

GLOSSARY

Active tag—An RFID tag that includes a battery for powering the microchip's circuitry and transmitting a signal to a reader. Active tags are not used in library RFID systems.

Addressability—The ability to address bits, fields, files, or other portions of the data on a tag.

Alignment—The orientation of the tag to the reader.

Antenna—The conductive element that radiates or receives energy in the radio frequency spectrum to and from the tag.

Anti-collision—A technique for keeping radio waves from interfering with one another, especially in the case of reading more than one tag in the same reader's field as with a stack of books.

Bi-directional—Capable of operating (not simultaneously) in either of two directions that are the opposite of each another.

Binary—A numbering system in which numbers are expressed as combinations of digits 0 and 1 or off and on.

Capacity—The number of bits that can be programmed into the tag.

Capture window—Region of the scanner field in which a tag will operate.

Contactless smart card—An identification card that contains an RFID chip to transmit information to a reader without having to be swiped through a reader.

Electromagnetic library security system—A security system that uses magnetic strips in objects that are read by a scanner in an antenna or a sensitizer/desensitizer.

Electronic article surveillance (EAS)—A system that uses tags that can only be turned on or off to indicate check-out or check-in status. Both electromagnetic and RF systems are of this type.

EM—Electromagnetic.

Error correction code—A code on an RFID tag that enables a reader to ascertain the value of missing or garbled bits of data.

Error rate—The number of errors per number of transactions.

Exciter—The transmitter that is part of a scanner.

Factory programming—The programming of information into a tag occurring as part of the manufacturing process. The tag is read-only.

Field programming—The programming of information into a tag after it has been shipped from the manufacturer, usually meaning that information specific to the application can be added by the using organization. In some cases, change of the data in the tag is possible.

High-frequency tags—Tags that operate between 3 and 30 MHz. The frequency used in library RFID systems is 13.56 MHz. ISO 18000-3 addresses the air interface for tags operating in this frequency range. These tags can be read at up to a distance of 10 feet and have a fast data transfer rate.

ID filter—Software that compares a newly read ID with that in a database.

Interface—An electronic interconnection of devices—hardware or software.

Interrogator—An RFID reader.

In-use programming—The ability to write data to a tag while it is attached to its object.

ISO 18000-3—The pending standard for the air interface for RFID tags that operate at 13.56 MHz.

Low-frequency tags—Tags that operate at a frequency as low as 30 KHz or as high as 300 KHz, but most often at 125 KHz. They can be read at no more than 3 feet and the data transfer rate is slow. This type of tag is widely used in retailing because it is relatively inexpensive.

Medium-frequency tags—Tags that operate at a frequency of 300 KHz to 3 MHz.

Misread—A condition that exists when the data retrieved by the scanner or reader in the antenna is different from the corresponding data in the tag.

Multiplexor—A device that supports multiple readers by checking each in accordance with a scheduling scheme.

Nominal range—The read range at which tags can be read reliably.

Omni-directional—Capability of a tag to operate in any orientation.

Orientation—Alignment of the tag with respect to the reader or tag.

Passive tag—A tag that contains no internal power source. It typically derives its power from the carrier signal radiated from the scanner or reader. This type of tag is used in all library RFID systems.

Programming—Adding to or altering the information in a tag.

Radio frequency (RF)—A system that communicates over radio link between a data source and a scanner or reader. When used in the context of theft detection systems, it refers to a system that uses tags that can only be turned on and off.

Radio frequency identification (RFID)—A system that reads or writes data to RF tags that provide identification and other information pertaining to the object to which the tag is attached. The tags have storage capacity for at least an identification number.

Range—The distance at which successful reading or writing can be accomplished.

Read—The extraction, decoding, and presentation of data from a tag.

Read-only tag—A tag that can only be read because it was programmed at the factory.

Read range—The maximum rate at which data can be read from a tag expressed in bits per second.

Read rate—The maximum rate at which data can be read from a tag.

Read-write tag—A tag that is reprogrammable. Information can be added or changed.

Reader—A device that extracts and separates the information from the tag.

Reader-writer—A device that can not only read information but also write new information to a tag.

Reprogrammability—The ability to read from and write data to the tag while the tag is attached to its object.

Scanner—The part of a reader that can send and receive radio waves. It also is called an antenna.

Sensor—A device that responds to a stimulus and produces an electronic signal. Often used to describe the exit control devices in a library.

Smart card—In the context of library RFID systems, a patron card that has an RFID chip in it.

Tag—The transponder or electronic label that contains the information identifying an object.

Target—A term that encompasses magnetic strips, RF tags, and RFID tags.

Transponder—Technical name for a tag.

Write—The transfer of data to a tag.

Write-once, read-many (WORM) tag—A tag that can be part or totally programmed once by the user and afterward only read.

Write rate—The rate at which information is transferred to a tag.