracking or acquisition sensor loses the target which it has been tracking. If so configured, the sensor will revert to a search mode to re-locate its target. [] Contrast with **BREAK LOCK**.

**BREATHABLE BANDWIDTH** - The dynamic allocation of bandwidth to accommodate voice, video, local, and wide area network traffic streams. [10:2626]

**BRIGADE SUBSCRIBER NODE (BSN)** - A ground communications system intended to complement the Mobile Subscriber Equipment (MSE). It consists of two high mobility multipurpose wheeled vehicles and a towed generator. One vehicle houses switches and routers in a shelter on its back, while the second transports the antenna array. [10:2846]

**BRILLIANT AMMUNITION** - A generic classification of munitions. Brilliant ammunition is autonomous; it is able to recognize (distinguish target type - tank, truck,...) and classify (target class - M-60, T-1,...) its own target. [10:19] Contrast with **DUMB AMMUNITION**, **SMART AMMUNITION**. See also **BRILLIANT MUNITION**, **BRILLIANT ANTIARMOR MUNITION (BAT)**.

**BRILLIANT ANTIARMOR MUNITION (BAT)** - A weapon which, when released, deploys four wraparound tail fins and four straight cruciform gliding wings near mid-body. The nose of the BAT contains an **INFRARED (IR)** sensor and the wingtips contain acoustic sensors. After deployment, the BAT glides to a preprogrammed target location with other BATs (in a manner to ensure that they do not attack the same targets). The BAT uses its acoustic sensors to identify the general location of an armored vehicle after which the IR sensor takes over to direct the BAT to hit the target directly from the top, destroying it with a two-stage penetrating warhead. [10:2927] See also **HARD TARGET SMART FUZE (HTSF)**

**BRILLIANT MUNITION** - A many-on-many munition that operates autonomously to search for, detect, identify, acquire, and attack specific classes of targets. The sensor on each munition acquires and attacks one among the class of targets, so that in a battlefield situation two munitions may attack the same target leaving others inviolate. [12] Contrast with **GUIDED MUNITION** and **SMART MUNITION**. See also **BRILLIANT ANTIARMOR MUNITION (BAT)**, **SENTIENT MUNITION**.

**BRILLIANT PEBBLES** - Space-based interceptors with built-in sensors and navigation systems for intercepting ballistic missiles before they can deploy warheads and DECOYs. [10:35]

**BROACH WARHEAD** - A bomb entailing two conjoined conventional warheads. An "augmenting charge" detonates first, cleaving the target with a high speed plasma jet, after which a "Follow Through Bomb" penetrates and detonates inside the target structure. []

**BROACHING UNIVERSAL BUOYANT LAUNCHER (BUBL)** - A universal weapon encapsulation launcher that permits any payload - including present and future missile and unmanned aerial vehicles (UAVs) - to be deployed from any submarine under any operating conditions. [10:2990]

**BROADBAND CHAFF** - CHAFF consisting of DIPOLES cut to various wavelengths. [] See also BARRAGE JAMMING.

**BROADBAND JAMMING** - See BARRAGE JAMMING

**BROADBAND METROPOLITAN AREA NETWORK (BMAN)** - A NETWORK consisting of a high-BANDWIDTH fiber-optic ring encircling a city. [10:2821]

**BROADBAND MICROSTRIP ANTENNA** - A MICROSTRIP ANTENNA that combines the broadband performance typical of spiral and sinuous antennas with the surface mount capabilities, efficiency and low cost of microstrip antennas. [10:114]

**BROADBAND MICROWAVE ABSORPTION** - A decrease in reflection of microwaves, caused by coatings of material whose electrical and magnetic properties have been altered to allow ABSORPTION of microwave energy at multiple frequencies. [4:17] Contrast with RESONANT MICROWAVE ABSORPTION.

**BROADBAND NOISE** - In acoustics, the noise generally produced by a ship's motion through the water and the cavitations of its propeller across a wide BANDWIDTH usually in the lower- frequency spectrum. [10:126\*] Contrast with NARROWBAND NOISE. NOTE: Generally, broadband noise provides longer-range detection opportunities than narrowband noise, but is less useful for identification.

**BROWSER** - A short term for WEB BROWSER.

**BRUTE FORCE JAMMING** - A collective term which applies to three following types of noise jamming: BARRAGE JAMMING, NARROWBAND JAMMING, and SWEPT NOISE JAMMING. [10:2]



**BUBBLE FUSION** - See SONOFUSION

**BUBBLE MEMORY** - A solid-state NON-VOLATILE RAM device. Bubble memories store data in the form of cylindrical magnetic domains, or bubbles, in a thin film of magnetic material on base, such as a garnet wafer. Bubbles are created from electrical signals by a bubble generator within the memory and reconverted to electrical signals by an internal detector. Unlike other non-volatile magnetic media forms, the memory domain does not wear out. [10:8] NOTE: Bubble memories possess the following desirable characteristics: (1) Wide operating temperatures; (2) resistance to mechanical shock and vibration; (3) data retention and reliability; (4) immunity to strong magnetic fields and electrostatic discharge; (5) inherent radiation hardness; (6) immunity to dust and chemical pollutants; and (7) secure instant erasure with a single write-over operation. [10:82]

**BUCKMINSTERFULLERENES** - A class of materials that stems from the production of substantial quantities of Carbon 60, and used in the design of devices at the molecular level (nanostructures that bring engineering towards the atomic level). [10:2386] See also BUCKY TUBE, DENDRIMERS, FULLERENE, MOLECULAR ELECTRONICS, NANOWIRE, QUANTUM DOTS.

**BUCKY BALL** - See FULLERENE.

**BUCKY TUBE** - (1) A carbon "wire" of molecular diameter designed to connect molecular components, such as ROTAXANES. Bucky tubes possess structural rigidity and demonstrate remarkably consistent electrical behavior. In fact, they exhibit essentially metallic behavior and conduct via well-separated electronic states, remaining coherent over the distances needed to interconnect various molecular computer components. [10:2700] (2) Chicken-wire-like tubes of carbon that can act either as semiconductors or as metals. [10:3058] Also called QUANTUM WIRE or CARBON NANOTUBE. See also BUCKMINSTERFULLERENES, DENDRIMERS, FULLERENE, MOLECULAR ELECTRONICS, NANOWIRE, QUANTUM DOTS. NOTE: Bucky tubes have 10 to 100 times the strength of steel at a fraction of the weight.

**BUFFER MANAGEMENT** - See CRITICAL CHAIN SCHEDULING (CCS).

**BUOY CAMERA SYSTEM (BCS)** - A submarine-launchable device to allow submerged submarines the capability to remotely view the surface while remaining at depth or located some distance from the device. The BCS uses a remotely controlled optical sensor that operates just above the sea surface to acquire optical image data available at the surface. These data are then transmitted through a secure link to a moving submarine not necessarily in the same vicinity. [10:69]

**BURN-IN** - The operation of equipment or components prior to their ultimate application; intended to stabilize their characteristics and to identify early failures. []

**BURN-OUT** - Destruction of the junctions of a transistor due to extremely large currents caused by LATCH-UP. [10:2620]

**BURN-THROUGH** - The point at which the target SKIN ECHO becomes stronger than the received jamming/interference signal. See also BURN-THROUGH RANGE, CROSSOVER, JAM-TO-SIGNAL RATIO. []

**BURN-THROUGH RANGE** - (1) The distance at which a specific radar can discern targets through the external interference being received. See also BURN-THROUGH. [1.1] (2) The range where the energy received from a noise jammer is no longer great enough to hide the SKIN ECHO. [4:7]

**BURN TIME** - For a FLARE: The length of time that the radiative emission maintains or exceeds a defined level (*e.g.*, 50% of peak). For a ROCKET MOTOR: The length of time that the thrust of the motor is above a defined level. []

**BURSTING OBSCURANT SMOKE GRENADE - A NONLETHAL WEAPON** consisting of a grenade that quickly produces a smoke cloud that can rise to 2-3 stories. [10:2745]

**BUS** - (1) A signal line or a set of lines used by an interface system to connect a number of devices and to transfer information. [3] (2) A communication network consisting of a parallel data path within the computer system that is shared by many system components. [10:45] (3) A set of conductors connecting various sections in a computer, or connecting the computer to a peripheral device. [] NOTE: A bus is usually described by the "width" of the parallel data lines (conductors) available. Typical micro-computer busses are 8-, 16-, or 32-bits wide.

**BUTLER MATRIX** - (1) A complex microwave beam-forming network used in antennas. (2) Couplers connected together for the purpose of providing multiple inputs and outputs in an antenna feed array. (3) A phasing system for steering beams in a PHASED ARRAY ANTENNA. []

**BYEMAN** - A compartmented classification system in which in which clearances are granted on a system-by-system basis. [] NOTE: SIGINT satellites may have BYEMAN compartments (*e.g.*, THYOLITE, AQUACADE, CHALET, VORTEX, JUMPSEAT, MAGNUM) for location, orbit, and other capabilities

**BYTE** - A group of eight adjacent bits operated on as a unit. [3].