

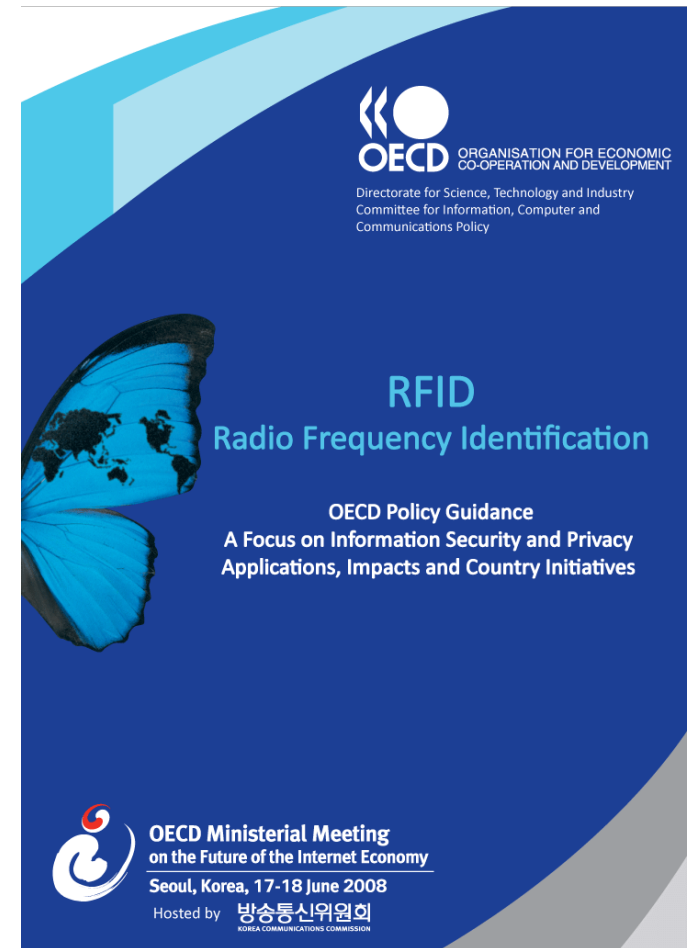
Privacy in RFID

GRIFS

20 February 2009

OECD Policy Guidance on RFID

- ➔ 14 principles to :
 - Enhance business and consumer benefits
 - While taking into account security and privacy concerns



Does Big Brother want to
send too many signals?

By Bruce Schneier
Monday, October 4, 2004

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RFID tags vulnerable to viruses, study says

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THE WORLD'S RFID AUTHORITY

The RFID Hacking Underground

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Graduate Cryptographers Unlock Code of 'Thiefproof' Car Key

Attack on a Cryptographic RFID Device

Why crack the code? Because greater openness means greater security



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Hackers Clone E-Passpo

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Cellphone could crack RFID tags, says cryptographer

[Rick Merritt](#)

(02/14/2006 4:26 PM EST)

URL: <http://www.eetimes.com/showArticle.jhtml?articleID=180201688>

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August 15, 2006

Anyone Who Says RFID Is "Completely Secure" Is Selling Something

What You Should Know About RFID Security To Protect Your Business

by [Paul Stamp](#)

with [Jennifer Alborno Mulligan](#), [Christine Spivey Overby](#), [Ellen Daley](#), [Sarah Bernhardt](#)

EXECUTIVE SUMMARY

THIS IS A DOCUMENT EXCERPT

Radio frequency identification (RFID) technology is not mature enough yet to protect your company secrets. Weak security protocols risk compromising your infrastructure, and any business looking to implement RFID should review the inherent security risks of today's RFID systems. RFID will

[Click Here](#)

(02/14/2006 4:26 PM EST)

URL: <http://www.eetimes.com/showArticle.jhtml?articleID=180201688>

Understanding RFID

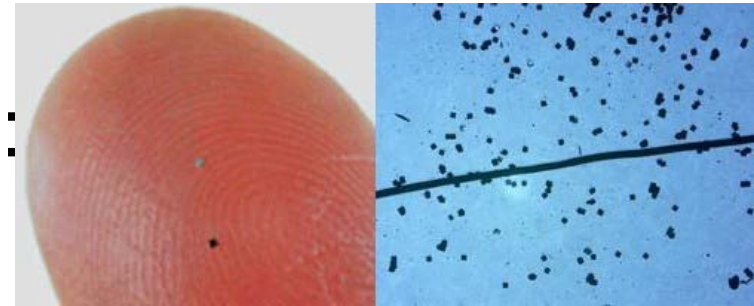
- What is RFID to the privacy community
 - "A technology which enables data collection without contact using electronic tags and wireless transmitters (readers) for identification and other purposes"
- Complexity & variety
 - Applications
 - Evolutions
 - Technology

Characteristics of RFID

- Wireless (invisible)
- Economic potential
- Variety
- Technical complexity
- Vague boundaries
- Possibility of covert collection
- Possibility to track individuals, not just objects
- Could enable or facilitate profiling
- Susceptible to information security risks

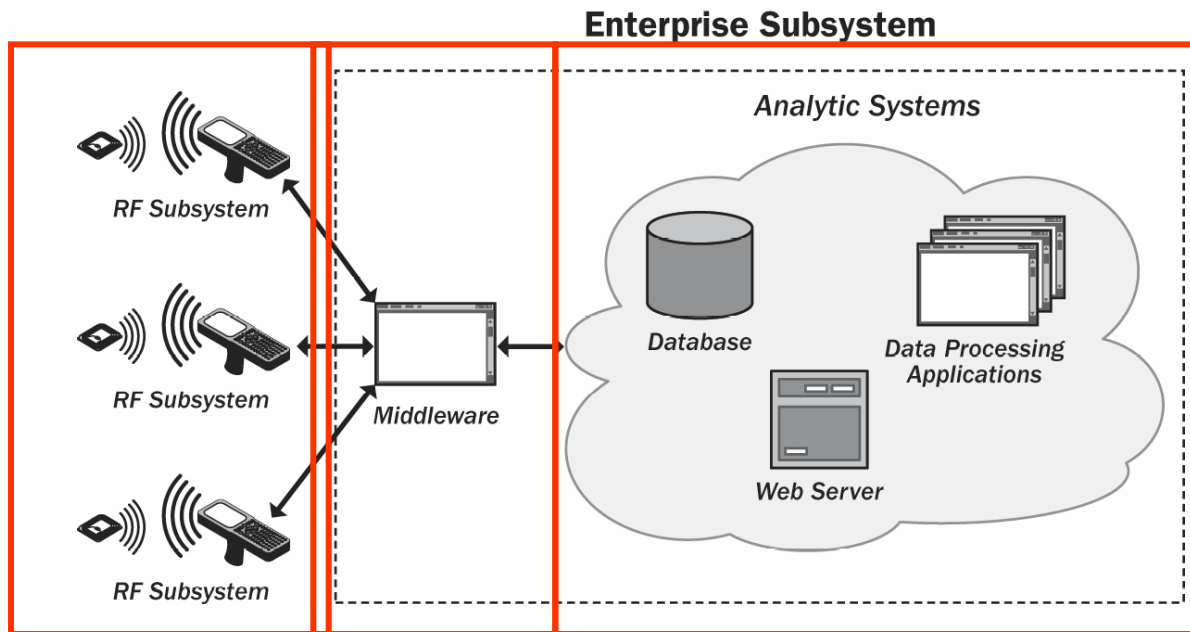
Limitations of RFID

- Laws of governments
- Laws of physics. Example:
 - Size: RFID tags need an antenna
 - Operation range
 - Radio wave RFID
 - Magnetic induction RFID



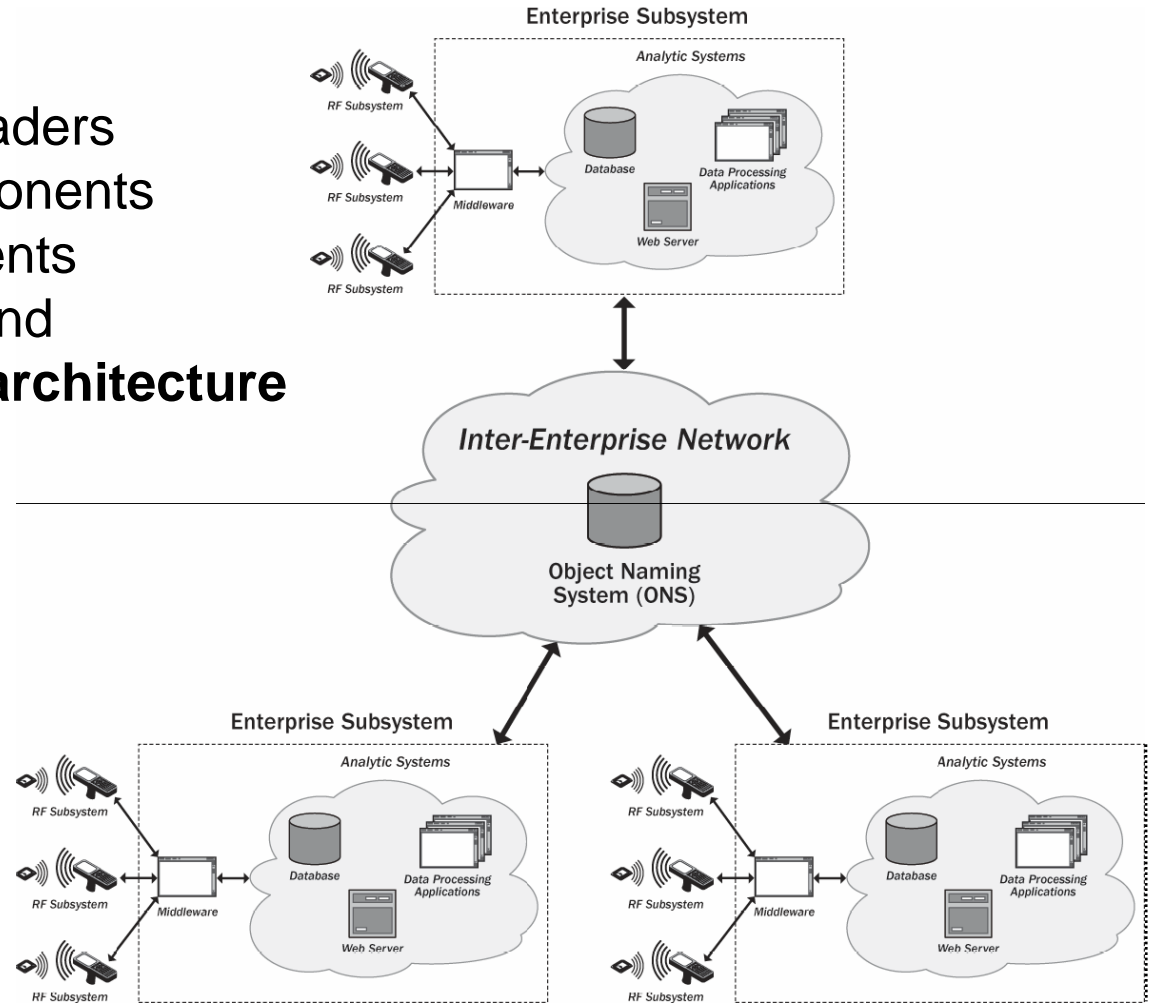
Infrastructure components

- RFID tags and readers
- Middleware components
- Enterprise back-end
- Network components



Infrastructure components

- RFID tags and readers
- Middleware components
- Network components
- Enterprise back-end
- **Inter-enterprise architecture**



Privacy

- Personal data
 - “any information relating to an identified or identifiable individual”
- Data controller
 - The person who is “competent to decide about the contents and use of personal data”
- Provision of tags to individuals

Invisibility of the data collection

- A key characteristic of the technology
- A psychological obstacle to acceptance
- Providing information is key
 - A long list of information to provide
 - Purpose, right of access, existence of tags, content use and control of tags, RFID environment, reading activity, ability to disable tags, where to obtain information....
 - Efficient notices are difficult to implement.
 - Innovative notices
- The consent challenge
- Education and awareness

When is privacy at stake ?

- **Directly** : when RFID systems collect/process data related to an identified or identifiable individual (personal data)
 - ➔ When personal data is collected/processed, OECD Privacy Guidelines apply
- **Indirectly**: when tags are provided to individuals but data has yet to be collected/processed (risk of data collection)

Key strategies for privacy

- Risk approach to privacy
- Privacy by design
 - Short operating ranges requiring participation
 - Data minimisation / anonymisation techniques
 - Systematic use of a kill command
 - Clipped tag



IBM Clipped tag

Knowledge & Consent are key

- Knowledge can be challenging
 - Real time, complex information, small space
 - Need for consensus on what information to provide and how
 - Need for innovative and efficient transparency mechanisms
- Consent can be challenging ?
 - Exceptions to consent (practical aspects, public interest). Need to reach a consensus on these exceptions.
 - Does consent always provide sufficient protection ?

Privacy Impact Assessment

- Privacy impact varies with technology used
- Personal data
- Sensitive data
- Reassessment
- Tags beyond data controller's reach

Holistic approach

- Not all solutions are at the RFID level

Need to consider:

- Each stage of the systems' life cycle
- Each component of the system and steps in the RFID data life cycle

Technical measures

- Critical success factor for RFID
- Preventative / mitigating
- No one-size-fits-all
- Cost and complexity
- R&D and incentives for adoption needed

DPP Workshop

- Open Forum following 2002 IPSE Report
- Membership includes regulators and industry
- Unique centre of expertise
- Published CWA's

<http://www.cen.eu/cenorm/businessdomains/businessdomains/iss/activity/wsdpp.asp>

DPP 2008-9 Work Programme

- Best Practice
- Audit tools
- Voluntary Technology Dialogue Framework