



The Federal Commissioner
for Data Protection and
Freedom of Information

***THE INTERNET OF THINGS - INTERNATIONAL CONFERENCE FOR
INDUSTRY AND ACADEMIA MARCH 26-28, 2008 / ZURICH***

“Developments of the Privacy Debate in the Internet of Things - Status, Issues and Outlook, Europe - Worldwide ”

Peter Schaar

**Federal Commissioner for Data Protection and
Freedom of Information – Bonn, Germany**



Stages of Data Processing Technology

- Until 1750:
Prehistory (hardly any processing of personal data)
- 1750-1945:
Early days of data processing: Industrialization, punch cards
- Since 1945: large-capacity computers
- Since 1980: PC
- Since 1990: computer networks, Internet
- Modern tendencies:
 - Computing power of systems increases more and more
 - Growth of transmission bandwidth and storage capacity
 - Components are becoming smaller and smaller and disappear from the field of vision
 - New concepts (biometrics, voice recognition, geo-localisation ...)
- Ubiquitous data processing



The Right to Privacy (1890)



Samuel Warren und Louis D. Brandeis, Harvard Law Review, Dec. 15, 1890



The Right to Privacy (1890)

„That the individual shall have **full protection in person and in property** is a principle as old as the common law; but it has been found necessary from time to time to define anew the exact nature and extent of such protection. **Political, social, and economic changes entail the recognition of new rights**, and the common law, in its eternal youth, grows to meet the new demands of society ... Later, there came a recognition of man's spiritual nature, of his feelings and his intellect. Gradually the scope of these legal rights broadened; and now the right to life has come to mean the right to enjoy life, - **the right to be let alone.**“

Samuel Warren und Louis D. Brandeis, Harvard Law Review, Dec. 15, 1890



Beginning of the Modern Privacy Debate



At the beginning of the 1960s:

- Kennedy-administration plans creation of national data base with information about every US-citizen
- first large-scale debate about the impact the use of computers has on private life



Data Protection Rules – Worldwide

1972: Data protection act in the German State of Hesse

1974: US Privacy Act

1977: German Federal Data Protection Act

1980: OECD Guidelines of the protection of privacy

1981: Council of Europe: Convention for the Protection
of Individuals with Regard to Automatic Processing
of Personal Data

1995: EU-Data Protection Directive

2000: Data protection as basic right in the European
Charter of Fundamental Rights

2004: APEC Privacy Principles



Right to Informational Self-determination

Ruling by the German Federal Constitutional Court on population census of 19/12/1983:



“The fundamental right grants ... every individual the right to decide himself about the disclosure and use of his personal data. Restrictions of this right to “informational self-determination” are only admissible in the case of a prevailing general interest”.



Challenge: Internet of Things

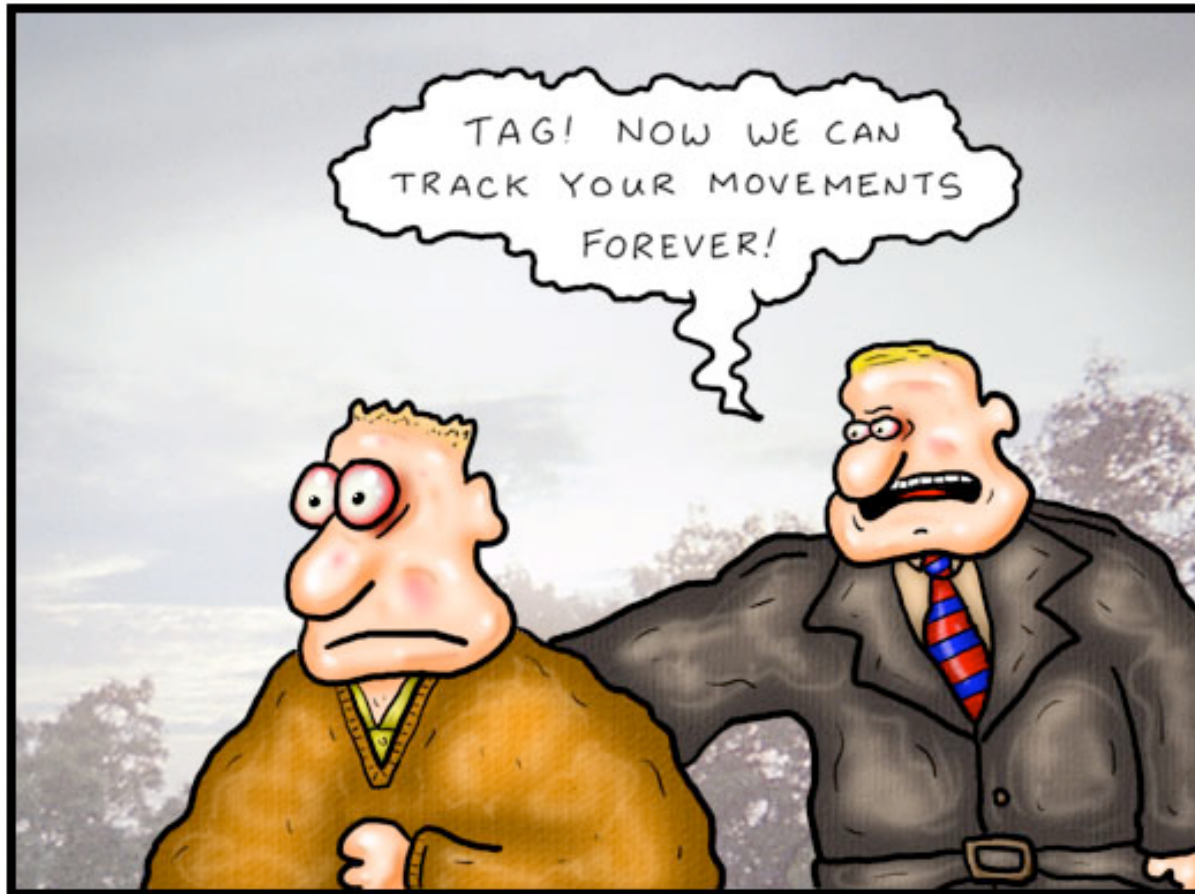
- Data processing everywhere
- Information technology becomes „invisible“
 - Microprocessors are integrated in everyday objects
 - Radio Frequency Identification (RFID)
 - Complexly networked systems (GSM, GPS, RFID, Internet ...)
- New dangers for citizens' fundamental rights
 - Comprehensive data shadows
 - Behavioral profiling
 - Manipulation



Challenge: Ubiquitous Computing

DOCTOR FUN

8 Dec 2003



Copyright © 2003 David Farley, d-farley@ibiblio.org
<http://ibiblio.org/Dave/drfun.html>

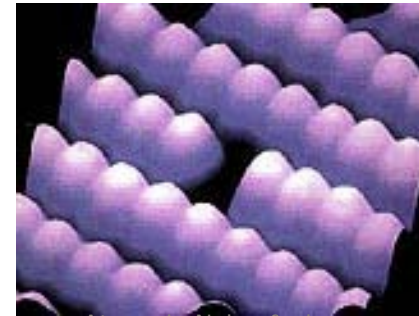
This cartoon is made available on the Internet for personal viewing only. Opinions expressed herein are solely those of the author.

The new fun game of RFID tag



Vision nano technology

- Extremely miniaturized technology on a molecular basis
- invisible to the human eye, not either with a magnifying glass
- Nano sensors: Temperature, pressure, tension, ...
- Further components: Nano-antennas, -transmitters, -batteries
- ...



Atome in Nahaufnahme
© FZ Jülich

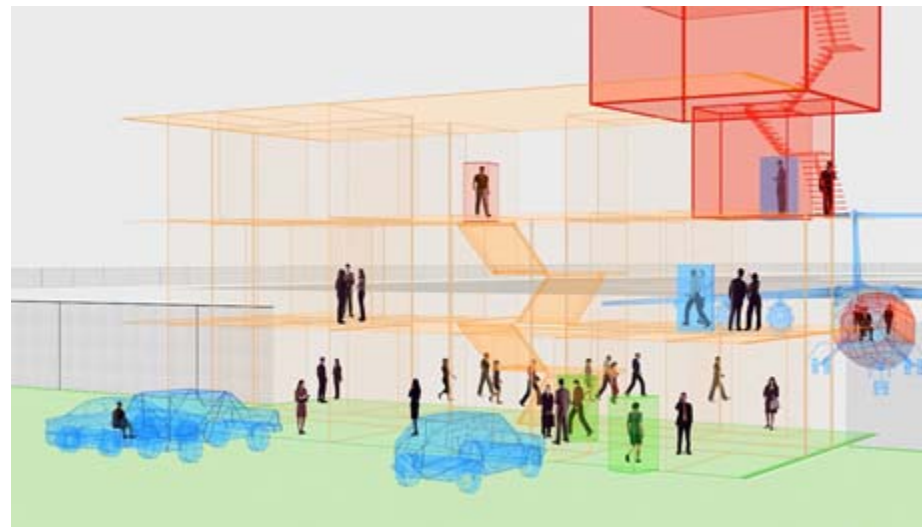


Hitachi Mu-chipp



Nightmare Digital Dust?

„Digital dust“ is ubiquitous, it is no longer possible for us to elude it; and we are labelled without being aware of it – however, not by invisible paint, but by particles taking measures independently, transmitting and receiving data, and which, in the end, make it possible that we can be traced and monitored!





Change of Paradigms

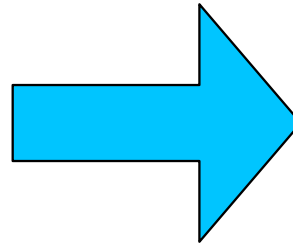
Single-Purpose

Data Collection on Demand

Early Deletion of Data

Tailor-made Programs

Need to Know



Multi Purpose

Context Free Data Collection

Data Retention

Data Mining

Need to Share



Current Concepts of Data Protection Up To Date?

- Personal data
- Necessity principle
- Purpose limitation
- Transparency
- Data controller
- Data subjects' rights
- Data protection supervision



Subject of Data Protection Legislation?

- Data of natural persons
 - The right to informational self-determination refers as a form of the general personal right to natural persons
- Other data – also meriting protection – (such as trade and business secrets, or state secrets) are not protected
- Switzerland and Austria: Data protection also includes legal entities
 - Secret of telecommunications (confidentiality of telecommunications) and the confidential nature of social insurance data protect also data of legal entities



Definition „Personal Data“

„ ... any information relating to an identified or identifiable natural person ('data subject'); an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity“

Art. 2 a Directive 95/46/EC



- Reference to objects / reference to persons (RFID)
- Indirect identification
- Non-permanent / permanent data (traffic data)
- Virtual / absolute anonymity (cookies, pseudonyms)
- Possibility of re-identification and/or de-anonymization (statistical data)



Attribution of IP addresses to persons

ARTICLE 29 DATA PROTECTION WORKING PARTY



01248/07/EN
WP 136

Opinion 4/2007 on the concept of personal data

Adopted on 20th June



Data Controller or Data Processor?

Controller

a natural or legal person, which determines the purposes and means of the processing of personal data

Processor

a natural or legal person which processes personal data on behalf of the controller

Art. 2 d), e) Directive 95/46/EC



Future Development of Data Protection Legislation

- Strengthening of responsibility
- Relation to risk
- Openness of technology
- Orientation of application
 - Concentration on procedural safeguards
 - Audit, control in advance, seal of approval
 - Self-regulation and –control
 - Transparency
- New definition of general/specific data protection law



Necessity of Legislation for New Technologies?

- Legislator has to provide for the framework, and he must not run after technology!
 - Data protection by Design
 - Privacy Enhancing Technology (PET)
 - Protection profiles with defined criteria (certificates)
- Self-regulation and self-commitment of the economic sector can relieve the legislator a part from his burden
- RFID-Tags on goods: Information and control for the individual (de-activation)
- Systemic approach: Risk-prevention and provision of safeguards before personal data are collected



New Right to Confidentiality and Integrity of IT Systems

Ruling by the German Federal Constitutional Court on secret online searches of 27/02/2008:



The new basic right protects data in computers, networks and other IT-systems in a comprehensive way. It extends the specific protection beyond the fundamental right to secrecy of telecommunications. The new basic right supports the right to informational self-determination and thus takes the new risks into account, which the increasing networking of IT-systems involves



Many thanks for your attention!

Peter Schaar

The Federal Commissioner
For Data Protection and
Freedom of Information
Husarenstr. 30

D-53117 Bonn

Tel: +49 (0) 1888 77 99 0

Fax: +49 (0) 1888 10 77 99 550

poststelle@bfdi.bund.de

<http://www.bfdi.bund.de>