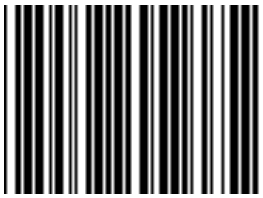
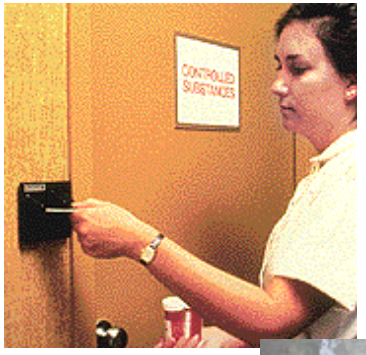
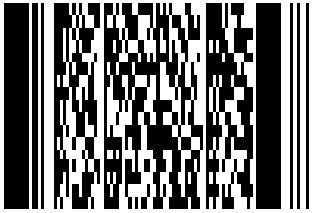
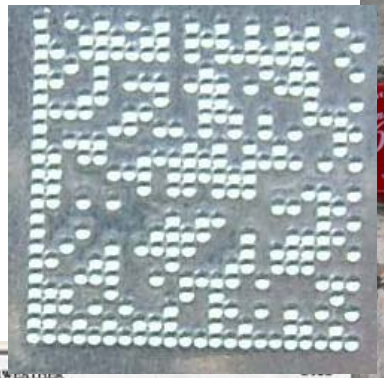
Different types of Data Collection/Identification

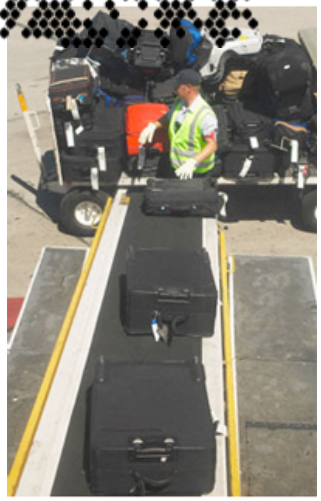
Technologies





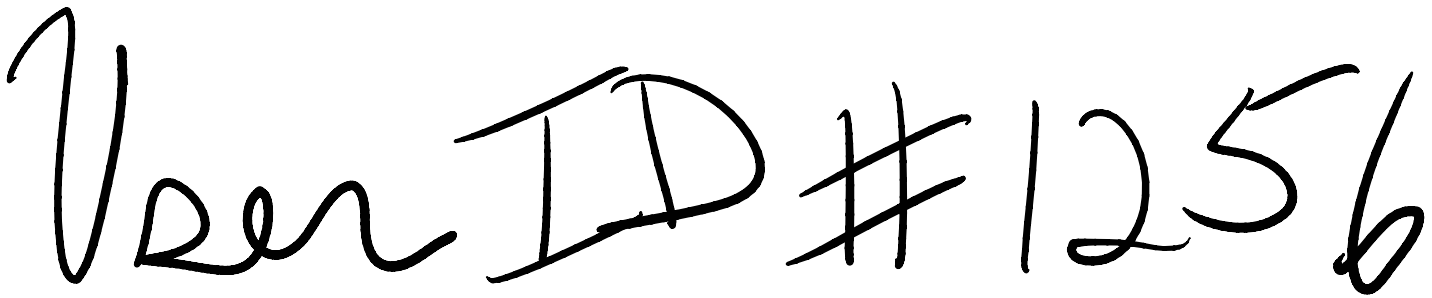






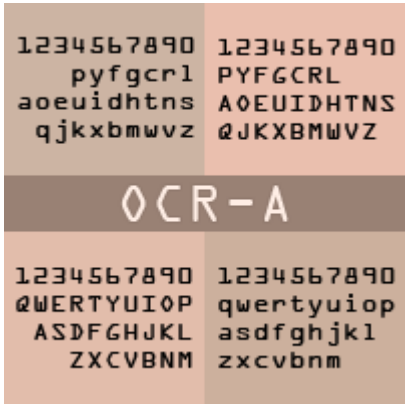
Handwritten or Keyboard Entered

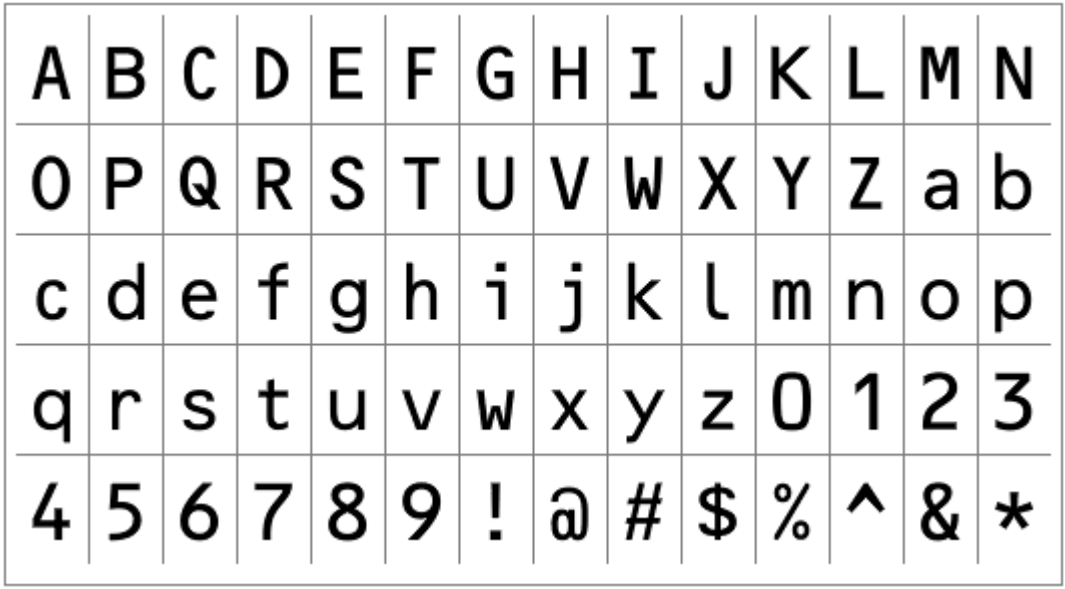
- Prone to Errors
- Not typically read automatically
- Little to no security by itself



Optical and Magnetic Ink Character Recognition

- Designed for visual recognition by computer and the human eye
- Little to no security by itself
- Check processing utilizes this technology



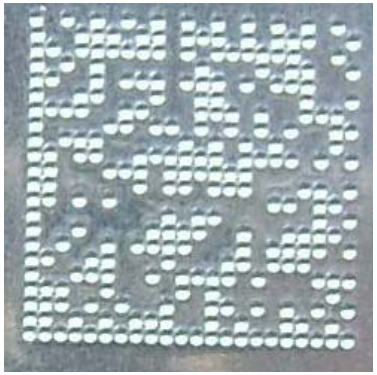


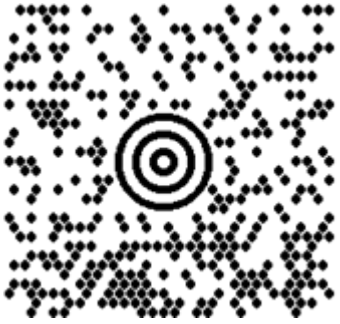
Magnetic Stripe

- Encoded Information in a magnetic strip
- Typically scene on credit/debit cards, transit cards
- Some Information may be visual on the card
- Different levels of security can be made at a systems level
- Contact reading
- Control of the card/information is key

Bar Code Technology

- Linear and 2D formats
- Can encode simple or complex sets of data depending on the code
- Used at POS, Supply chain, forms processing, and many other areas





RFID

- RFID comes in different forms
- Active, Passive, Battery Assisted Passive
- Frequency
  - Low Frequency or LF
    - ***135 kHz and below (animal ID)***
  - High Frequency or HF
    - ***13.56 MHz*** *passive* ***(item ID, contactless smart cards***
    - ***13.56 MHz*** *semi-active* ***(toll tags, road telematics)***
  - Ultra High Frequency or UHF – 860 – 960 MHz
    - ***860-920 MHz, passive -"Gen2" UHF such as EPC™***
  - Microwave
    - ***2.45 GHz active or semi-active (vehicle ID and control)***

RFID

- Standards provide basis for the technology
  - ISO/IEC 18000-1 through18000 – 7
- Different types of RFID offer different read ranges
  - real world very different than laboratory
- Used in toll collection, supply chain applications, asset management, security
- Information on tags is invisible
- Chip based technology offers ability for added security, data protection, encryption

Overview

- There is a range of data collection technologies
- RFID is an advanced technology that offers some unique security enhancements
- Technologies are often used to support each other
- Must choose the technology in the context of what process you are trying to improve

Overview

- Smart Business process and infrastructure decisions are essential to security, for example
  - What data gets encoded on the data carrier
  - Physical and virtual security to protect computers/database
  - Rules governing who can view, edit, delete, add information
- Legislating around the technology and security is ill advised because you can't know what a specific application will need so it would either overestimate or underestimate the requirements. Also fails to account for new technology developments that can add security.