Prevention of electric power theft initiative. Pelta administration and control.
Credibility – Kyle Parker

- 25 years experience in Marking, Identification, Traceability & Authentication.
- Member of the Small Arms & Light Weapons drafting committee for the United Nations.
- Consultant / advisor to UN, SAPS, SADC, SANDF, Private Security, Large Multinationals to mention a few.
- Regularly publish articles on areas of track & trace for Engineering News, Servamus, Food, Pharma & Cosmetics Reviews, Road Ahead, Metalworking News & others.
- Member of many associations and organisations for business, revenue & brand protection, crime prevention, etc.
- BOTY and other awards over the years.
- Largest DPM Marking & scanning project in the world to date.
- Organised Crime Fighter.
- Always staying abreast of trends and technologies to support core values.
Case Study – Mexico
Theft prevention initiative

- Mexico Constitution Amendment dated Des. 20, 2013, stipulated privatization of the State Electricity Company /CFE (Comisión Federal de Electricidad) effective 2014.
- CFE supplies electricity to 35M customers, to fulfil 95% demand of 123M population in 31 states.
- Government covers 42% of company’s loss.
- The electricity cost that keeps on increasing has created difficulties for CFE to decrease electricity loss during the supply including pilferage.
## Electric Losses YoY

<table>
<thead>
<tr>
<th>Country</th>
<th>Losses (% of output)</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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</thead>
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<td>Australia</td>
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<tr>
<td>USA</td>
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</tbody>
</table>

Methods of Stealing Electricity

- Tampering and bypassing of meters
- Making illegal connections
- Stealing Credit Dispensing Units - CDUs
- Selling stolen electricity vouchers
Pagemark and a partner started the Prevention of Electric Power Theft initiative using Pelta Code through kWh Meter authentication and its Track & Trace application.

**Solution:**

1. Create **Pelta™ Code Sticker** to be placed on the kWh Meters or Meter Seals. Soon to be DPM.

2. Inspectors use their **smartphones** (installed with Pelta Reader) to read the Pelta Code on the Meter / Seal.

3. The **1st Layer information** (overt) will validate the meter number, whether it matches with the Database.
3. The 2nd Layer (covert) will allow the Inspector to see information from the data base and will be able to update the information using the mobile device. Information will be updated in the data base when the inspector closes the application on the device.

4. Being overt, the 1st Layer information can be accessed by the Customers using their own smartphone and common QR Code Reader. The latest payment due can be read through connection with the Company’s website.
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.
Validation of the kWh Meter (Valid or Not)

Validation of Customer Database including Power Usage & the Latest Payment
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
Inspectors update information, authenticate items, etc.
Authentication of:

- Meters and circuit breakers
- Security seals & tamper evident labels
Authentication of:

- Documents and certificates
- Vouchers and receipts
Authentication of:

- Location – Ring fencing, diversion, counterfeit, stolen, timelines, etc.
Case Study Results

- 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 Kyle Parker on kyle@tracesol.co.za

Thank You