

# ***A One Day Big Brother Diary***

FIM, Seminar aus Netzwerke und Sicherheit:  
**Security Considerations in Interconnected  
Networks**

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# *Content*

- ◆ Introduction
- ◆ The day (worst case)
- ◆ Technology / Prevention
- ◆ Risk Analysis
- ◆ Personal Opinion

# *Introduction*

- ◆ Development of technology
- ◆ amount of stored personal data
- ◆ mass surveillance
- ◆ big brother
- ◆ advice on how to prevent data extrusion
- ◆ YOU are vulnerable right now

## *The day*

- ◆ The test person gets up and...
- ◆ ...switches on the television (ip-tv)
- ◆ ...checks mails via WiFi
- ◆ ...opens the garage door (bluetooth)
- ◆ ...is caught on tape (public cameras)
- ◆ ...gets located (GPS)
- ◆ ...opens the office door (RFID)
- ◆ .. uses his phone
- ◆ ...pays via QUICK
- ◆ ...uses clear text protocols

# *Technology / Prevention*

- ◆ Ip-Tv
- ◆ E-Mail
- ◆ Wireless LAN / Bluetooth
- ◆ GPS
- ◆ RFID
- ◆ Websites with registration / Google
- ◆ Telephone

# *Ip-Tv*

- ◆ Ability to send data to the service provider
- ◆ The provider sees what you see
- ◆ Customized advertisement
- ◆ P2P Ip-Tv :
  - ◆ Also clients see what you see
  - ◆ Data injection
  - ◆ Data extrusion

## *E-Mail*

- ◆ Improved technology -> security issues
- ◆ Censoring not only by governments
- ◆ WiFi && pop3
- ◆ SMTP unencrypted
- ◆ No evidence (eavesdrop on filesystem level / network traffic)
- ◆ Mailing lists (mail visible after years)
- ◆ => use VPN || SSH || PGP

# *Wireless LAN / Bluetooth 1/2*

- ◆ Easy to use => popular
- ◆ Insecure by design (see WEP)
- ◆ People w/o. Knowledge build networks
- ◆ Motto: “jey, it works, don't touch it” => no encryption
- ◆ Attacker can be far away (L1 unsecure)
- ◆ Aircrack / ettercap
  - ◆ Crack WEP within 2 minutes
  - ◆ Crack WPA in reasonable time



## *Wireless LAN / Bluetooth 2/2*

- ◆ Basically any script-kiddie with a notebook and a car can eavesdrop
- ◆ Use
  - ◆ 802.11 (radius)
  - ◆ VPN-s
  - ◆ SSH tunnels
  - ◆ IDS / IPS
- ◆ Still no secure:
  - ◆ Deauthenticate clients
  - ◆ Jam frequency
  - ◆ Mdk3.0...



parabolic antenna with rp-sma connection

# *Cameras / Biometric identification*

- ◆ Cameras installed in public places
- ◆ Pictures are analyzed
- ◆ Shape- / structure-recognition
- ◆ Face, fingerprint, iris, signature, voice
- ◆ 4 steps:
  - ◆ Picture recording
  - ◆ Normalizing, modification
  - ◆ Extraction of attributes
  - ◆ Matching
- ◆ London: you get filmed ca. 300 times/day

## *GPS 1/2*

- ◆ Satellite based positioning system
- ◆ 24 satellites / 6 orbits
- ◆ Navigate / track vehicles
- ◆ As safe as the transmission between sender and receiver
- ◆ GPS-jammers
- ◆ Break connections
- ◆ Prevent usage of car tracking systems (anti theft)

# GPS 2/2

The screenshot shows the DealExtreme website interface. At the top left is the DealExtreme logo with the tagline "GREAT GADGETS, PRICE & SERVICE". To the right are navigation links: Help, Contact Us, My Account / DX Points, Newsletters, and Cart - Checkout. Below this is an orange navigation bar with links for Home, \$2 Gadgets, New Arrivals, Top Sellers, Order Tracking, Forums, and Latest Reviews. A search bar is located below the navigation bar. The main navigation menu includes categories like Computers, Electronics, Car Accessories, Hobbies & Toys, Cell Phone, Video Games, Flashlights, Guns & Lasers, iPod, Home & Office, and Others. The product being featured is a "Mini GPS Blocker (with AC and Car Charger)". The price is listed as \$105.00 with "FREE SHIPPING". The product image shows a black rectangular device with a long antenna. Below the image are options to add to cart, email the page, add to wish list, and receive product updates. There is also a "Price Match" option and a social media share button for Digg, which shows 72 shares. A promotional banner on the right states "No payments 90 days" when spending \$50 or more with PayPal Pay Later.

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**No payments 90 days**  
when you spend \$50 or more with PayPal Pay Later. [Details](#)  
(USA Customers)

cheap gps blocker at a Chinese website

# *RFID 1/2*

- ◆ Transfer information over short distances
- ◆ Usage:
  - ◆ Parking tickets
  - ◆ Personal identification
  - ◆ Toll systems
  - ◆ Tracking
  - ◆ Time management systems
- ◆ Often hidden, pervasive
- ◆ Cheap reading devices (eg. in cell phones)
- ◆ Visually not detectable

## *RFID 2/2*

- ◆ High range active devices (Piezzo-electric shoes & active RFID)
- ◆ Worst case: 2006, British passports with RFID, hacked in 48 hours
- ◆ Protect yourself:
  - ◆ Destroy chip: screwdriver, hammer, microwave (device unusable => bad)
  - ◆ Shield chip: cover chip with aluminium thinfoil

# *Telephone*

- ◆ Since 1837
- ◆ Most connections still analogue
  - ◆ No encryption
  - ◆ Attach speaker to wire && eavesdrop
  - ◆ Cable length up to 8km. (8km insecurity)
- ◆ Early VOIP not encrypted
  - ◆ H323
  - ◆ Listen to it with VLC
- ◆ SIP is encrypted
- ◆ Mobile VOIP: traceability of the user

# Risk Analysis

technology	Usage (l, m, h)	Risk (l, m, h)
Ip-TV	Low (for now)	low
E-Mail	<b>high</b>	<b>high</b>
Wireless LAN	<b>high</b>	<b>high</b>
Bluetooth	high	medium
/ biometric ide	medium	medium
GPS	Medium	low
RFID	Medium	medium
Websites	<b>High</b>	<b>high</b>
telephones	high	medium



# *Personal Opinion*

- ◆ We are concerned about privacy issues
- ◆ In the wrong hands fatal
- ◆ If the KGB had these possibilities...
- ◆ Our advice:
  - ◆ Use only encrypted protocols
  - ◆ Tunnel unencrypted protocols
  - ◆ Never leave any evidence  
(It will be used against you.)
- ◆ “Big brother is watching you.”
  - ◆ Slogen is not made up. It is reality.

# *One Day Big Brother Diary*

Any questions?

**Thank you!**