RFID Protocols

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RFID= HW + SW and applications

RFID systems: not only hardware, not only software

Hw = car Sw = driver

Applications: many, in many areas. RFID systems are most useful in managing of many objects

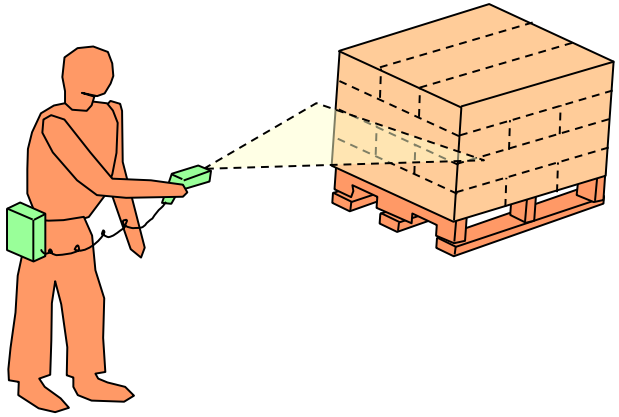
RFID recall

- RFID = Radio Frequency IDentification.
- An ADC (Automated Data Collection) technology that:
  - uses radio-frequency waves to transfer data between a reader and a movable item to identify, categorize, track…
  - Is fast and does not require physical sight or contact between reader/scanner and the tagged item.
  - Performs the operation using low cost components.
  - Attempts to provide unique identification and backend integration that allows for wide range of applications.
- Other ADC technologies: Bar codes, OCR

Applications

- Manufacturing and Processing
  - Inventory and production process monitoring
  - Warehouse order fulfillment
- **Supply Chain Management**
  - **Inventory tracking systems**
  - **Logistics management**
- **Retail**
  - **Inventory control and customer insight**
  - **Auto checkout with reverse logistics**
- **Security**
  - **Access control**
  - **Counterfeiting and Theft control/prevention**
- Location Tracking

Specific sample applications



Protocols classification

Problems to be solved by protocols:

- tags collision
- tags identification
- missing tags
- information collection
- multireader collision

and others

System performance

What do we want? Fastest possible systems!

Fast(est) protocols that exploit the hardware and the specific problem/environment features: fast systems = happy customers

Example: theft control or auto checkout