WE MAKE METERING SMART
Approaches for Smart Metering privacy and security in Europe

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ETSI M2M Workshop 2013
6 November, Mandelieu
Agenda

- Facts and Fears about Privacy and Security
- How to define the right requirements
- European initiatives
Fears

BE PART OF A NATIONAL DAY OF ACTION!

SAY NO! TO “SMART” METERS

October 4th, 2012

Visit: http://ActionDayToStopSmartMeters.org

Public Resistance
Since ca. 2009
Smart Meter Security in the news

Smart Metering & Smart Grid security issues receive high amount of public attention.

The Real Story of Stuxnet
How Kaspersky Lab tracked down the malware that stymied Iran’s nuclear-fuel enrichment program

Smart-Grid Control Software Maker Hacked
Posted by timothy on Thursday September 27, 2012 @05:52PM from the 21-scadoo dept.

Smart meter hacking tool released

**Summary:** Terminator, an open-source tool designed to assess the security of smart meters, has been released.
The challenge is to find the right level (and investment)

Overreaction? Underestimation?
Agenda

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- How to define the right requirements
- European initiatives
SM-CG architecture

Metering End Device (E / G W H)
- MID requirements
  - Metrology
  - Display
  - Additional functions

Meter communication functions

Home Automation End Device
- Simple external consumer display
- Home automation functions
- HA communication functions

Local Network Access Point (LNAP)
- Field zone
  - G1
  - C
  - M
  - WAN
  - NN
  - LN

Neighbourhood Network Access Point (NNAP)
- Station zone
  - G1
  - G2
  - C
  - C

AMI Head End System
- Operation zone
  - H1
  - L
  - H2
  - H3

Increasing impact
From concerns and objectives to structured requirements

1. Definition of Security Target (from the SM-CG ref.arch.)
2. Risk Analysis (per use case – evtl. per stakeholder ?)
3. Security Requirements
4. Implementation and measures (e.g. Encryption)
5. Test and Certification (e.g, against assurance levels)
6. Maintenance (e.g. Gateway Admin Processes)
Agenda

- Facts and Fears about Privacy and Security
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Smart Grids Task Force of the European Commission

Task Force Smart Grids

Expert Group 1: Overlooks standardization mandates (SM-CG, SG-CG)

Expert Group 2: Regulatory recommendations for data safety, data handling and data protection
Expert Group 1

- **SM-CG (M441) – Interoperability for Smart Metering**
  - Results so far:
    - Reference Architecture
    - Use Cases
    - Technical requirements
    - Set of standards
  - Results 2013
    - Reference set of P&S requirements
    - Comparison of certification methods

- **SG-CG (M490) – Interoperability for Smart Grids**
  - Results so far:
    - First Set of Standards
    - Reference Architecture
    - Maintenance process
    - Use Cases
    - Security Risk Analysis approach: how to select P&S requirements (EG2 focusses on the approach for Privacy)
  - Results 2013/2014
    - Improvements
    - Interoperability testing procedures
The SM-CG reference architecture

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Simple external consumer display

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Local Network Access Point (LNAP)
- Meter communication functions

Neighbourhood Network Access Point (NNAP)
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Additional functions

Simple external consumer display

Display

Metrology

Simple external consumer display

Simple external consumer display

Home automation functions

AMI Head End System
Combined M2M – SMCG Architecture
### M2M Service Capabilities

<table>
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<tr>
<th>Standardization framework</th>
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<td><strong>Comm. profiles</strong></td>
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<td>Data model and smart identification</td>
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<td>Application Layer</td>
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<td>Lower layer protocols</td>
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- Application Enablement
- Generic Communication
- Reachability, Addressing and Repository
- Security
- History and Data Retention
- Transaction Management
- Communication Selection
- Remote Entity Management
Thank you for your attention

For more information

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