



TATA POWER-DDL

TATA POWER DELHI DISTRIBUTION LIMITED

A Tata Power and Delhi Government Joint Venture

Efficient & Safer Utility GIS at Tata Power DDL

Dhruba Banerjee – HOD (GIS & Energy Audit)

with you *Non-Stop*



Excellence through TQM...

ABOUT TATA POWER DELHI DISTRIBUTION LIMITED

“To be the most trusted and admired provider of reliable, competitive power and services, and be the company of choice for all stakeholders”

TATA POWER – DDL IS CERTIFIED WITH				
ISO 9001:2008	ISO (EMS) 14001:2004	OHSAS 18001:2007	ISO (ISMS) 27001:2005	SA 8000 : 2008

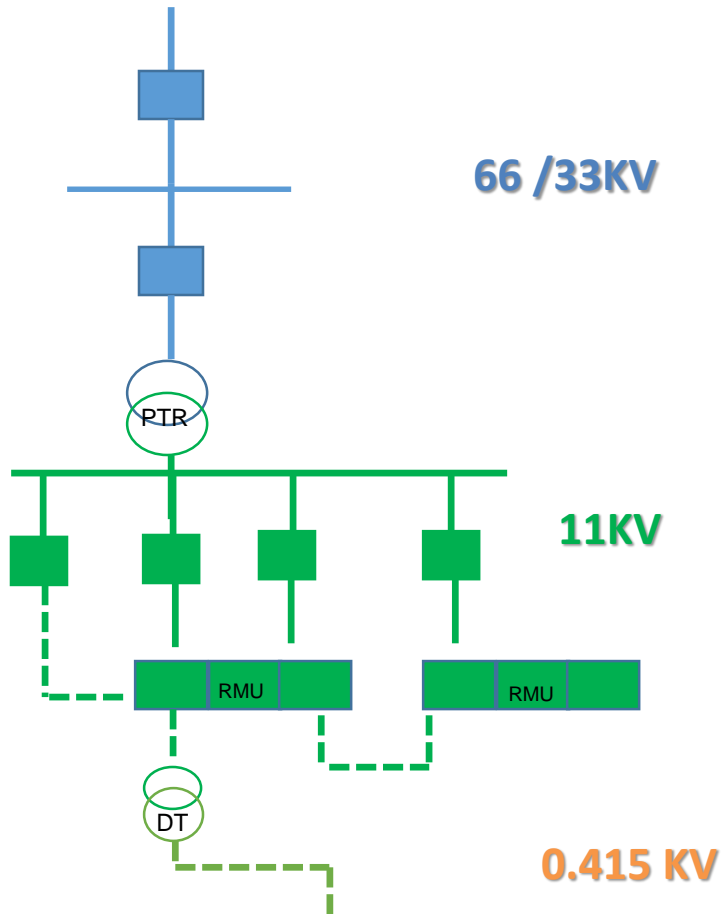


51:49 Joint Venture
of The Tata Power Company Limited
(Tata Power)
and
the Government of Delhi
Formed on 1st July 2002
in



Foundation for a smarter grid

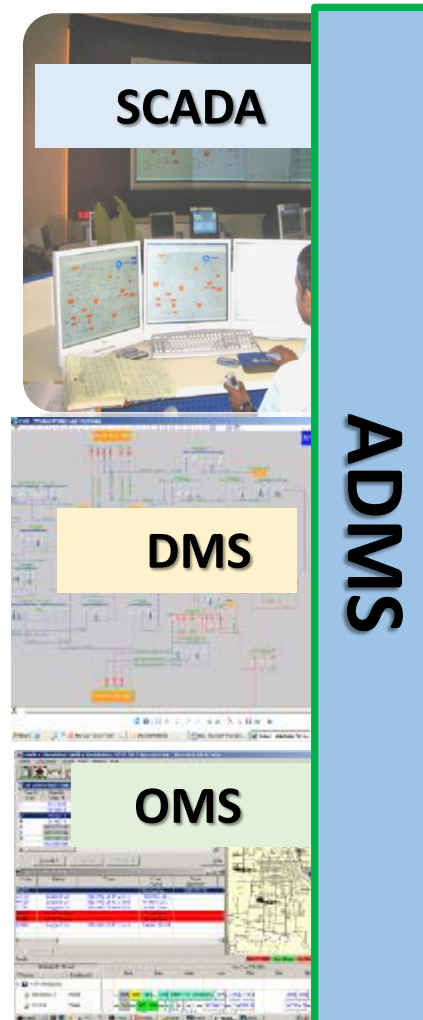
Network Hierarchy



Network terminology



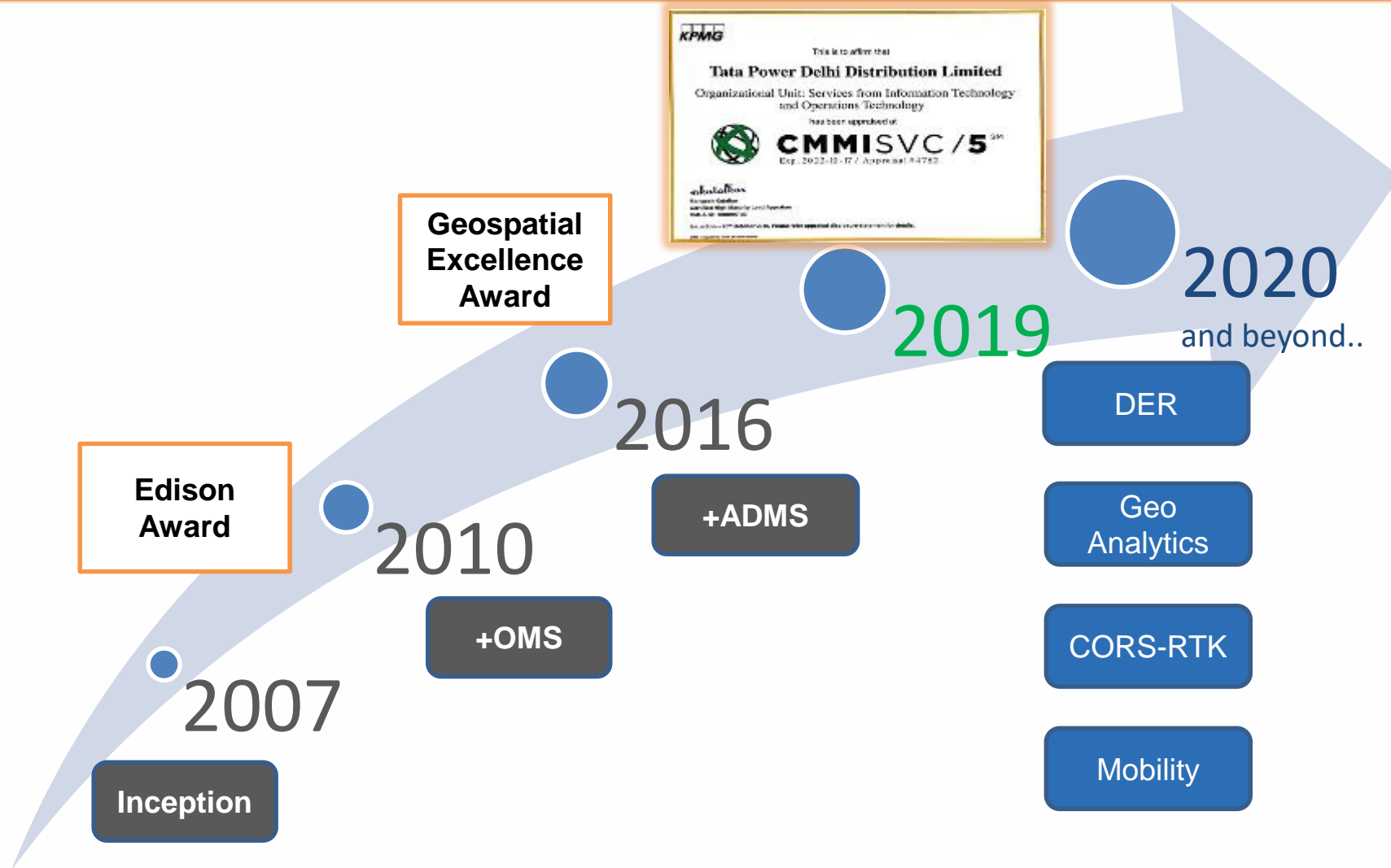
Technology



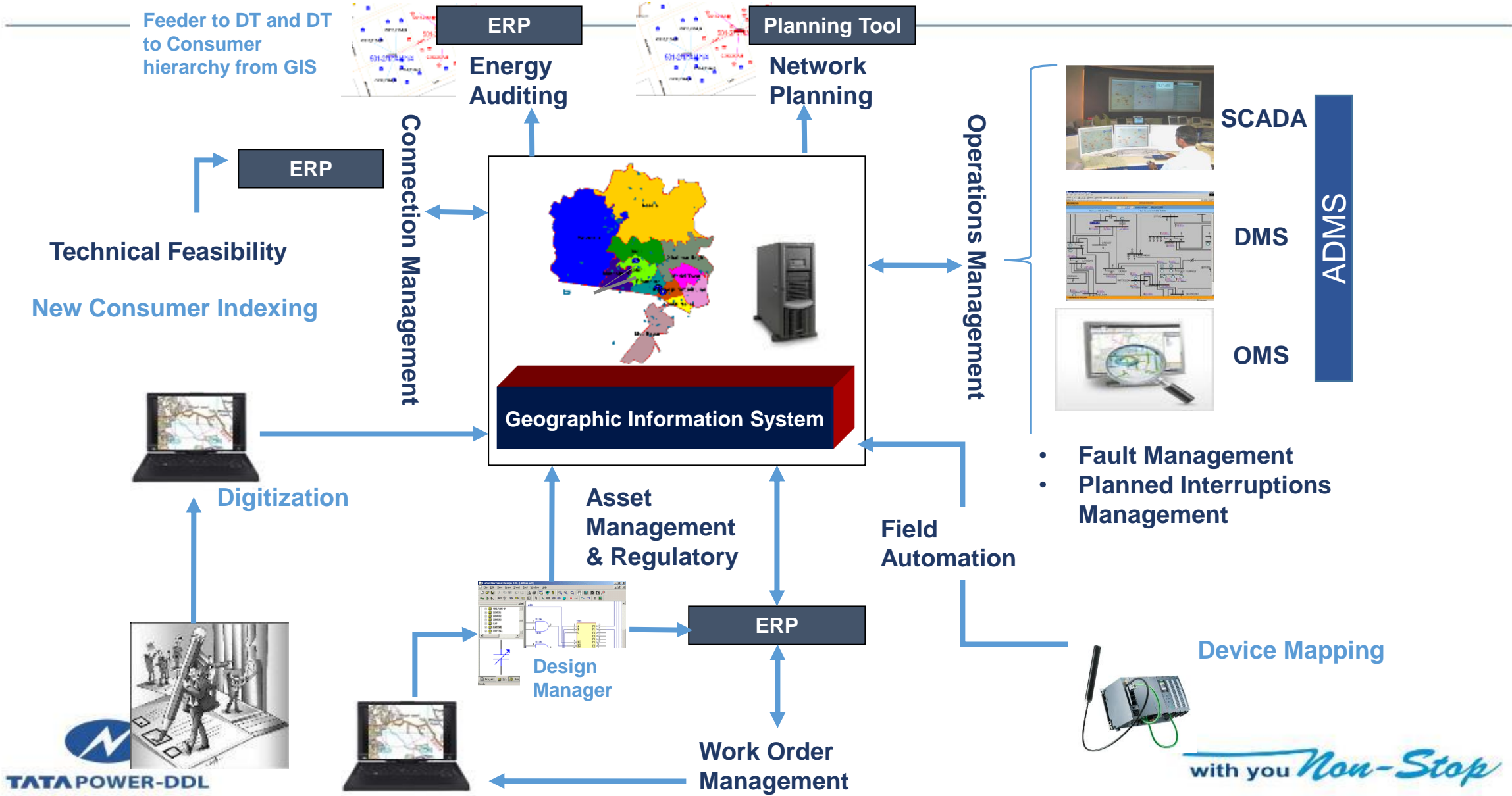
Geographic Information System

Communication Network

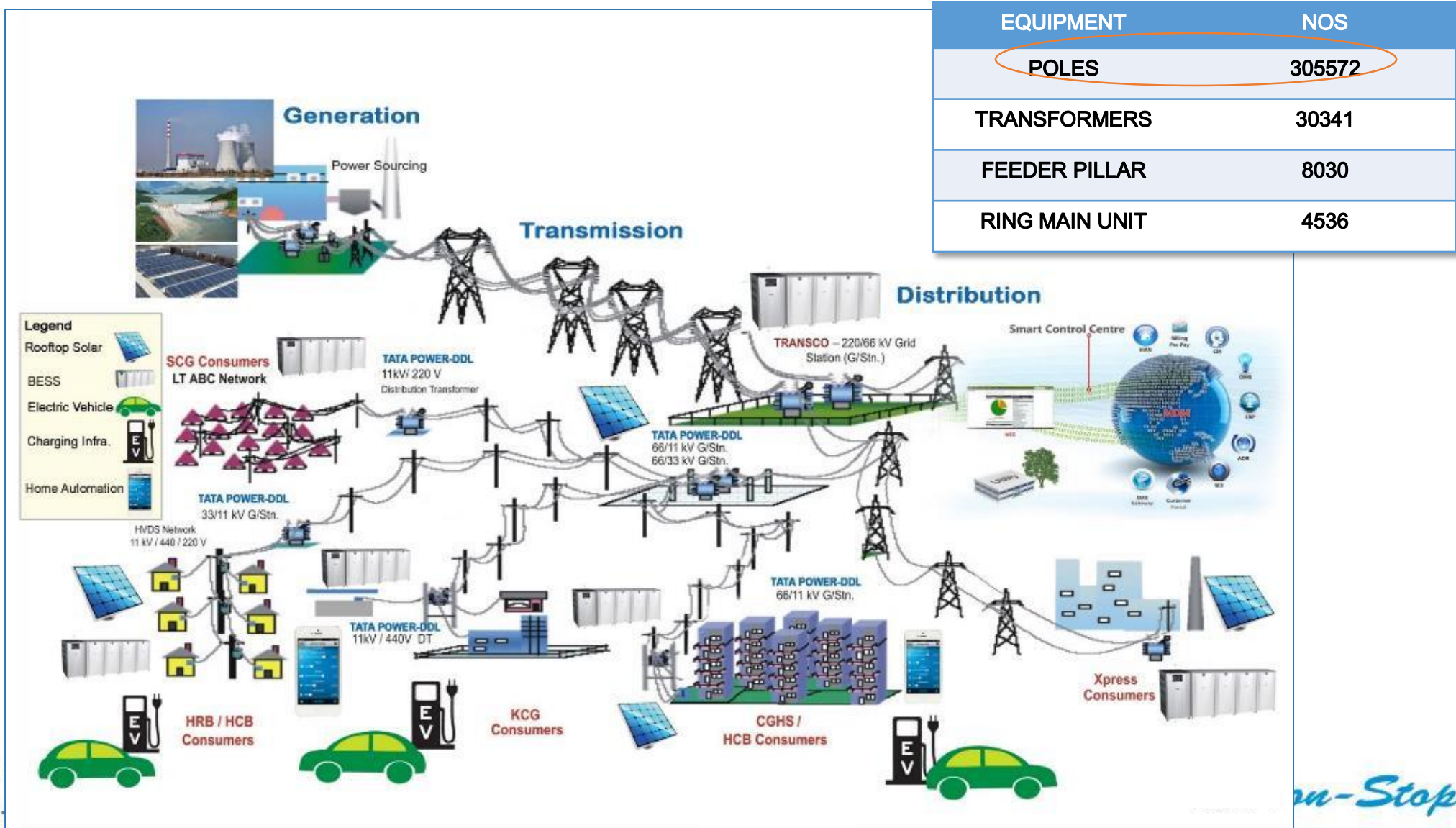
GIS Journey of Tata Power-DDL



GIS – Integration Landscape



Tata Power DDL – Distribution Network Elements



EQUIPMENT	NOS
POLES	305572
TRANSFORMERS	30341
FEEDER PILLAR	8030
RING MAIN UNIT	4536

Major Occupational Risk – Distribution Utility



Fall From height



Electrocution



Soil collapse during
excavation



Crushed while Material
handling



Road Accidents

Demographic & Societal Challenges



Narrow Lanes (222 JJ slums)



High consumer density



Encroachment of Right of
way



Network elements existing
on road



Increase in road heights



Initial Stage



Consumer Complaint through Call Centre



Outage Management System (OMS)

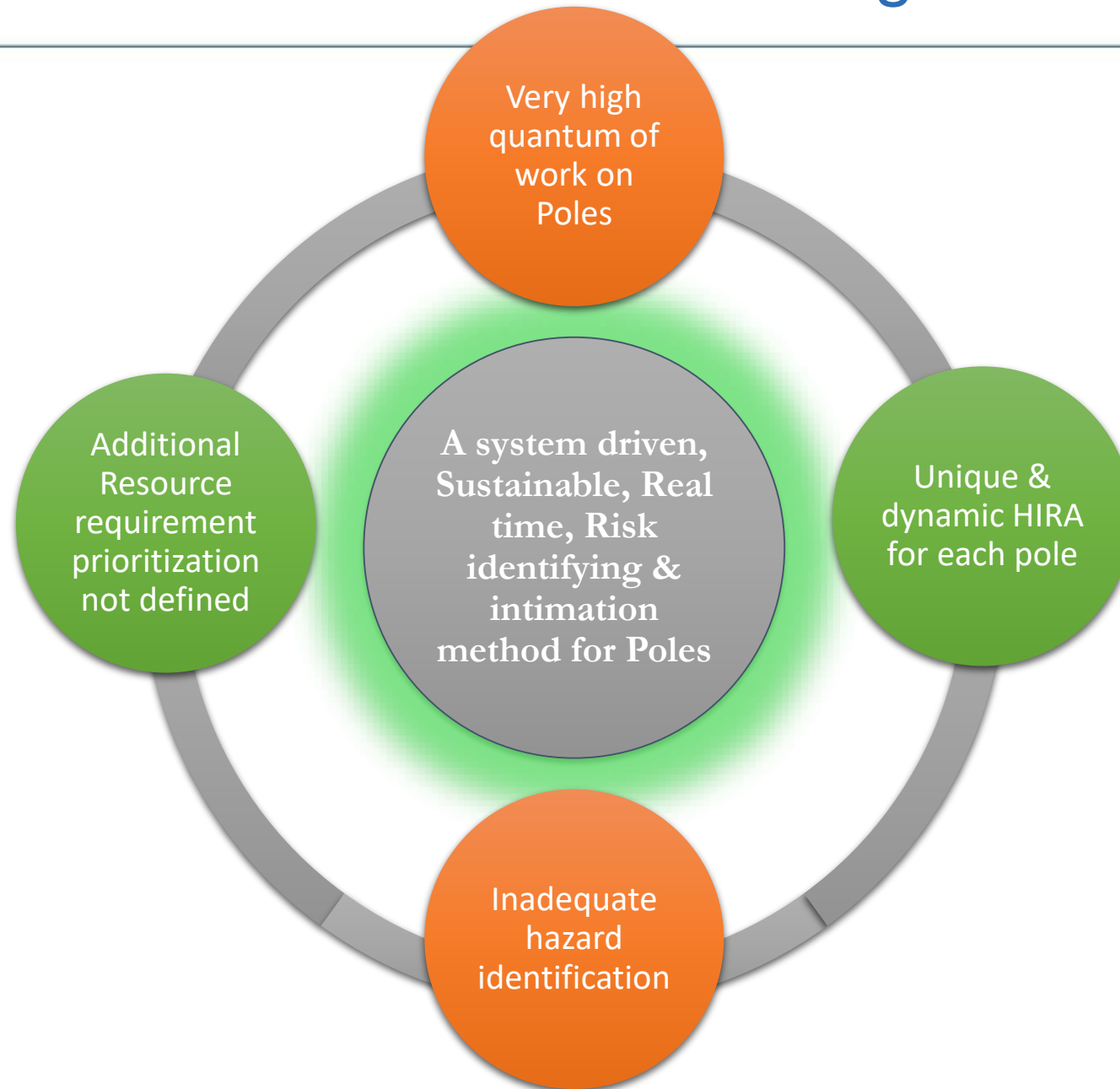
Outage ID	Outage Type	Outage Status	Outage Location	Outage Description	Outage Category
100001	Outage	1	Delhi	Power Outage	Outage
100002	Outage	1	Delhi	Power Outage	Outage
100003	Outage	1	Delhi	Power Outage	Outage
100004	Outage	1	Delhi	Power Outage	Outage
100005	Outage	1	Delhi	Power Outage	Outage
100006	Outage	1	Delhi	Power Outage	Outage
100007	Outage	1	Delhi	Power Outage	Outage
100008	Outage	1	Delhi	Power Outage	Outage

OMS Screen to Telephone Operator



Lineman attending complaint (Self Supervised)

Problem statement and solution envisaged



Hazardous conditions on Poles

Network Attributes



≥ 30 connections



Composite Network

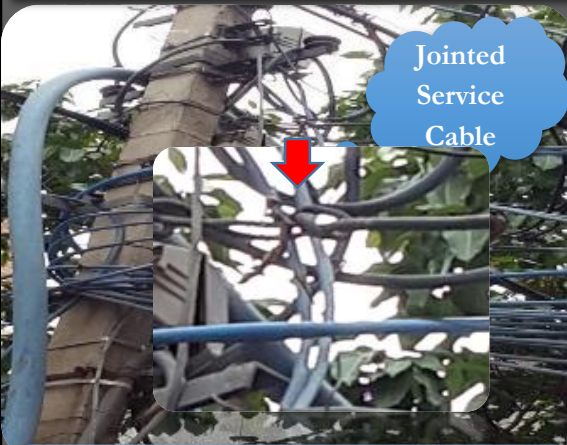


>1 source



≥ 4 feeders

Physical Attributes



Joint within 3 ft of pole



Encroached Pole



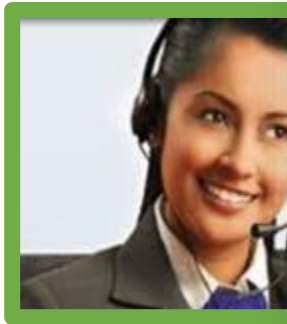
Crack in Pole

Stage 1

GIS



Telephone Operator informs Engineer I/C if complaint is from Unsafe Pole



Consumer Complaint through Call Center

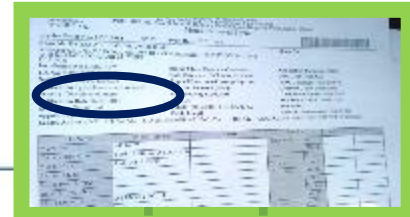
Complaint (Self-Reported)



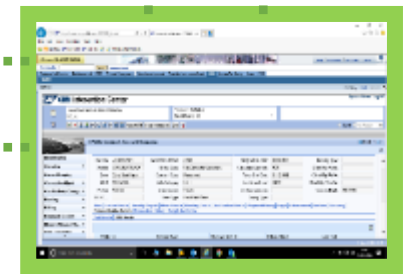
Stage 2



GIS



Metering & Other Protocols



CRM

Telephone Operator informs Engineer I/C if complaint is from Unsafe Pole



Consumer Complaint through Call Centre



Outage Management System (OMS)



OMS Screen to Telephone Operator



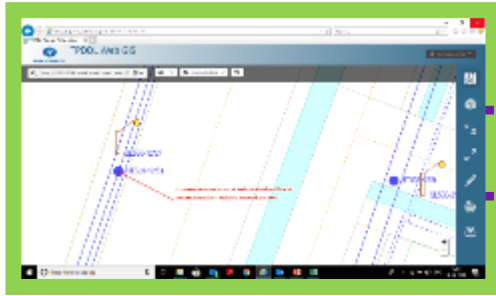
Lineman attending complaint (Self Supervised)



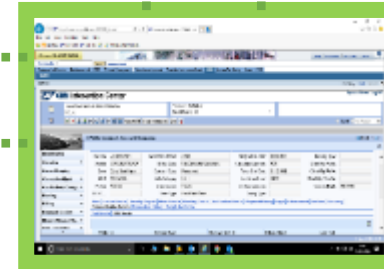
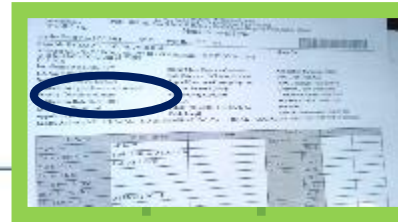
Stage 3

Metering & Other Protocols

Telephone Operator informs Engineer I/C if complaint is from Unsafe Pole



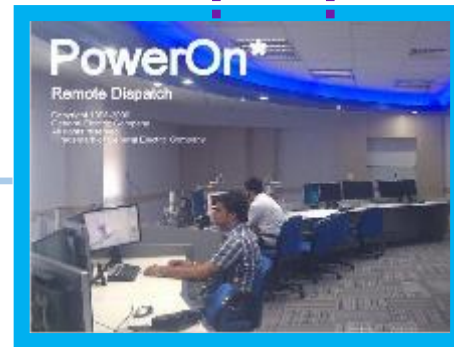
GIS



CRM



Consumer Complaint through Call Centre



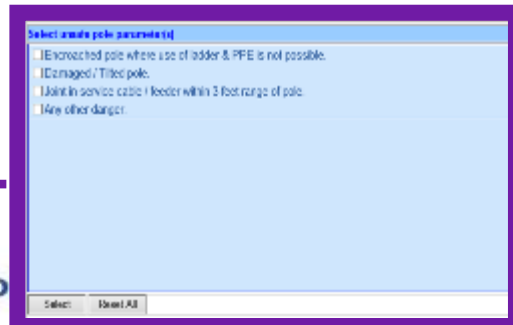
Outage Management System (OMS)



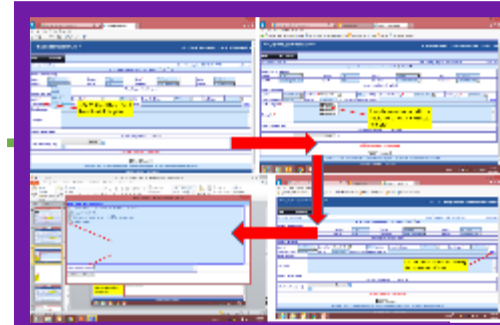
OMS Screen to Telephone Operator



Lineman attending complaint (Self Supervised)



New Unsafe Pole Section in Safety Portal

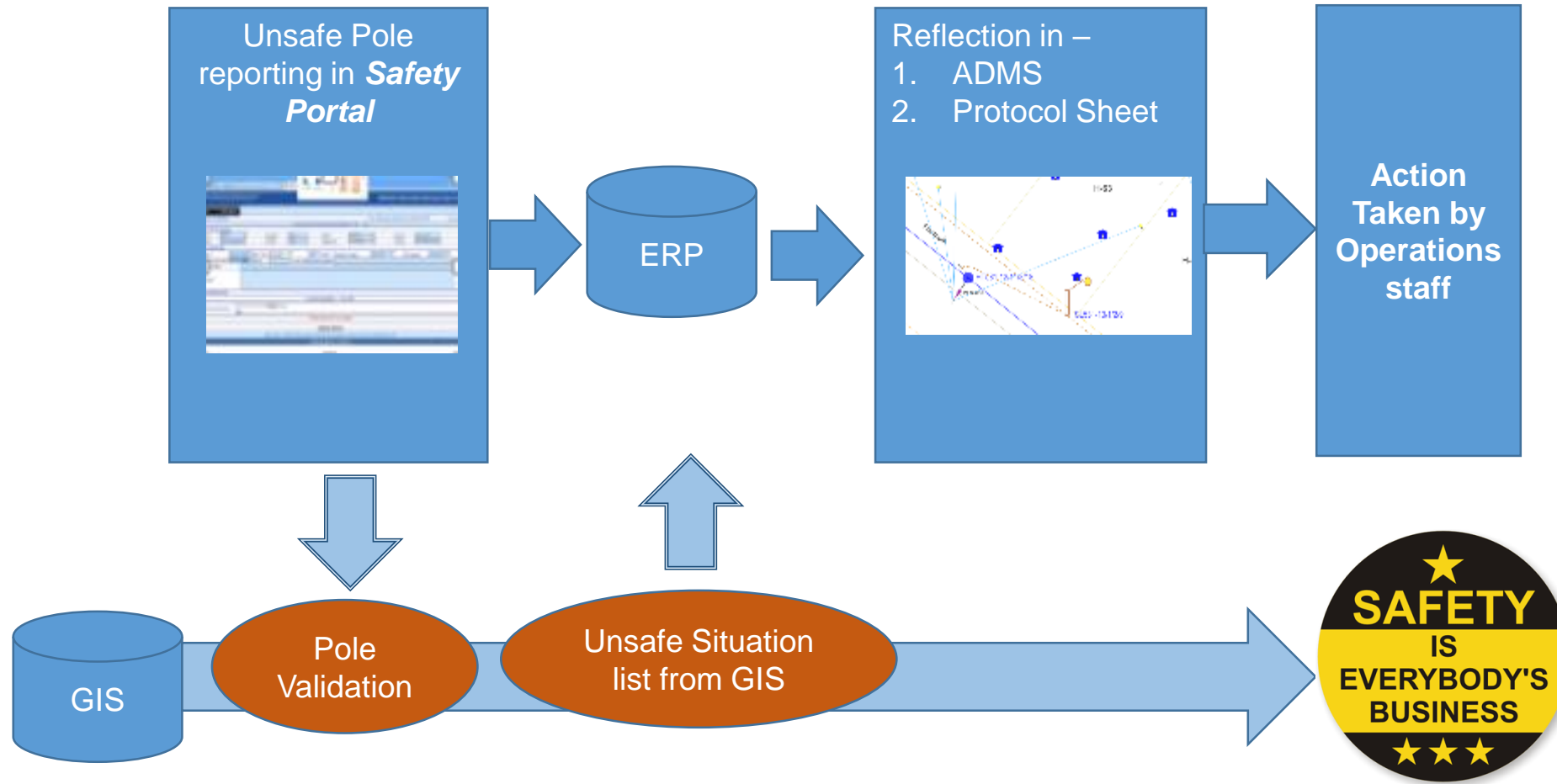


Safety (Suraksha) Portal

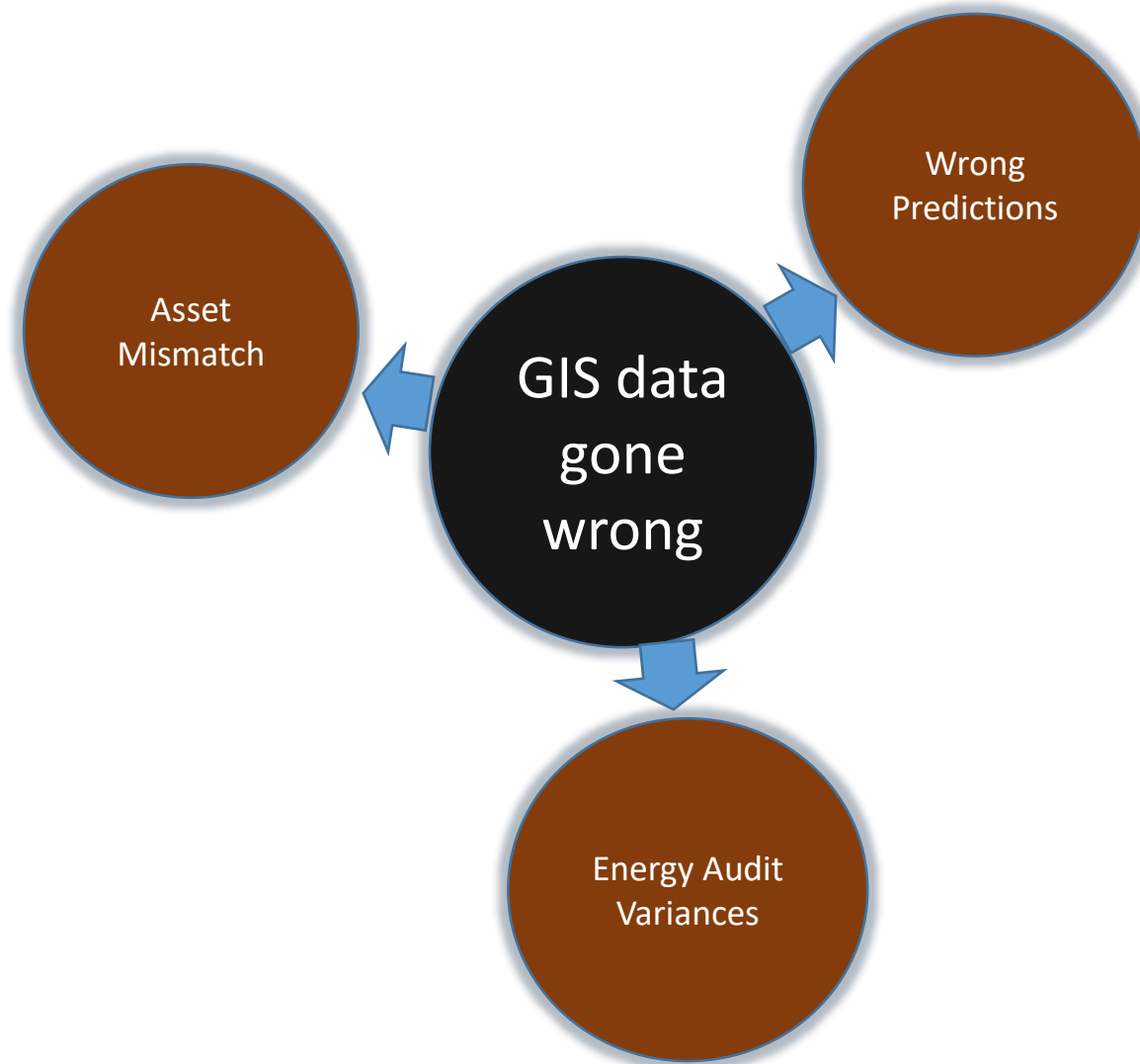


with you *Non-Stop*

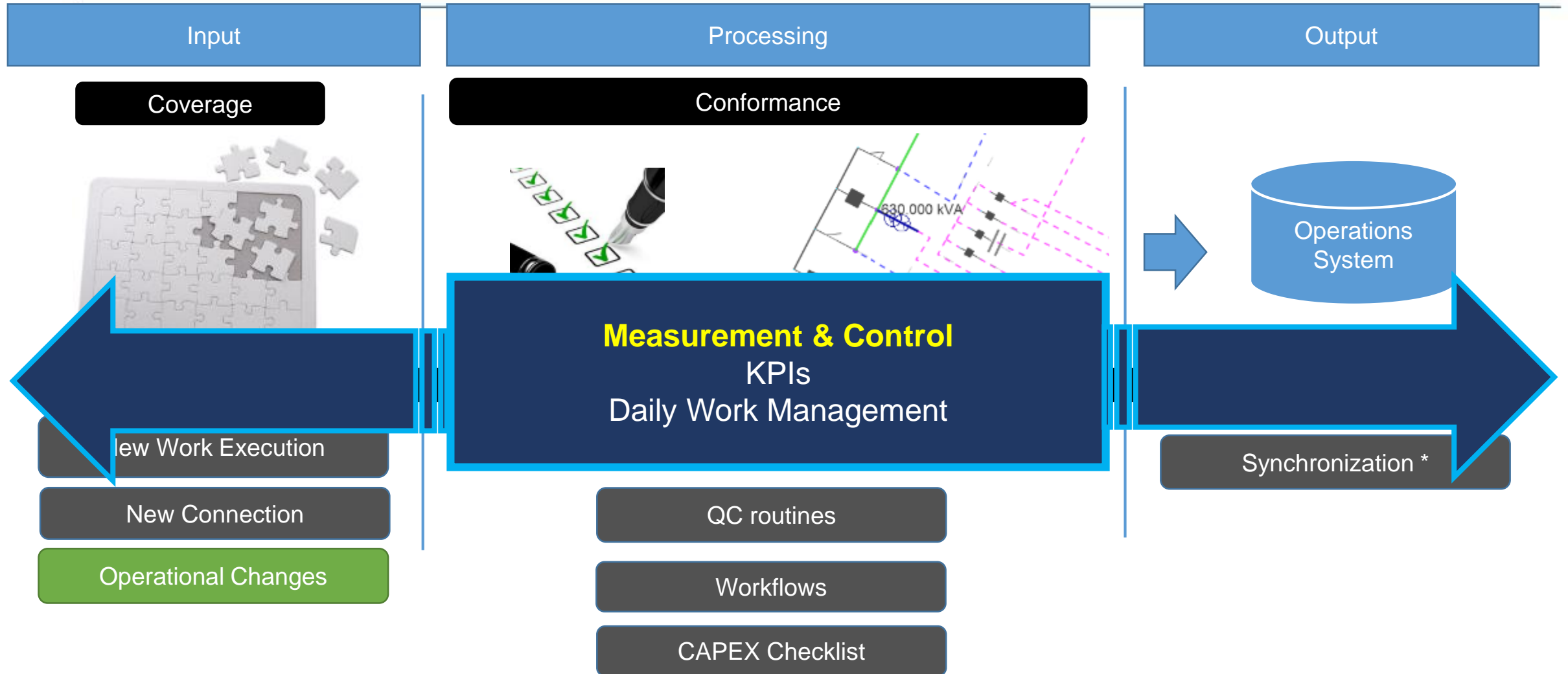
In Summary – GIS & Safety



Caution – The Mutant !

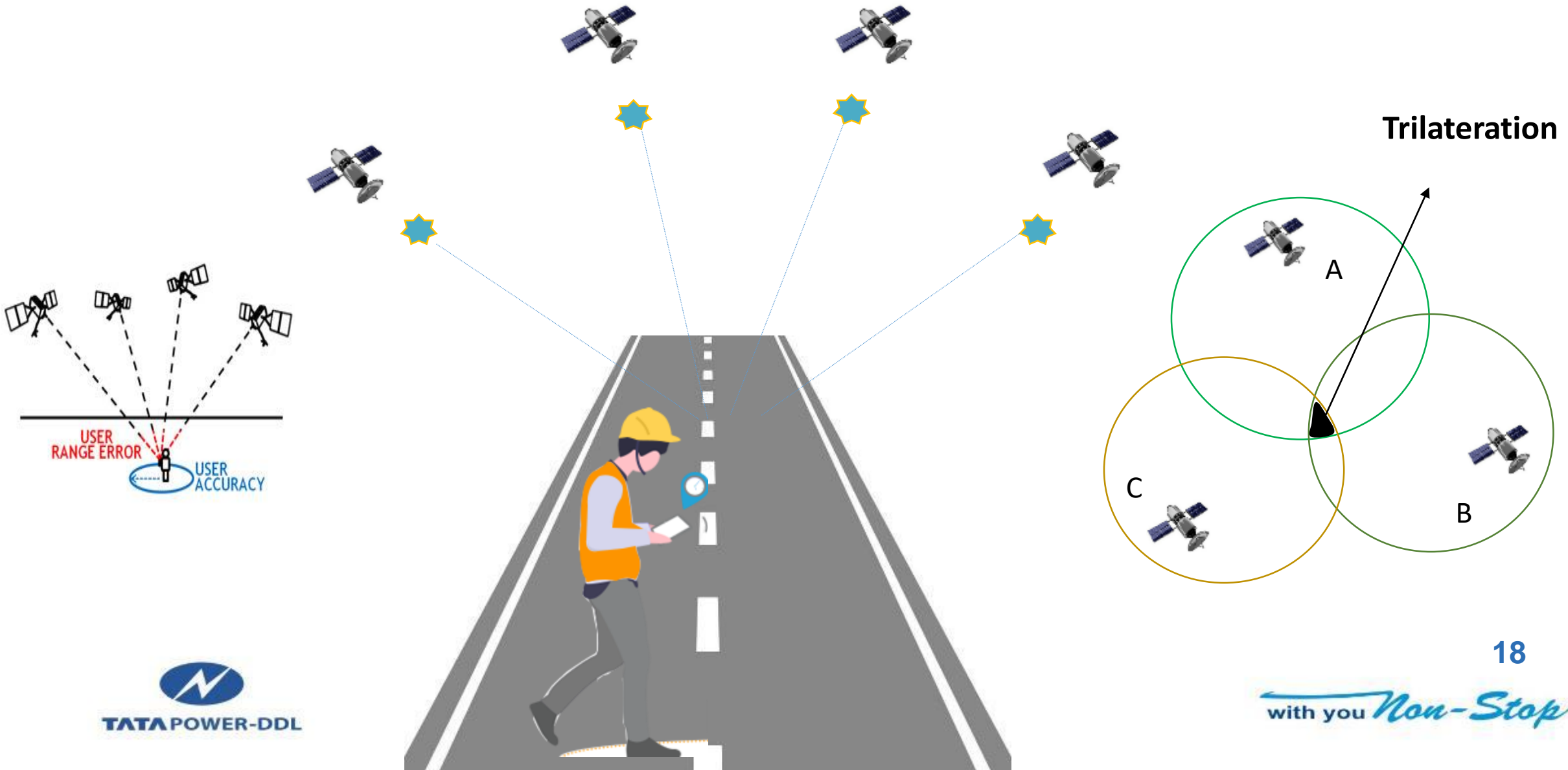


GIS – The Three C's of Quality

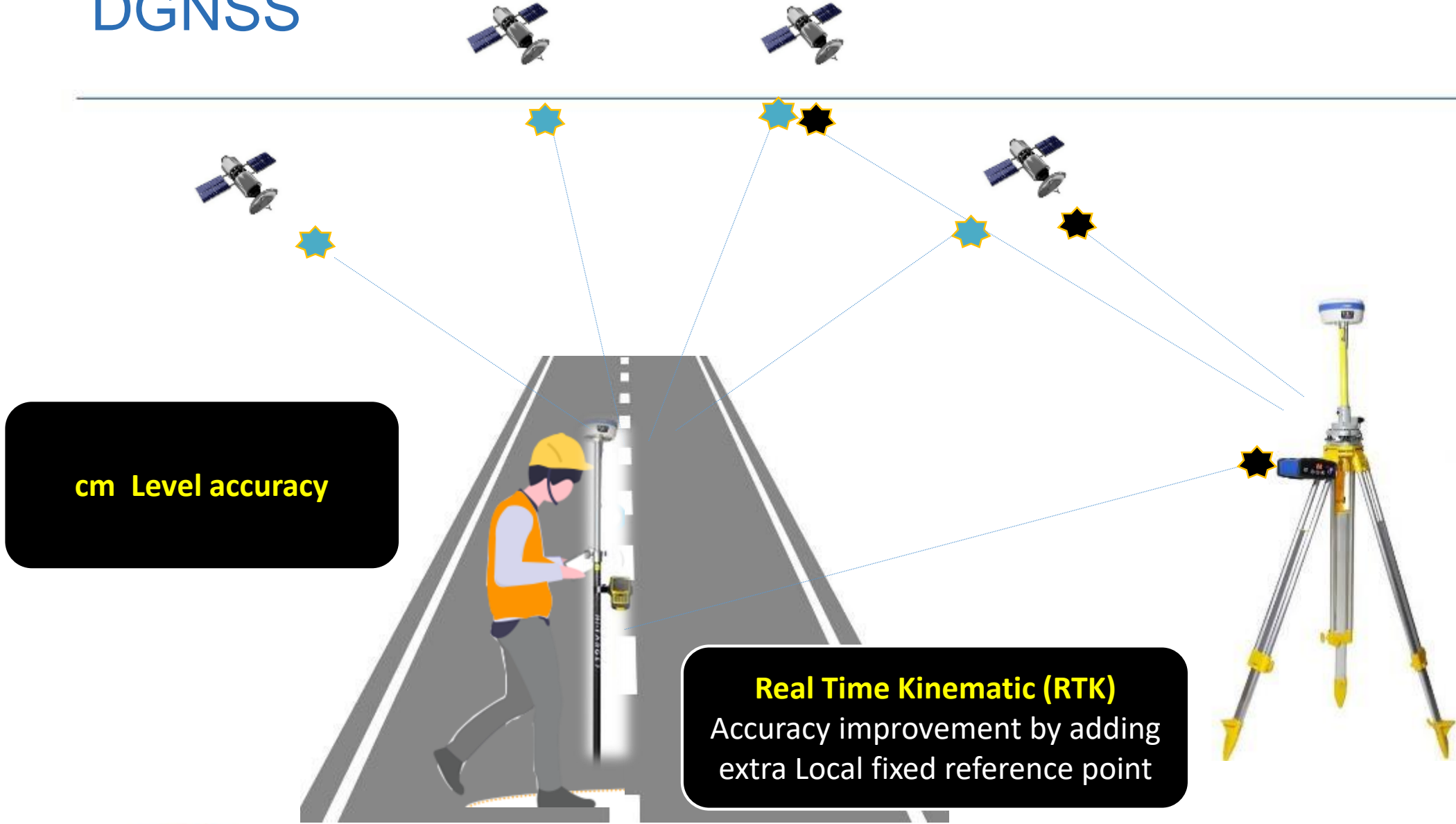


GIS @ Tata Power-DDL , Latest and Next avenues

Positional Accuracy – Explained

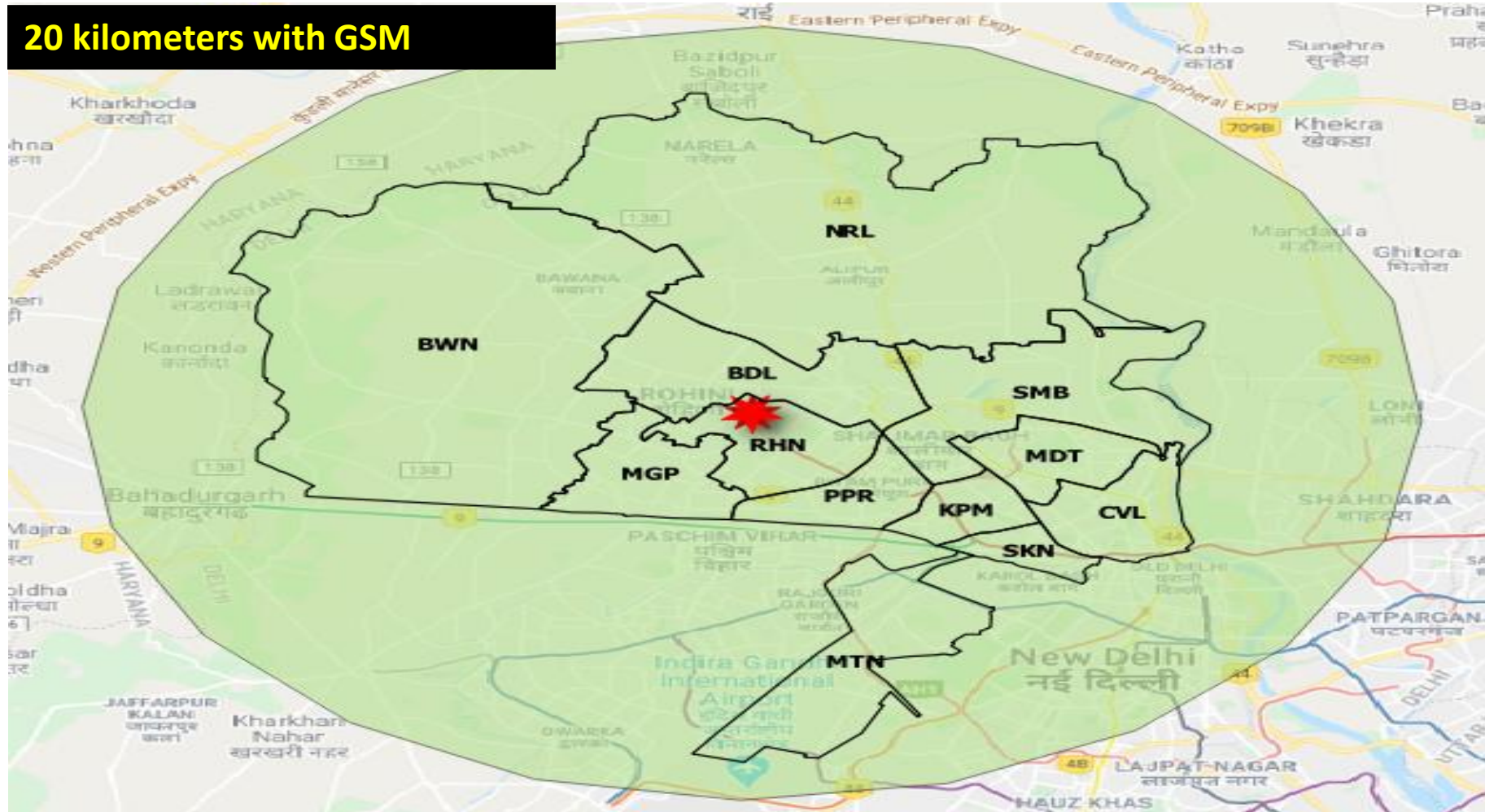


DGNSS



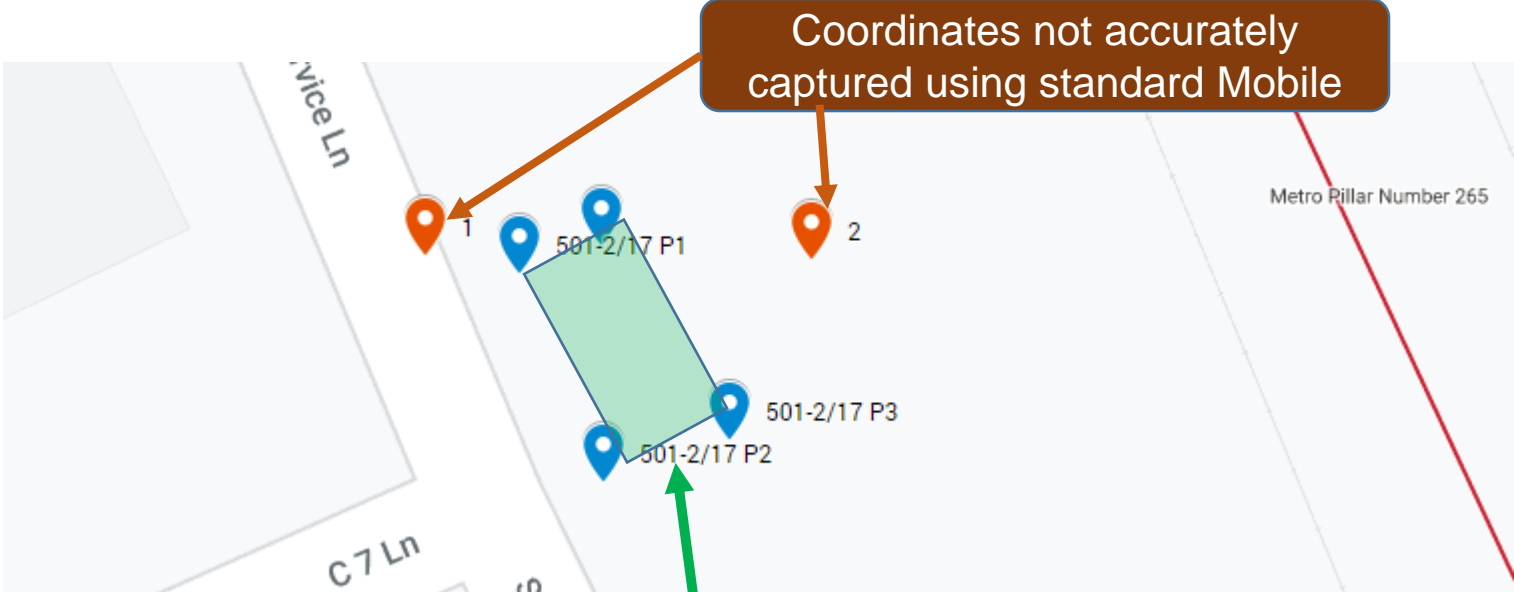
DGNSS Solution - Base Station Coverage

20 kilometers with GSM



- One fixed base can serve multiple rovers

Implementation - Comparison



Pole mounted Fenced DT – corners of the Fencing (captured accurately using Rover)

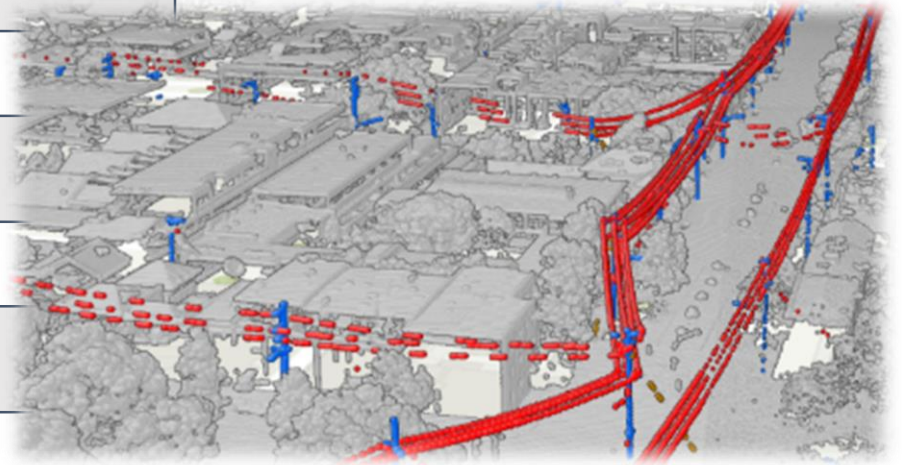
GIS Next – The 4th C of Convenience using Technology

Innovation in Mobility

Workflow based

LiDAR – From Drone to Hand?

CV, AI, GeoAI



Thank You!



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