Plastic Card Terminology

A

Access Control - An implemented system that controls access to buildings or rooms within buildings. Plastic cards (e.g., those with magnetic stripe or proximity control technologies) can be used to gain access to premises.

B

Barcode - A code consisting of a group of printed and variously patterned bars and spaces, and sometimes numerals that are designed to be scanned and read into computer memory as identification for the object it labels.

- **One-dimensional** - (1-D, linear) A barcode consisting of a single row of bars. 1-D barcodes store a smaller amount of data than two-dimensional barcodes and are therefore more suited for applications in which only a few characters are stored. 1-D barcodes store their data in the horizontal width and the information stored is highly redundant. They are therefore more resistant to data degradation. An example of a 1-D barcode is **Code 39.**
- **Two-dimensional** - (2-D) 2-D barcodes store more information than 1-D barcodes and take advantage of both their horizontal and vertical dimensions to do so. An example of a 2-D barcode is **PDF417.**

Barcode Mask - Is an area on specially-made cardstock where a barcode can be printed that will prohibit unauthorized copying of the barcode. ID Wholesaler carries red and black barcode mask cardstock.

Biometrics - Utilizes "something you are" to authenticate identification. This may include a fingerprint, DNA, retinal pattern, iris, hand geometry, vein pattern, voice password or signature dynamics. Biometrics can be used with a smart card to authenticate the user. The user's biometric information is stored on a smart card, the card is placed in a reader, and a biometric scanner reads the information to match it against that on the card. This is a fast, accurate and highly-secure form of user authentication.

Bluetooth - A short range radio technology aimed at simplifying communications among Internet devices and between devices and the Internet. It also aims to simplify data synchronization between Internet devices and other computers.

C

CR79 Card - Slightly smaller dimensionally than CR80 cards; made to fit in the well of a proximity card. Dimensions are 3.303" x 2.051" (83.9 mm x 51 mm).

CR80 Card - Standard card size; CR80 card dimensions are 3.375" x 2.125" (85.6 mm x 54 mm).

CR90 Card – Driver's license size; slightly larger than the standard CR80, CR90 cards are 3.63" x 2.37" (92 mm x 60 mm).

CR100 Card – Often referred to as **oversize** or **military-sized** cards, CR100 cards measure 3.88" x 2.63" (98.5 mm x 67 mm).

CardJet Card - Fargo Electronics, Teslin-based CR80 size cards exhibit a surface that is specially formulated for thermal inkjet printing. CardJet inks bond to cards and dry instantly, without smearing. CardJet cards stand up well to abrasion, dye-migration and UV fading.

CardJet Printing - Discontinued printing technology by Fargo / Fargo Persona that uses an HP inkjet-based print engine to transfer color and monochrome inks onto specially formulated CardJet cards. This particular inkjet printing process involves heating the inks within an ink cartridge. This heat generates vapor bubbles that are ejected in tiny droplets through nozzles in the ink cartridge. These droplets form text and images on the printable card surface which then bond and dry instantly. Magicard has developed advanced solutions.

Card Dispenser - A container used to store blank cards to keep cards free from dust and debris.

Chip - A piece of semi-conducting material (usually composed of silicon) on which an integrated circuit is embedded. It is fitted inside an ID card that is used to store user information and access privileges; also provides added security to prevent card counterfeiting.

Cleaning Card - Its purpose is to assist in keeping a card printer clean and to maintain the key parts of the printer including the printhead, transport rollers and magnetic encoding station. Some card printer manufacturers (e.g., Magicard) recommend cleaning the printer with a cleaning card each time the ribbon is replaced.

Cleaning Roller - Consists of an adhesive surface that picks up debris from blank cards. Some card printer manufacturers (e.g., Magicard) recommend replacing the cleaning roller after every 1000 prints or sooner.

Cleaning Tape - Is a roll of adhesive-lined material and its purpose is to pick up debris from blank cards prior to printing.

Combination Card - (Combi card) Combines both contact and contactless chip technologies, using two different chips.

Contact Smart Card - Contains a single embedded circuit chip that contains memory, or memory plus a microprocessor. Contact smart cards must be inserted into a card acceptor device where pins attached to the reader make "contact" with pads on the surface of the card to read and store information in the chip.

Contactless Smart Card - (Proximity card/prox card) Contains a chip that is connected to an antenna (rather than contact pads as in contact smart cards). The communication between the chip and the reader is therefore wireless.

Cut and Paste - Refers to the very manual and outdated process of creating ID cards. This process involves taking a photo, manually cropping it and sticking it onto a card and then laminating it with a thermal laminator.

D

DPI - (Dots per inch) Measurement of a printer's resolution. For example, 600 DPI indicates that the printer can produce 600 dots of color in each inch of a card. **NOTE:** When judging color reproduction for a CardJet card printer, the inkjet resolution must be at 2400 DPI or better to achieve the color equivalent of a 300 DPI dye-sub printer.

Database ID Software - Software that allows the saving and storage of cardholder records and data.

Debitek (Debit) Stripe - Also referred to as a 'junk stripe' because it is often used for purchases from candy vending machines. Debit stripes are generally encoded at 4000 Oersted. Because the stripe is thinner (1/8") than the standard Hi Co or Lo Co coercively magnetic stripe, it can only contain information specifically for use with the debit system.

Digital Camera - A camera that records images in digital form. Unlike a traditional analog camera that records infinitely variable intensities of light, a digital camera records discrete numbers for storage on a flash memory card, for example. There is a fixed, maximum resolution and number of colors that can be represented. Images are transferred to a computer with a USB cable, memory card or wireless.

Digital Imaging - Scanning or otherwise capturing images which may be subsequently edited, filed, displayed or printed on a plastic card.

Direct-to-Card Printing - (DTC) This process involves the printing of digital images directly onto any plastic card with a smooth, clean, glossy PVC surface.

Dual Interface - Combines both contact and contactless chip technologies, using the same chip. The chip is connected to the contact pad on the top of the card and the antenna inside the card.

Duplex - (Dual-sided) Capable of printing on both sides of a card, usually in a single pass.

Dye Sublimation - (Dye diffusion, dye-sub) The print process ID card printers use to print smooth, continuous-tone and photo-quality images. This process uses a dye-based ribbon roll that is divided into a series of color panels. The color panels are grouped in a repeating series of three separate colors along the length of the ribbon: yellow, magenta, and cyan (YMC). As the ribbon and card pass simultaneously beneath the printhead, hundreds of thermal elements heat the dyes on the ribbon. Once the dyes are heated, they vaporize and diffuse into the surface of the card. Varying the heat intensity of each thermal element within the printhead makes it possible for each transferred dot of color to vary in saturation. This blends one color into the next. The result is continuous-tone, photo-realistic color images.

E

Edge-to-Edge - (Edgeless/over-the-edge) Refers to the maximum printable area on a card. Printers with edge-to-edge printing capability can print just to the edge of a card resulting in printed cards with virtually no border. Nearly all brands print standard CR80 cards edge-to-edge.

Encoding - The process of electronically "writing" information on magnetic stripes or into a variety of smart card types. Holds information such as card holder details and access privileges.

Ethernet Interface - A local area network (LAN) architecture that supports data transfer at varying speeds.

F

Fingerprint Reader - (Fingerprint capture device, fingerprint scanner) A form of biometrics technology in which a scanner is used to identify a person's fingerprint for security purposes. After a sample is taken, access is granted if the fingerprint matches the stored sample.

Fire Wire - (IEEE 1394) High speed external connection used for connecting peripherals.

Font - A character set (alphabet and numerals) of a specified design and size.

H

Half Panel YMCKO Ribbon - Consists of half of the normal yellow (Y), magenta (M) and cyan (C) color panels, but full panels of the black (K) and clear overlay (O). The objective of this ribbon is to allow twice the normal ribbon yield than the standard YMKCO ribbon at a lower cost per card. YMCKO half panel ribbon is ideal for cards when a color ID picture is needed, along with some background black resin text, logo or barcode printing. Practical applications include student ID cards,

employee ID cards and driver's licenses. Refer to Evolis' YMCKO half panel ribbon for more information.

High Coercivity - (HiCo) Magnetic coding on a magnetic stripe. HiCo stripes are encoded at 2750 Oersted. HiCo stripes are generally black and store information on a more secure basis than low coercivity magnetic stripes, due to the higher level of magnetic energy required to encode them. Information is harder to erase on HiCo cards; therefore, they are common in applications where cards are swiped often and require a long life (e.g., credit card applications).

High Volume Printing - (High throughput) Fast, efficient printing for producing large quantities of cards with minimal downtime for supply loading or maintenance.

High Definition Printing - (HDP) This process prints full color images onto clear HDP transfer film. The HDP film is then fused to the card through heat and pressure via a heated roller. This revolutionary technology enhances card durability and consistently produces the best card color available - even on tough-to-print matte-finished cards, proximity cards and smart cards.

Hologram - A unique photographic printing that provides a three dimensional (3D) effect on a flat surface; usually applied to ID cards as a laminate but can also be built into blank card stock. Holograms cannot be easily copied and are used for visual security and aesthetic purposes on cards.

HoloKote - A unique Magicard patented card watermark technology, where Magicard ID card printers print a HoloKote watermark into the card overlay layer during printing. (See sample card with both HoloKote and HoloPatch features.)

HoloMark - A tamper-evident, instantly verifiable 3-D image in a high resolution hologram embedded onto a card. Fargo standard and custom HoloMark cards provide an added level of protection against ID counterfeiting. For use with Fargo Direct-to-Card (DTC) series card printers/encoders. (See sample custom HoloMark cardstock.)

HoloMark Seal - A Fargo-brand peel-and-stick 3-D seal that if removed from a card, is not reusable. A checkerboard pattern will appear to indicate both the card and the seal have been tampered with. The HoloMark seal is a quick, economical way to augment the security of an existing card.

HoloPatch - A unique Magicard visible gold patch built into blank card stock; HoloPatch works with HoloKote to highlight one of the HoloKote watermarks, providing daylight-visible ID card security. (See sample card with both HoloKote and HoloPatch features.)

Hopper - Input and output hoppers hold card stock as they are fed and ejected from the ID card printer.

I

Inkjet Printer - A printer or an all-in-one unit that ejects fast-drying ink through tiny nozzles onto a page to form characters. The inkjet is currently the standard for personal computer printing. Inkjets are fast, affordable and relatively quiet; they provide high quality graphics, and print in color.

Interface - A connection standard for transferring data that is recognized by all PCs or Macintosh computers. For example, a parallel printer port is a common interface found on virtually all PCs for transferring data from the computer to a printer. Other interfaces include USB and ethernet.

International Organization for Standardization - (ISO) In the ID card printing industry for example, ISO defines specifications for magnetic stripe encoding. Printer encoders generally support dual high/low coercivity and tracks 1, 2 and 3. Refer to printer specifications.

J

JIS II - Japanese Industrial Standard for magnetic stripe encoding. JIS II is published and translated into English by the Japan Standards Association.

K

Key FOB - A security token that can be attached to a keychain.

L

LCD - (Liquid crystal display) Shows the current status of a printer, and changes according to the printer's current mode of operation. LCD communicates with text.

LED - (Light-emitting diode) Shows the current status of a printer, and changes according to the printer's current mode of operation. LED communicates with a blinking light.

Lamination - (Overlamination) The process of combining lamination material and core material using time, heat and pressure. Available in clear or holographic designs and in varying thicknesses, laminate patches used in card printers come on rolls, with and without carriers/liners and are typically used for high usage cards (e.g., cards that must be swiped through a reader) or to add advanced visual card security.

Lanyard - A ribbon with a clip worn around the neck, usually used to display one's credentials.

Lockable Hopper - Some card printer manufacturers (e.g., Fargo Electronics) provide a lockable card hopper door. This lock is intended to help prevent theft of your blank card stock. This feature is especially helpful if using valuable card stock such as pre-printed cards, smart cards, or cards with built-in security features such as holograms.

Low Coercivity - (LoCo) Magnetic coding on a magnetic stripe. LoCo stripes are encoded at 300 Oersted. Low coercivity stripes are generally brown and store information less securely than high coercivity magnetic stripes. LoCo magnetic stripe cards are often used in hotel room access control applications.

M

MAP - (Minimum advertised pricing) The manufacturer's suggested retail price (MSRP) or an alternative factory-established price that some products are required to be advertised at. **Our prices are always much lower than the manufacturers MAP pricing!**

MIMO - (Multiple in, multiple out) MIMO algorithms send information out over two or more antennas and information is received via multiple antennas. MIMO uses these additional pathways to transmit more information and then recombines the signal on the receiving end, thereby increasing bandwidth and range.

Machine Readable - A code or characters that can be read by machines.

Magnetic Stripe - (Magstripe) Refers to the black or brown magnetic stripe on a card. The stripe is made of magnetic particles of resin. The resin particle material determines the coercivity of the stripe; the higher the coercivity, the harder it is to encode and erase information from the stripe. Magnetic stripes are often used in applications for access control, time and attendance, lunch programs, library cards and more.

Amount of data that can be encoded to a magnetic stripe (per ISO 7811 format):

Track 1: 210 bits/inch (BPI), 7 bits/character (MPC), maximum of 79 alpha-numeric characters.

Track 2: 75 bits/inch (BPI), 5 bits/character (MPC), maximum of 40 numeric characters.

Track 3: 210 bits/inch (BPI), 5 bits/character (MPC), maximum of 107 numeric characters.

Memory Card - A type of smart card. Also known as a synchronous card, it features 256 bit or 32 byte memory and is suitable for use as a token card or identification card.

Microprocessor Card - A type of smart card, also known as an asynchronous card. Features 1 kilobyte to 64 kilobytes of memory and is suitable for portable or confidential files, identification, tokens, electronic purses or any combination of uses.

Monochrome - ("Mono") A single color (monochrome does not only apply to black).

N

Network ID Software - Software that allows the saving, storage and sharing of cardholder records and data across multiple facilities, departments and applications.

Network Printer - A printer available for use by workstations on a network. A network printer either has its own built-in network interface card, or it is connected to a printer on the network.

O

Oersted - Pertains to magnetic encoding. The unit of magnetic coercive force used to define difficulty of erasure of magnetic material.

Output Stacker - (Output hopper) Stores printed cards in a first-in/first-out order. This feature makes it easy to keep printed cards in a specific order for faster issuance or to print serialized cards.

Overcoat - (Overlay, topcoat) The last layer ('O' in YMCKO) that is placed onto an ID card after the color or monochrome panels have been applied. Overcoat provides some protection from fading and scratching on the card.

Oversized Cards - Used for more efficient visual identification and are available in many non-standard sizes. The most popular sizes are CR90 (3.63" x 2.37"/92 mm x 6 0mm) and CR100 (3.88" x 2.63"/98.5 mm x 67 mm).

Overlamination - (Lamination) The process of combining lamination material and core material using time, heat and pressure. Available in clear or holographic designs and in varying thicknesses, laminate patches used in card printers come on rolls, with and without carriers/liners and are typically used for high usage cards (e.g., cards that must be swiped through a reader) or to add advanced visual card security.

Overlay - (Overcoat, topcoat) The clear overlay panel (O) is provided on dye sublimation print ribbons. This panel is automatically applied to printed cards and helps prevent images from some premature wear or UV fading. All dye sublimation printed images must have either this overlay panel or an overlaminate applied to protect them.

Over-the-Edge - (Edge-to-edge/edgeless) Refers to the maximum printable area on a card. Printers with over-the-edge printing capability can print past the edge of a card resulting in printed cards with absolutely no border.

P

PET - (Plain polyethylene terephthalate or polyester) Is most commonly associated with a material from which cloth and high performance clothing are produced (e.g., DuPont Dacron polyester fiber). Composite cards produced for use in the identification industry are made from PET-G, also known as glycolized polyester. The 'G' represents glycol modifiers, which are incorporated to minimize brittleness and premature aging that occur if unmodified amorphous polyethylene terephthalate (APET) is used in the production of cards.

PVC - (Polyvinyl chloride) The primary material used for typical plastic cards.

Parallel Interface - A channel or transmission path capable of transferring more than one bit simultaneously.

Printhead - The element of the card printer that applies the text, graphics and images to the card material.

Printer Driver - The software that enables your operating system to properly build and format commands and data bound for your printer. In effect, a printer driver tells your operating system all that it needs to know to successfully operate your printer.

Proximity Card - (Prox card/contactless smart card) Used for access control applications. Embedded in the card is a metallic antenna coil, which allows it to communicate with an external antenna. Because the cards require only close proximity to an RF antenna in order to be read, they are referred to as contactless cards.

Proximity Card Encoder - Uses a HID ProxPoint Plus reader mounted on the e-card docking station inside the printer/encoder. The ProxPoint is a "read only" device producing a Wiegand signal that is converted to RS-232 using a Cypress Computer System CVT-2232. Application programs can read information from HID prox cards via an RS-232 signal through a dedicated DB-9 port on the outside of the printer labeled "Prox."

Poly-Composite - (Comp cards) A polyester core sandwiched between PVC material. Stronger and more durable than regular PVC cards, comp cards are recommended for utilization in high-usage environments or if lamination is part of one's particular ID card printing process.

R

RFID - (Radio Frequency ID) A wireless technology for communication between electronic devices. In the ID card industry, it is RFID technology that enables a contactless smart card to communicate with a reader.

RoHS - (Restrictions of the Use of Hazardous Substances) An advanced Japanese and European directive that regulates maximum concentrations of six hazardous materials that are used in electrical and electronics equipment. These materials are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).

Resin Thermal Transfer - The process used to print sharp black text and crisp barcodes that can be read by both infra-red and visible-light barcode scanners. It is also the process used to print ultra-fast, economical one color cards. Like dye sublimation, this process uses a thermal printhead to transfer color from the ribbon roll to the card. The difference, however, is that solid dots of color are transferred in the form of a resin-based ink which fuses to the surface of the card when heated. This produces very durable, single-color images.

Resolution - Dimension of the smallest element of an image that can be printed; usually stated in dots per inch (DPI).

Reverse Transfer - (Re-transfer) ID card printing technique where the card image is first printed onto a transparent re-transfer film, that is then stuck onto the card surface. Re-transfer printing provides high quality images and provides the ability to print on uneven card surfaces and/or differing materials.

Reverse Transfer Film - (Re-transfer film) A reverse transfer ID card printer first transfers information to be printed onto the card to the underside of a clear ribbon (the initial dye transfer), then transfers the printed information from that ribbon onto the card in such a manner that the information on the card appears under a protective "release layer" of the clear ribbon (the re-transfer step). In other words, card images are transferred (or sublimated) from the YMCK dye film onto a clear film and then laminated entirely onto the card.

Rewritable Card - Contains a thermo-sensitive material that allows data to become visible or invisible depending upon the temperature applied. Rewritable cards can be erased and rewritten many times over. For example, the Tattoo Rewrite Evolis card printer can erase and rewrite cards up to 500 times. Rewritable cards are perfect for practical applications in visitor management, customer loyalty and schools.

S

Scratch Off Ribbon - A common application for scratch off ribbon is for pre-paid phone cards to 'hide' the PIN number that will activate the phone card until it is in the hands of the card owner. Prior to applying the scratch off ribbon, a monochrome or full color ribbon (scratch off ribbon can be applied on top of the overlay or 'O' panel of a YMCKO ribbon) must be used to print the data and graphics desired on the card. Then the monochrome or color ribbon must be replaced with the scratch off ribbon (the card layout must subsequently also be changed so that the scratch off material prints in the area desired) and the card resent through the printer.

Self-Adhesive Laminate - A laminate that can be applied manually - without the use of a thermal laminator. Laminates in general can add an extra level of security and durability to a card. Refer to part number PSHoloLam to learn more about a specific type of self-adhesive laminate.

Signature Capture Pad - A form of biometrics technology that contains a touchpad sensor that reads the pressure applied to a stylus tip used for signing, and then transmits the signature data to a computer.

Signature Panel - An area on a card the allows the cardholder to write their signature. See CR80.030 PVC cards with signature panel for an example.

Single-sided - Capable of printing on only one side of a card.

Smart Card - Smart cards have an embedded computer circuit that contains either a memory chip or a microprocessor chip. There are several types of smart cards: memory, contact, contactless, hybrid (twin), combi (dual interface), proximity and vicinity.

T

TWAIN - Is an interface typically used between image processing software and a digital camera or scanner.

Thermal Printing - The process of creating an image on a plastic card using a heated printhead via a dye sublimation ID card printer.

Thermal Printhead - An electronic device which uses heat to transfer a digitized image from a special ribbon to the flat surface of a plastic card.

Thermal Transfer Overlaminate - A card overlaminate available in a 0.25 mil thickness that increases card security and durability; often used for moderate durability applications or when additional security (such as holographic images) are needed.

Topcoat - (Overcoat, overlay) The topcoat (T) panel of a ribbon is applied to printed cards and helps prevent images from some premature wear or UV fading. Topcoats are available as a panel on color and monochrome ribbons, or provided on a separate roll in clear or holographic styles.

U

Universal Serial Bus Interface - (USB) An input/output (I/O) bus capable of data transfer at 12 megabits (1.5 megabytes) used for connecting peripherals to a microprocessor. Typically, each device connected to a computer uses its own port. USB can connect up to 127 peripherals through a single port by daisy-chaining the peripherals together. USB devices may be hot plugged, which means that power does not have to be turned off to connect or disconnect a peripheral. It is expected that USB will become a primary means of connection in IBM-compatible PCs. Most major hardware, software and telecommunications providers support USB. Some printers do not yet support USB: however, most of these parallel interface printers will accommodate a parallel to USB conversion cable.

V

VeriMark - A tamper-evident, instantly verifiable 2-D silver metallic foil embedded with a logo or other custom graphics onto a card using a hot stamp process. Fargo custom VeriMark cards provide an added level of protection against ID counterfeiting. For use with Fargo Direct-to-Card (DTC) series card printers/encoders.

Visitor Management Software - Software used to register, badge and track visitors. Fox ID and Magicard ID Software.

W

Wax Ribbon - Is more versatile than a standard ribbon on different card materials, including ABS and special varnished cards, as well as non-PVC card materials such as cardboards (e.g., paper cards). In contrast, the dyes in a normal ribbon are not able to adhere to the surfaces of paper cards. Refer to Evolis' BlackWAX monochrome ribbons

Webcam - A type of digital camera that is capable of downloading images to a computer for transmission over the Internet or other network.

Y

YMC - (Yellow, magenta, cyan) Yellow, magenta and cyan are the primary print colors for cards. The three colors are combined in varying degrees to make a full spectrum of colors.

YMCK - (Yellow, magenta, cyan, monochrome) Yellow, magenta and cyan are the primary print colors for cards. The three colors are combined in varying degrees to make a full spectrum of colors. Monochrome or 'K' is black resin panel.

YMCKK - (Yellow, magenta, cyan, monochrome, monochrome) Yellow, magenta and cyan are the primary print colors for cards. The three colors are combined in varying degrees to make a full spectrum of colors. Monochrome or 'K' are black resin panels - the latter 'K' is used for monochrome printing on the back side of a card.

YMCKT - (Yellow, magenta, cyan, monochrome, topcoat) Yellow, magenta and cyan are the primary print colors for cards. The three colors are combined in varying degrees to make a full spectrum of colors. Monochrome or 'K' is a black resin panel, and the topcoat panel provides the card with minimal protection against everyday use and environmental elements (e.g., UV rays).

YMCKO - (Yellow, magenta, cyan, monochrome, overcoat) Yellow, magenta and cyan are the primary print colors for cards. The three colors are combined in varying degrees to make a full spectrum of colors. Monochrome or 'K' is a black resin panel, and clear overlay or 'O' is a thin, protective layer.

YMCKOK - (Yellow, magenta, cyan, monochrome, overcoat, monochrome) Yellow, magenta and cyan are the primary print colors for cards. The three colors are combined in varying degrees to make a full spectrum of colors. Monochrome or 'K' is a black resin panel, and clear overlay or 'O' is a thin, protective layer. The latter 'K' is used for monochrome printing on the back side of a card.

Y	Yellow
M	Magenta
C	Cyan
K	Keyline (or Black)
O	Clear protective Overlay Panel (Encapsulates Image onto Plastic Card)
K	Keyline (or Black on Reverse side of Plastic Card)
T	Top Coat (Thin protective Overlay)