



CERP

"Future Roadmap for Research"

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Setting up the RFID Cluster

January 2007:

Establishing synergies between RFID research projects is a prerequisite for a competitive industry and for a secure and safe deployment in Europe

Coordinators:

Dr. Gerd Wolfram (METRO Group / CE RFID)

Dr. Birgit Gampl (METRO Group / CE RFID)

Objectives of CERP

13 EU-funded RFID projects cooperate to

- ➔ facilitate networking & coordinate research activities
- ➔ assure coherence of work in Europe
- ➔ establish synergies
- ➔ exchange expertise and maximize impact



CERP

Projects, coordinators and links

Project	Coordinator	Website
AMI-4-SME	Harald SUNDMAEKER	www.ami4sme.org
BRIDGE	Henri BARTHEL	www.bridge-project.eu
CE RFID	Gerd WOLFRAM	www.rfid-in-action.eu
CoBIs	Stephan HALLER	www.cobis-online.de
DYNAMITE	Adam Adgar	http://osiris.sunderland.ac.uk/~cs0aad/DYNAMITE/Index.htm
INDISPUTABLE KEY	Kaj NUMMILA	www.indisputablekey.com
PRIME	Eric GODERNIAUX	www.prime-project.eu
PROMISE	Dimitris KIRITSIS	www.promise.no
SMART	George BOBORIDIS	www.smart-rfid.eu
SMMART	Jean-Louis BOUCON	www.smmart.eu
STOLPAN	Andras VILMOS	www.stolpan.eu
STOP	Harald VOGT	www.stop-project.eu
TRASER	Zsolt KEMENY	www.traser-project.eu

The RFID Reference Model: RFID Application Fields

A. Logistical Tracking & Tracing

B. Production, Monitoring, Maintenance

C. Product Safety, Quality, Information

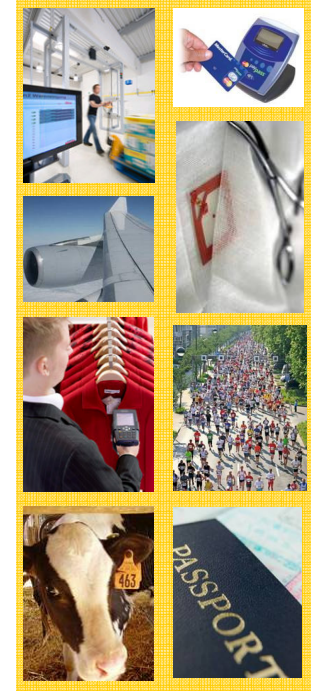
D. Access Control, Tracking & Tracing

E. Loyalty, Membership, Payment

F. eHealth Care

G. Sport, Leisure, Household

H. Public Services



Download: www.rfid-in-action.eu/rfid-referencemodel

The RFID Reference Model: Subcategories

A. Logistical Tracking & Tracing

- AA. Inhouse Logistics
- AB. Closed Loop Logistics
- AC. Open Logistics
- AD. Postal Logistics
- AE. Dangerous Goods Logistics
- AF. Manufacturing Logistics



D. Access Control, Tracking, and Tracing

E. Loyalty, Membership, Payment

F. Health Care

G. Sport, Leisure, Household

H. Public Services

Classifying CERP Projects according to the RFID Reference Model

		Projects												
		AMI-4-SME	BRIDGE	CE-RFID	CoBIs	Dynamite	INDISP. KEY	PRIME	PROMISE	SMART	SMMART	StoLPaN	SToP	TraSer
Application Fields	A. Logistical Tracking & Tracing		■	■	■	■	■			■	■		■	■
	B. Production, Monitoring and Maintenance	■	■	■	■	■		■	■	■			■	■
	C. Product Safety, Quality and Information		■	■	■		■						■	■
	D. Access Control and Tracking & Tracing of Individuals			■	■			■				■		
	E. Loyalty, Membership and Payment											■		
	F. eHealth Care													
	G. Sport, Leisure and Household											■		
	H. Public Services													

- A.-C.: Mainly object tagging
- D.-H.: Tagging with (potential) reference to people
- CERP-Projects mainly operate in the "object tagging" field

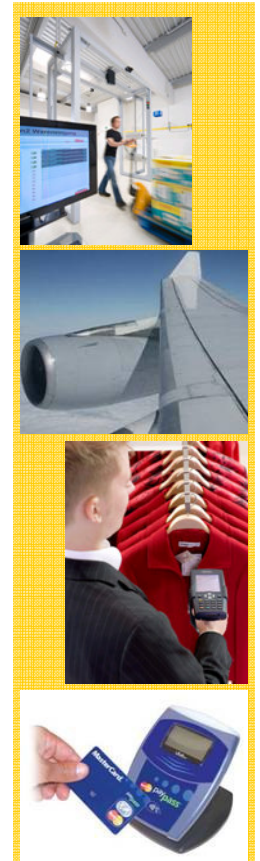
Structure of Paper on RFID Research Needs

➔ Application Fields

1. Logistical Tracking and Tracing
2. Production, Monitoring, and Maintenance
3. Product Safety, Quality, and Information
4. Payment

➔ Within each application field

- State of the art
- Vision
- Gap analysis
- Resulting research targets



Results

Elaboration of 20 major research topics:

- ➔ Highlighting impact for each application field
- ➔ Further evaluation regarding
 - Impact on European industry
 - Immaturity level
 - Required effort
 - Time to commercialisation



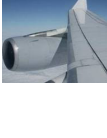



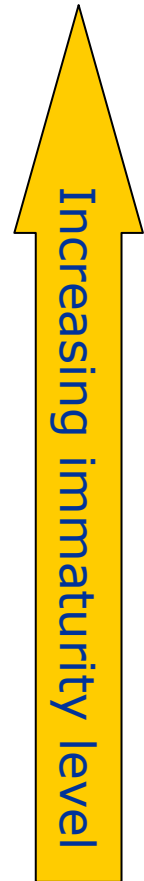
Research needs: 1-3 years until commercialisation

Research topic	Logistics	Product safety	Manufacturing & Maintenance	Payment
User interaction				✓
Reading reliability		✓		
Secure storage of tag data				✓
Confidentiality of tag data		✓		
Improved reader performance (reads/second, range)	✓			



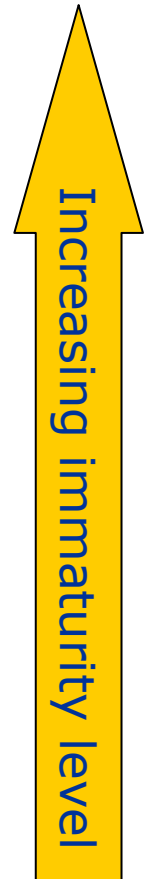
Research needs: 3-5 years until commercialisation

	 Logistics	 Product safety	 Manufacturing & Maintenance	 Payment
Research topic				
User acceptance and privacy				✓
Complex interaction modelling & new RFID based interaction models	✓		✓	
Advanced Sensor Systems	✓		✓	
"Smart" tags (i.e. integrated displays, actuators)	✓		✓	
Standardized data model for B2B exchange		✓		✓
Operation on metallic and moist products	✓	✓	✓	
Access control and security policies for data exchange		✓		✓
Application integration	✓			✓
Large range readability	✓			
Operation in harsh environments (e.g. extreme temperature)	✓		✓	
Tag robustness	✓		✓	✓

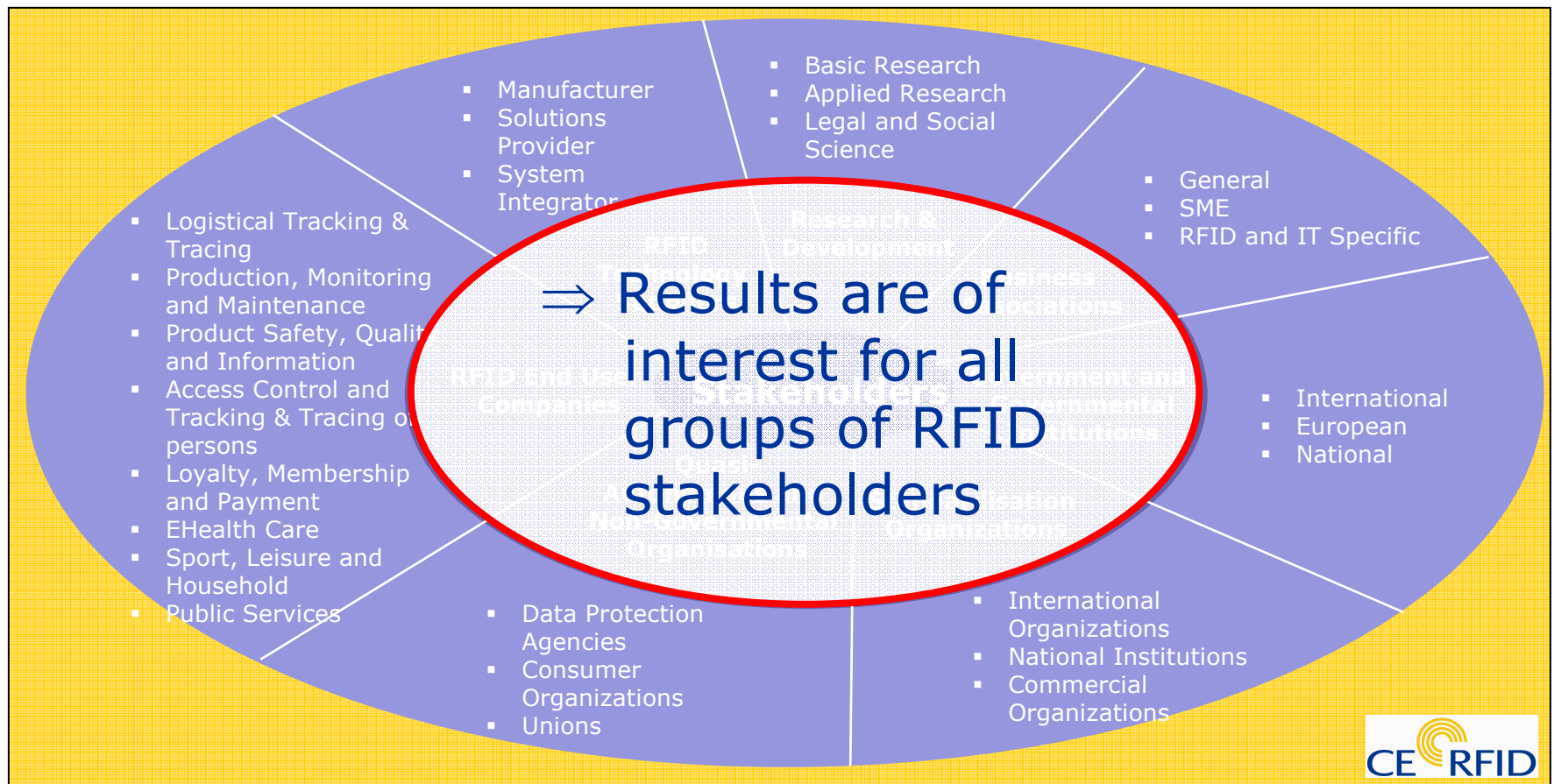


Research needs: > 5 years until commercialisation

Research topic	Logistics	Product safety	Manufacturing & Maintenance	Payment
Product life cycle related RFID enabled features & tag maintenance			✓	
Protection of tags against extreme phenomena (e.g. EMP)				✓
Distributed decision making	✓		✓	
Built-in security	✓		✓	



Target groups of paper on R&D needs: RFID Stakeholder Model



How to get into contact with us?

- ➔ Joint CERP booth plus single project exhibits in the hall outside
 - Information about all projects
 - Paper on RFID research needs available
- ➔ Project website:
www.rfid-in-action.eu/cerp

Thank you for your attention!



Cluster of European RFID Projects

www.rfid-in-action.eu/cerp

Objectives of CERP:

- ▶ Facilitate networking of different RFID projects in Europe
- ▶ Coordinate research activities
- ▶ Assure coherence of work in Europe
- ▶ Leverage expertise, talents, and resources and maximise impact
- ▶ Establish synergies between projects

Projects:

AMI-4-SME	Ambient Intelligence Solutions and Systemic Innovation for Manufacturing SMEs
BRIDGE	Building Radio-Frequency Identification Solutions for the Global Environment
CE RFID	Sustainable Network of European RFID Users and Technology Providers
CoBis	Real World Enterprise Services Powered By Wireless Sensor Networks
Dynamite	Dynamic Decisions in Maintenance
INDISPUTABLE KEY	Tracing Technology Development Spanning the Full Forestry Supply Chain
PRIME	Privacy and Identity Management for Europe
PROMISE	Closed-loop Product Lifecycle Management using Product Embedded Information Devices
SMART	Intelligent Integration of Supply Chain Processes and Consumer Services based on Unique Product Identification in a Networked Business Environment
SMMART	System for Mobile Maintenance Accessible in Real Time
StoLPaN	Store Logistics and Payment with NFC
SToP	Stop Tampering of Products
TraSer	Identity-based Tracking and Web-Services for SMEs