RFID Risks

A perfidious technology?

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We now face the imminent expansion of cyberspace into physical space in the form of

- networked cameras,
- biometric identification devices,
- RFID tags on consumer goods,
- and a wide variety of sensors.

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Current RFID systems unsafe

➔ **No authentication**

◆ *No friend/foe distinction*

➔ **No access control**

◆ *Rogue reader can link to tag*

◆ *Rogue tag can mess up reader*

➔ **No encryption**

◆ *Eavesdropping possible*

➔ **Predictable responses**

◆ *Traffic analysis, linkability*

➔ **No GUI…**

◆ *… and "distance" not enforced by tag*

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RFID Risks: Consumers

➔ **User profiling**

- ◆ *Possible robbery target*
- ◆ *Possible street-marketing target*
- ◆ *Personalised loyalty/discounts*
- ◆ *Refuse/grant access to shop/building*
  - ■ **Even for tags without serial no#**
- ◆ *Loss of location privacy*
  - ■ **By tracking same user profile**

➔ **Fake transactions / Identity theft**

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RFID Risks: Companies

➔ **Corporate espionage**
  ◆ *Scanning competitors inventory*
    ■ **Eavesdropping tags**
    ■ **Querying tags**
  ◆ *Unauthorised access*
    ■ **Fake RFIDs**

➔ **Derived/competing services**
  ◆ *Using competitors installed base*

➔ **Denial of service attacks**
  ◆ *Supply chain failure*
    ■ **Jamming signals**
    ■ **Fake RFIDs**

Me and my `databody`...

➔ **This is / is not me!**

◆ *Plausible deniability*

◆ *"Proof of ownership"*

➔ **Selective disclosure**

◆ *Dressing up your databody*

➔ **Hygiene…**

◆ *Cleaning…*

◆ *Protecting…*

◆ *Keeping in shape…*

http://www.cs.kun.nl/perfide

PERFIDE

Privacy Enhanced
RFID Environment

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