

PORT & SHIPPINGTECH



Intermec: Leadership and Experience

Globally: Active in over 65 Countries

Global Headquarters
Regional Offices
Major Regional Service Depots

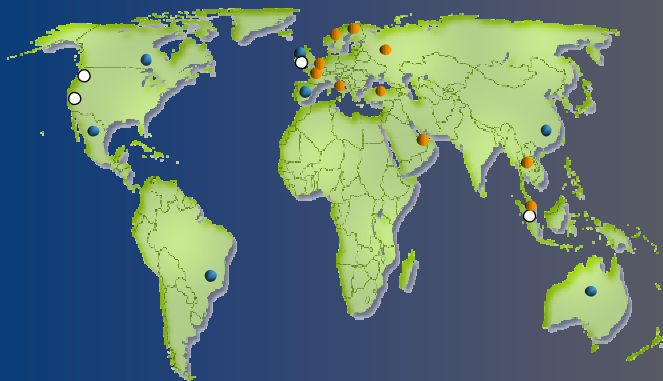
Everett, WA
USA and Canada

Mexico
North Latin
America

Brazil
South Latin
America

Reading, UK
EMEA

Singapore
Asia Pacific



- Australia
- Benelux
- Brazil
- China
- Denmark
- Dubai
- Finland
- France
- Germany
- Italy
- Korea
- Mexico
- Norway
- Russia
- Singapore
- Spain
- Sweden
- Turkey
- United Kingdom
- Canada



ADC Innovation Leader

- Inventor of Code 39
- 1st. Portable Scanner
- Wireless LAN Pioneer
- Bluetooth Scanning
- 1st. Data Collection Pocket PC
- Fuel Cell Technology
- MEMS Scanning
- Smart battery
- RFID Leader
- Near/Far Area Imaging
-



Intermec

The World's Most Complete Line Of Supply Chain Products And Services



Mobile Computers



RFID



Data Capture



Printers

Intermec

RFID UHF



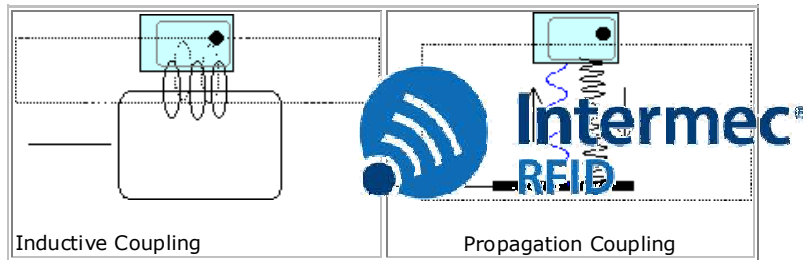
Intermec®
RFID

Is it still true there are only few installations?

- Many legends around this technology
- More alibi rather than real motivations

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Passive RFID Communications



HF RFID Frequencies
125 KHz - 13.56 MHz

- **Small Distance**
- **Low Speed**

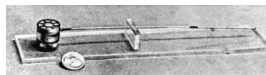
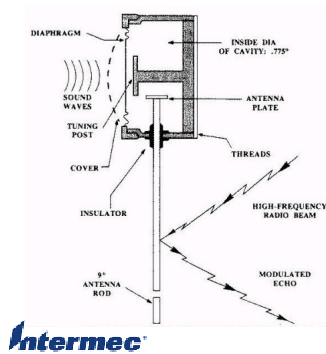
UHF RFID Frequencies
865 MHz – 930 MHz

- **Longer Distances**
- **Higher Speeds**
- **Best frequency when used > 1m**
- **Needed in the real Supply Chain applications**

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History: First RFID Tag - The Great Seal Bug (1945)

- Eavesdropping device designed by Leon Theremin (inventor of Thereminvox) was built into the Great Seal given to US ambassador in Moscow by Soviet children in 1945
- Backscattered a harmonic of the received 330 MHz CW signal, amplitude modulated by the sound in the room
- Was discovered only in 1952 by accident by British radio operator
- On display in NSA National Cryptologic Museum (Washington, DC)



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Global Supply Chain: RFID EPCGen2

EPCglobal®

- 2004** Intermec donates the 5 key patents of the RFID UHF technology to EPCGlobal thus enabling the release of the Gen2 Standard
- 2005** Intermec issues the Rapid Start Licensing Program providing participants access to up to four portfolios of intellectual property from Intermec's 145+ critical RFID patents.
- 2006** The first products compliant to the new technology specifications are put on the market making it possible to reach the performances needed by real life applications
- 2007** The Gen2 technology is ready for real solutions

Intermec®

Intermec®
RFID

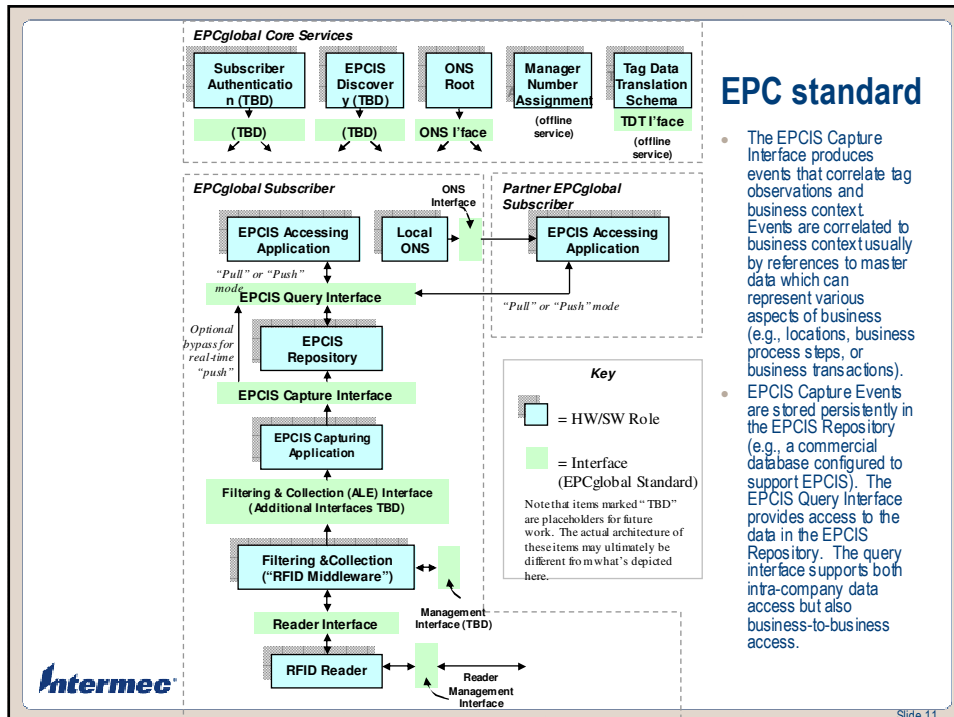
The born of a new era in RFID in Italy

13th July 2007

The Communications Minister On. Gentiloni issues a decree to free the UHF frequency band used by passive RFID devices



- Frequency band UHF 865-868 Mhz
- 2W indoor
- 2W outdoor
- Free use on a non-interfering base



- The EPCIS Capture Interface produces events that correlate tag observations and business context. Events are correlated to business context usually by references to master data which can represent various aspects of business (e.g., locations, business process steps, or business transactions).
- EPCIS Capture Events are stored persistently in the EPCIS Repository (e.g., a commercial database configured to support EPCIS). The EPCIS Query Interface provides access to the data in the EPCIS Repository. The query interface supports both intra-company data access but also business-to-business access.

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Intermec: The broadest RFID product range on the market



Metro AG



August 2006

The test:

- 18 pallets run through 18 portals at real life speed
- Mix pallets, with up to 70% liquids
- Each pallets contains 62 tags
- Some tags are "hidden" on the inside of the pallet



2007 - Roll-out of the Real Cash&Carry stores in Germany

2009 – Expansion to the stores in France through DHL logistics



Why UHF RFID?

- Increased operational speed (simultaneous readings)
- Reading of hidden labels inside the pallet
- Immediate check of pallet / carton coherence
- Error reduction



Metro AG – the suppliers



The Metro / Intermec Starter Kits

1- RFID printer with RFID label printing sw

- Before any shipment to Metro, the supplier prints an RFID label and applies it on the pallet



2- RFID Printer + RFID Portal

- In addition to the label printing, the pallet goes through an RFID portal before being shipped and the RFID label is read
- The information is then immediately sent to Metro Information System which will expect this delivery in Inbound.
- This process enables Metro to increase the goods tracking information returned to its supplier



Why UHF RFID?

- Enhanced visibility of the goods throughout the Supply Chain for both Metro and its Suppliers



Logistics asset tracking - Swiss Post



The problem

- 45.000 roll-cages to be tracked
- No previous tracking system
- Manual inventory (twice a year)
- Totally inaccurate inventory
- No planning possible



The result

- Tracking of each single roll-cage
- Accurate logistics planning
- Optimization of exchange between empty and full cages
- Easy way to find empty cages whenever necessary
- Automatic cycle count
- The inventory is always correct

Why UHF RFID?

- Industrial Tag
- All weather outdoor use
- Durability in time



Bag Tracking



IATA recommended practice 1740c

- UHF (860-960 MHz)
- EPC Gen2
- ISO 18000-6c



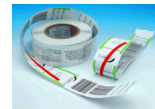
Intermec RFID in Airports worldwide

- Schiphol - Amsterdam
- Charles DeGaulle – Parigi
- Hong Kong International airport
- Bangkok International airport
- ...



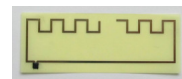
Why UHF RFID?

- Reading also "invisible" tags placed underneath the baggage
- Durability of an RFID tag, needed in flights with stopovers
- Better bag tracking accuracy



Application: Border Control

Program NEXUS



US-Canada border

- Special lane for owners of NEXUS pass (plastic card with photograph and RFID tag)
- Equipment and tags are supplied by Intermec

Why UHF RFID?

- Reading also tags placed on the car
- Durability of an RFID tag,
- Photo association with tag



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RFID in the Automotive industry

Kuhne+Nagel

Iveco spare parts logistics

- Parts tracking
- Detection of parts to be inspected
- Detection of non original parts



The project

- Inbound RFID portals
- Outbound RFID scales
- Outbound RFID portals
- RFID printers for writing the RFID labels
- RFID handheld terminals for picking



Why UHF RFID?

- Increased speed (simultaneous readings)
- Error reduction
- RFID tag uniqueness



UHF RFID because

- The technology is now ready to offer solutions enabling companies to increase market competitiveness
- Tools and standards are available but...
- Real world implementations require the right expertise coming from the right partners after a detailed analysis of the customer's processes
- So let's use RFID to increment the business.



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