

Combating Power Theft initiative

SARPA Convention, 2015



PAGEMARK
AFRICA

traceability
solutions



Overview

- Cost of electricity theft in South Africa
- Methods of stealing electricity
- Pelta™ Technology Overview
- Tamper evident labels and security seals application
- Field implementation
- Voucher and CDUs application

Cost of Electricity Theft in SA

- Electricity theft costs South Africa over R4 billion per annum?
- It contributes to power outages – R?
- It threatens the lives of South Africans due to the instability of power in hospitals
- Threatens the viability of businesses and by consequence, jobs of South Africans due to the instability of power

Methods of Stealing Electricity

- Tampering and bypassing of meters
- Making illegal connections
- Stealing Credit Disp. Units -CDUs
- Selling stolen electricity vouchers



Pelta™ Technology Overview

Standard Data Matrix Code



Overt Message

Pelta Code



Overt Message



Covert Message



- ◆ The data in the 2nd layer (covert) of a Pelta™ code was designed for authentication purposes
- ◆ The covert information is encrypted via a 128-bit key and is impossible for counterfeiters to create or read
- ◆ Codes can be read using standard QR code reader application installed on a smartphone

Pelta™ Technology Overview

Serialization



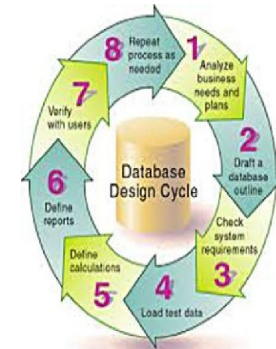
1234567....



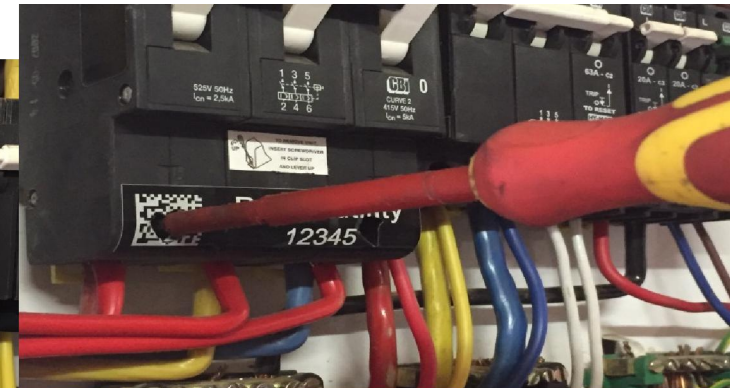
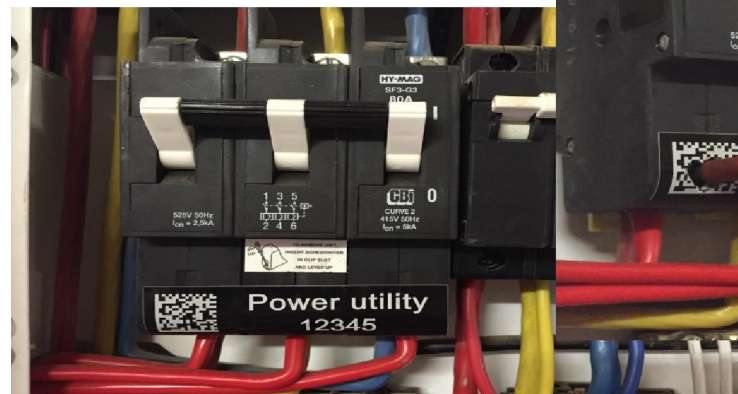
Database Web



Track & Trace Validation/Auth. Geolocation Accountability



Tamper Evident Labels & Security Seals Application and DPM



kWh Meter



Meter Seal

Authentication



Tamper Evident Labels & Security Seals Application

- Pelta™ code marked on security seals, tamper evident labels, documents, receipts, products, etc. in order to enable:
 - Inspectors to authenticate the meter, seals and tamper evident labels
 - Inspectors to see information including power usage and the last payment due/made
 - Inspectors to update information
 - Customers to access latest payment due

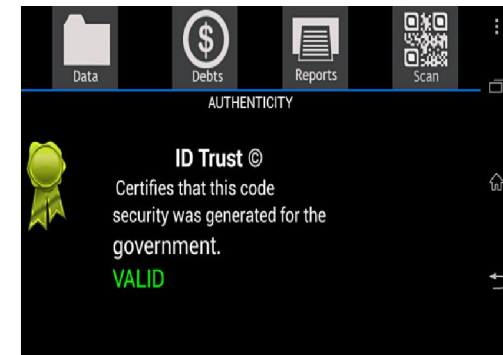
Field Implementation



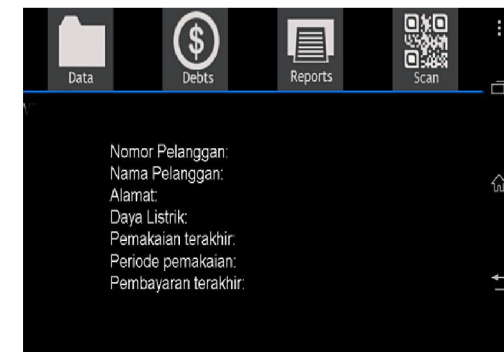
Reading Pelta Code on the Meter Seal or Meter



Validation of the kWH Meter (Valid or Not)



Validation of Customer Database including Power Usage & the Latest Payment



Stolen Vouchers & CDUs Application

- Each voucher and CDU ***marked*** with a Pelta™ code
- If stolen, the vouchers are ***flagged on the Track and Trace platform***
- Power Utility may deactivate the stolen vouchers
- Customers are able to scan the code on the voucher to ***verify its authenticity***
- ***Geolocation*** enables the Power Utility and Law enforcement to conduct further investigation.
- ***Reward and loyalty programs*** can be implemented to encourage participation

Case Study

- North America – 5 provinces adopted solution.
- Increased Compliance, Administration & Accountability.
- Additional increases in security, transparency of collections, validity and quality of service.
- Reduction of corruption, disruptions and lack of control.
Collection of \$1.5B USD in previously uncollected funds.
- Rolled out versions of the solutions to DMV, Government Documents, Certificates & Registration documents (Birth, Marriage, Death, etc.)

For more information, please contact
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Thank You

