Development of Orphan Meter Detection Techniques

Principal Investigator: Dr. Yimin Zhang

Summary:

Cellnet+Hunt Advanced Metering Infrastructure (AMI) uses low-power radio transmitters, integrated into the customers' utility meters, to send out customer energy consumption data. This transmitter is programmed to send out a short burst of data roughly every five minutes, which is captured by at least one of several data concentrator or repeaters distributed within a certain radius of the meter. Each burst contains a meter ID and a utility consumption reading. The system has a problem with a large number of "orphan" meters. These are meters that are sending an ID and energy reading, but whose allocation is not registered in Cellnet+Hunt's customer records. Until the meter is linked with an address, the service provider does know who is using the power and, as a result, cannot collect the associated revenue. The proposed work is to design portable receivers, each using an antenna array to obtain a bearing on each orphan meter that it receives a signal from.