M.Sc.-Thesis: Performance Analysis of Privacy-Preserving Protocols for Smart Grids

Telecooperation Lab

TECHNISCHE UNIVERSITÄT DARMSTADT

Motivation

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. Such measurements can reveal information about the user's private life, e.g., which movie is running on one's TV.

Protocols have been proposed to preserve users' privacy. In this thesis, we want to analyze privacy-preserving protocols for Smart Grids regarding to their processing time.

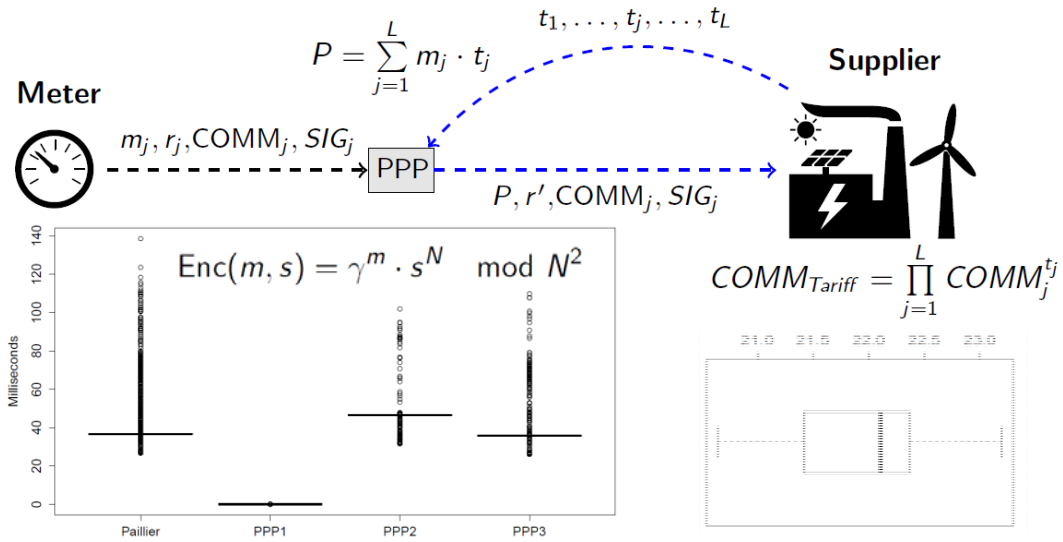
Goals

Smart Grid operators aim to receive information in real time collected by millions of smart meters, but the they should have low prices.
The main goal is to implement the protocols and collect the processing time in millisecond when they run in real meters.

Abstract

By 2020, 80% of households in Europe will come under Smart Grid infrastructure. Smart Grids use network communication to improve the efficiency of the power grid and generate new services like e-car power stations.

You have to conduct an in-depth processing time analysis of existing privacy-preserving protocols for Smart Grids.



Type

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

Vision

Privacy-preserving protocols with quick processing time are desirable for Smart Grid scenarios.

The literature contains many proposed protocols with their theoretical evaluation.

This work will make a fundamental contribution implementing and comparing the protocols regarding to their processing time.

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