M.Sc.-Thesis: Steganography in Smart Grids

Telecooperation Lab

TECHNISCHE UNIVERSITÄT DARMSTADT

Motivation

The power grids are becoming smarter. An EU directive aims to have 80% of households equipped with smart meters by 2020 in Europe.

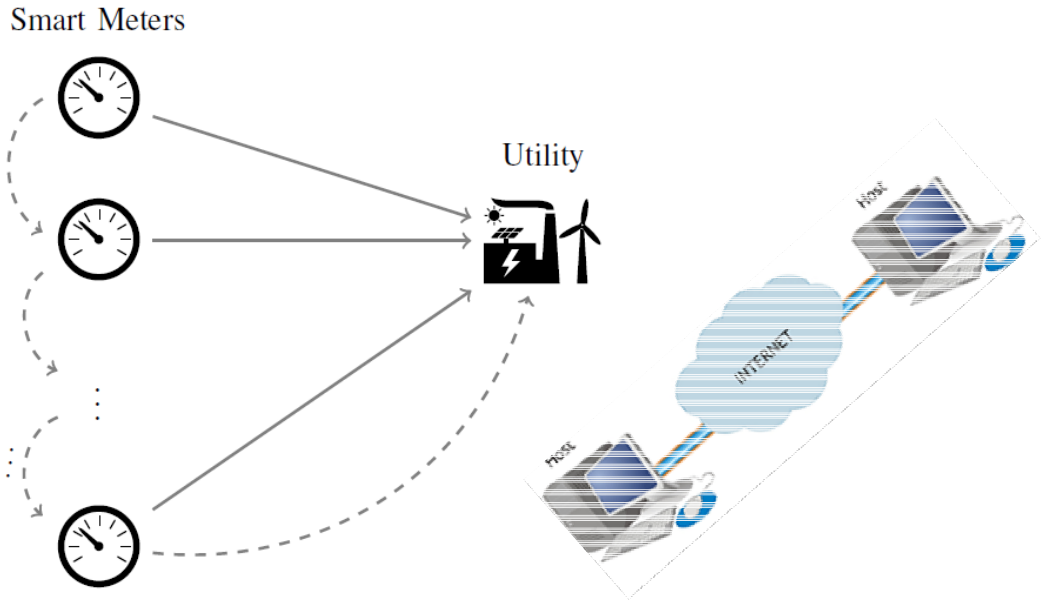
Smart meters are power meters that can send the measured consumption using internet protocol. They are computers that can use the communication channel to cover a real message. Steganography is the art-science of hide messages. In opposite to cryptography where the adversary knows whether there is communication or not.

Goals

The main goal of this work is to analyze regions of redundancy to insert a message and implement a prototype using real smart meters.
The student will research on communication protocols used in Smart Grids and pattern of consumption.

Abstract

Steganography is a security technique as old as cryptography. Nowadays, it is more used for army forces and terrorist groups. Therefore, the scientific community should understand the schemes to help the army force to detect hided messages and prevent terrorist attacks.



Type

Analysis	■■■■■
Empiricism	■■■□□
Implementation	■■■■□
Literature Research	■■□□□

Vision

Steganography has been used in many medias: text, images, audio, and even in DNA. However, steganography in Smart Grids is a new topic.
The student will be in contact with new technologies that will have strong impact around the world.

Fábio Borges / Sheikh M. Habib | Telekooperation | Raum: S2|02 A 121 | Tel: (6151)16 - 2259| {fabio.borges, sheikh.habib}@cased.de

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