

ElectronVibe Case Study Series

DISTRIBUTION TRANSFORMER FAULT MONITORING PILOT

WITH TEKUNCORKED AND A UTILITY IN DELHI



ABOUT TEKUNCORKED

TekUncorked is a cloud platform, that provides realtime breakdown alerts , fault localization and forecasts for the Distribution Grid Infrastructure.

SERVICES

TekUncorked's solution includes:

- Its LVIoT platform, which makes the Electricity Distribution Grid smart by checking health of grid infrastructure in real time.
- Monitoring of key grid assets like Distribution Transformer, Feeder Pillar, LT ACBs, detecting potential risks or threats to electricity distribution and alerting the controllers to mitigate potential grid breakdowns.

VALUE PROPOSITION

TekUncorked's solution would allow discoms to effectively manage grid assets through:

- Real-Time Actionable Alerts
- Theft Localization & Pilferage prevention.
- Predictive LV Grid Maintenance
- Eliminate Outage & Power Leakage
- Asset Failure Prediction
- Track Asset Degradation
- Asset end-of-life forecasting
- Forecasting future demand based on asset user data
- Benchmarking of assets
- Design of optimized and sustainable future grids



Founded in 2019
Founders: M. Vashist
R. Sethi, R. Monga



Domain
Safety



Program Winner
ElectronVibe 2021



Headquartered in
Gurugram, Haryana



Website
www.tekuncorked.com

THE PILOT

PILOT IMPACT

1
Distribution Transformer connected within Delhi Utility's network



Rs. 70,000
Average savings per year per DT with TekUncorked's solution



Rs. 112 Cr
in increased profit for Delhi Utility per year if TekUncorked's solution is applied across its entire network



GREATER IMPACT for Delhi

Approx.
50,000
Distribution Transformers in Delhi



Approx.
350 Cr
Annual Savings for Delhi utilities



- Delhi (510 sq. km)
- 12.6 million consumers
- Peak Demand: 2069 MW

CHALLENGES

- Traditionally service complaints are sent directly to the lineman. Time is taken to update isolate the issue across the distribution network and fix.
- The utility was facing huge fines and revenue losses due to service disruptions and large service restoration times. The unmanned sub-stations are distributed over large areas and cost dynamics do not justify something like SCADA for monitoring those sub-stations.

SOLUTIONS

- TekUncorked deployed its LVIoT Connected Edge solution at one site.
- The Remote Commissioning App was used for configuration, commissioning and live diagnostics.
- Performance Dashboard provided trends and forecasts about risks and health of the LT Grid infrastructure and allowed remote intervention.
- Alert Services would notify ground staff on events requiring immediate action.

OUTCOMES

The results after few months of commissioning of TekUncorked pilot are shown below:

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|---|---|---|
| <p>1 TekUncorked deployed LVIoT Connected Edge at one site. Within three months the Utility was able to avert attempts to theft and experienced a significant reduction in time taken to detect and repair faults.</p> | <p>2 LVIoT helped the Utility in accurately baselining and benchmarking outage, load imbalance and other related losses for the Distribution Transformer it was connected to.</p> | <p>3 Nearly 100 remote DTR sites were brought on LVIoT Platform to do a benchmark study.</p> |
| <p>4 Immediate saving were achieved through the TekUncorked system by identifying DT copper theft, Oil Theft & Leakage, Productivity Improvement, Outage Alerts, Fault Localization etc.</p> | <p>5 The Tekuncorked system over a period of time led to performance driven savings through SAIDI, SAIFI improvements, crisis management, asset maintenance, reduced time to repair, power quality</p> | |

As a result of the pilot, one commercial trial order was delivered in June 2021