Privacy in Cyber-Physical Systems and Critical Infrastructures

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Security is an issue in new application scenarios

Internet of Things **IoT** **S&P is already reality!**

– IoT is not just RFID!

Baby Monitor Hacking
[abc NEWS .Com]

It's hard to know exactly how big a problem this will be

Hacking the human SCADA
(***insulin pump***)
[Jerome Radcliffe, Black Hat 2011]

Security is an issue in new application scenarios

Cloud Computing

- Increasing accessing corporate data with mobile devices from the cloud
- Usual boundaries vanish!
- **Can cloud be secure?**

A few ways to reduce risks

- Who is accessing what?
- Limit data access on context
- Risk-based approach
- Extend security to the device
- Add intelligence to network protection
- Ability to see through the cloud

Security is an issue in new application scenarios

- **Mobile apps**

The size of the problem

- **88%** of SMBs support tablets or smart phones
- MMA accounts for **59%** of mobile malware
  - **32%** steal information
  - **15%** track user
  - **13%** send content
  - **8%** reconfigure device
- **12%** of Android applications are malicious
  - Malicious applications even in Google Play

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- **Mobile apps**

IT PROs Take Notice

- **25%** of IT pros believe their security solution are **not very or not at all effective at protecting** against MMAs
- **28%** of IT pros believe MMAs are **not a very big or not a threat at all** to their company
- **30%** of IT pros are **not very or not at all familiar** with MMAs
- **73%** of IT pros believe there will be more mobile threats to their network in the next **12 months**

It's a fact that…

A security infringement may translate into **privacy** and/or **safety** infringements with **social** and **business** consequences

Why should you care about security?

- Compliance to law
- Identify and manage risks
- Avoid legal costs
- Trust (of customers)
- Reputation
- Be competitive on the market

Who cares about security?

Often IT PROs don't care or believe security is an issue

If you care we might help you in

- Devising solutions
- Identifying problems…
- …preferably at design time

Our research interests

- Security in networked embedded systems (WSNs, IoTs,…)
- Secure Transactions (*-payments)
- Applied Cryptography
- Security & Privacy in Mobile Applications
- Security in Information Systems
- Computer forensics
- …

Our experience

EU, national and regional research projects

Collaboration with companies

Real forensics cases

Siemens, Ericsson, Selex, CATEC, THALES, Telecom Italia, Bassilichi S.p.A., IAMBOO s.r.l., Genesy s.r.l., RACIS (Arma dei Carabinieri),…

More about us

You may find more information here

http://www.iet.unipi.it/g.dini/research/index.html

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