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EUROSMART
The Voice of the Smart Security Industry

Security and privacy in the digital world
Solutions from the Smart Security Industry

Smart Embedded Security for the Internet of Things

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Executive Summary

➢ **Can we imagine our lives without surfing on the web or using our mobile phone?**

➢ **It is likely that the rapid rollout of Machine to Machine technologies will also change our lives in the near future, paving the way for the deployment of the Internet of Things**

➢ **As technologies can exceed consumers' expectations, new challenges are rising, and security and privacy issues are growing.**

➢ **Eurosmart has already spotted several major security vulnerabilities and serious privacy breaches with M2M and IoT technologies**

➢ **With more than 20 years of experience, our association is also in a position to provide useful recommendations to overcome those risks.**

Anticipating risks and vulnerabilities, rather than simply reacting to deviations of the system.
We are calling for action, now!

Introduction

- *A coffee machine that is able to order itself capsules…*
- *A diagnostic of your car that can be done while you are driving on your holidays…*
- *An eco-system, the so-called Smart Grid, helping us to optimise the use of energy…..*
- *A car sending an emergency call to a rescue centre without any human intervention…*

➢ **This is no longer science fiction, this is reality**

➢ **Behind this reality is technology known as Machine to Machine (M2M)**

➢ **Today, millions of machines are already exchanging data without human intervention**

➢ **Tomorrow, it will be not only machines, but also billions of objects that will directly interface with the digital word through the Internet of Things (IoT).**

> M2M and IoT technologies mean more convenience !
> Let's ensure that this development will not take place
> at the expense of security and privacy!

Security & Privacy issues

➢ **As more and more digital applications roll out, fraudsters and criminals are actively seeking ways of attacking systems.**

➢ **When this is related to objects used in our daily lives, those attacks can have huge effects, both for end users and for system operators.**

  ➢ Can we accept that someone takes the control of a nuclear plant through an electricity smart meter network?

  ➢ With a sophisticated M2M network, it will be easy to get information about our private life at home. Will end users accept to have their intimacy being disclosed so widely?

It is now becoming possible to endanger people, using internet to access network such as M2M
Power consumption measurement every 15 minutes can be misused for profiling,
a violation of all privacy rules.

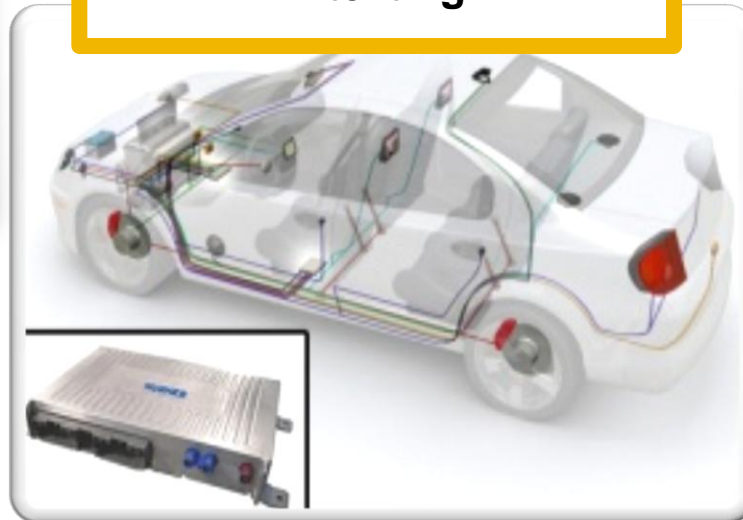# Connected cars
Safety at stake

Field outlook

Famous car maker have been hacked this summer using war texting

War texting attacks

– OPEN cars

– START car engine

– ACCESS to vital safety organ of a car

Connected Cars

CYBER CRIMINALITY

SYSTEM INTRUSION

PERSONAL DATA PRIVACY

Mobile health and healthcare information system

Medical devices
- **Personal**
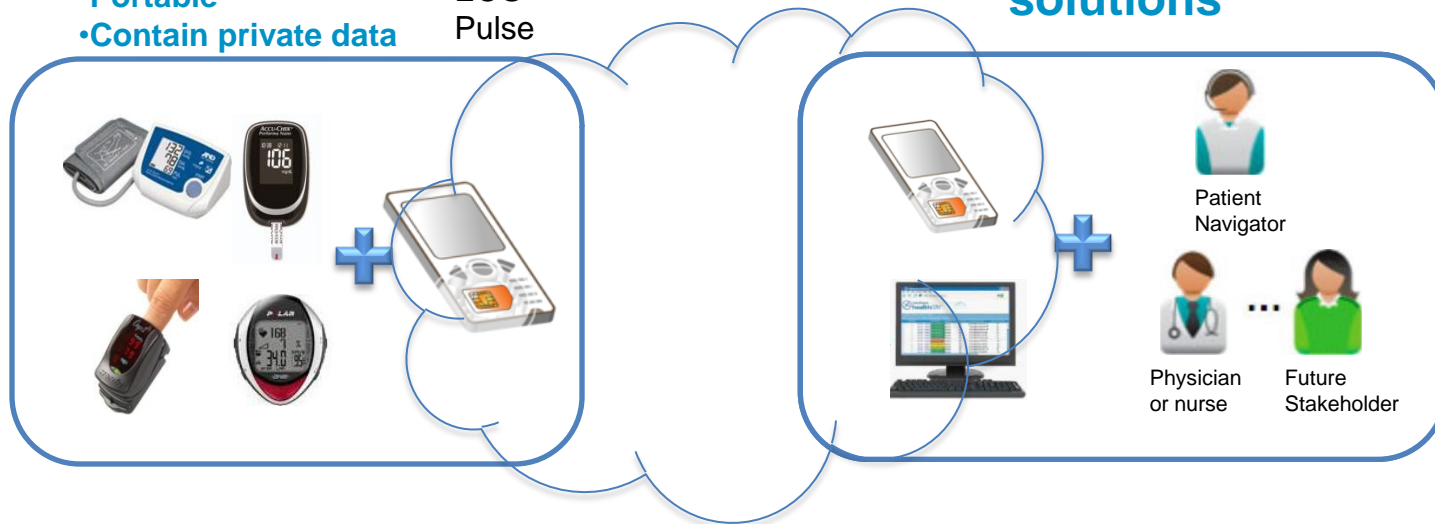- **Portable**
- **Contain private data**

Diabet
ECG
Pulse

Remote monitoring solutions

Patient Navigator

Physician or nurse

Future Stakeholder
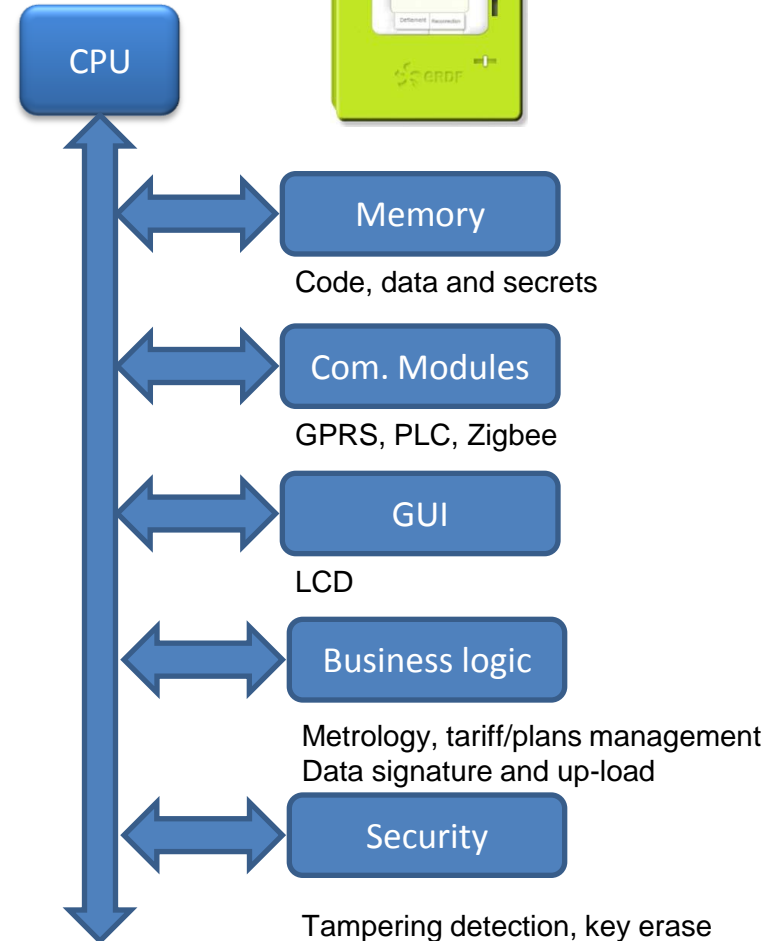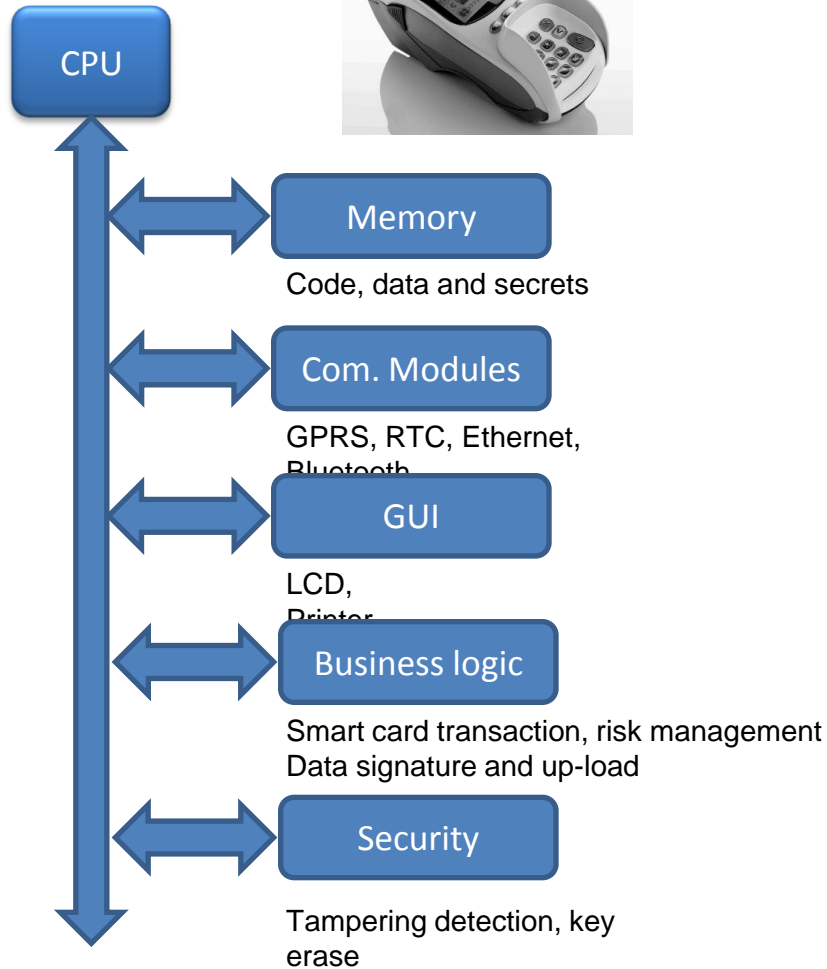
Mobile health

FRAUD

STOLEN IDENTITY

PERSONAL DATA PRIVACY

1. Secure capture
2. Secure transmission : Security of OTA exchanges & Integrity of data
3. Secure storage : High availability of OTA infrastructure
4. Secure access : Strong Authentication of patients and medical workers

Recommendation

➢ **Supporting research in enhanced security technologies**
To consider more European R&D funding

➢ **Deeper analysing security requirements**
European Commission and the ENISA (European Network and Information Security Agency) to encourage Member States in this way

➢ **Assuring security with certifications**
To further develop the certification requirements of the Common Criteria

➢ **Promoting the integration of smart devices**
Smart devices integrated into the M2M and IoT architecture will dramatically enhance security of the whole system.

> **Our industry has the technologies to solve these challenges**
> **It is equally important that EU and national authorities take initiatives to protect citizens and enterprises against increasing risks on security and privacy**

…like Point of Sale terminal

CPU

Memory

Code, data and secrets

Com. Modules

GPRS, RTC, Ethernet, Bluetooth

GUI

LCD, Printer

Business logic

Smart card transaction, risk management
Data signature and up-load

Security

Tampering detection, key erase

CPU

Memory

Code, data and secrets

Com. Modules

GPRS, PLC, Zigbee

GUI

LCD

Business logic

Metrology, tariff/plans management
Data signature and up-load

Security

Tampering detection, key erase

Benefits

➤ **The exciting development of digital technologies will enable more features and more convenience, making our lives easier, simpler and safer.**

➤ **There is also an expectation from consumers and citizens to facilitate their interaction with this digital world by providing:**

- A good balance between convenience and security;

- More information and guarantees about privacy;

- More standardisation.

➤ **M2M and IoT technologies will save human lives, help companies to be more competitive, open new business opportunities and will make our world safer and simpler.**

> **These technologies will be fully accepted by consumers, citizens and enterprises if they are giving more assurance that these benefits will not come at the cost of their security and privacy.**

Conclusion

➤ **There will be more security challenges when deploying M2M and IoT technologies compared to human to machine technologies, such as payment with a credit card**

➤ **Our industry has the technologies to solve these challenges !**

➤ **It is equally important that EU and national authorities take initiatives to protect citizens and enterprises against increasing risks on security and privacy**

➤ **The Smart Security Industry has more than 20 years' experience in creating an equilibrium between convenience, privacy and security.**

➤ **It can help authorities in finding where the right balance is and how to implement the right
technologies including security technologies to protect people and data**

We have to act now !

THANK YOU FOR YOUR ATTENTION

ANY QUESTION ?

www.eurosmart.com