Intelligent Digital Transformation

For Utilities, Telecom & Infrastructure

Re-Engineering Utility GIS: AI, Automation, and Rapid Deployment

Vision & Mission

Lead digital transformation in Utilities, Telecom & Infrastructure.

Deliver future-ready solutions that enhance efficiency, reliability, and business impact.

Be the trusted global partner enabling modernization at scale.

To leverage GIS, data engineering, automation, and intelligent platforms to help enterprises build resilient, scalable, and high-performance digital networks.

Our Heritage & Evolution

9+ years of innovation in Utilities & Telecom

Strong foundation in ESRI GIS & Utility Network

Expansion across Asia, Middle East, Europe & ANZ

Growth from system integrator → Digital transformation partner

Proven telecom programs across Fiber, FTTx, OSS / BSS & field modernization

Deep partnerships with ESRI, Suntech, and leading telecom vendors

Inovaantage Global Footprint

- Redland, USA
- Reading, UK
- Hyderabad & BBSR India
- Kuala Lumpur, Malaysia
- Singapore
- Danang, Vietnam
- Manila, Philippines
- Adelaide, Australia

UK GIS – ESRI / Utility Network

CEM Macau – OMS

TNB Malaysia – Billing

TNB Malaysia – AMI

TNB Malaysia – Grid Project and Portfolio Management

Tower Management System

Singapore Power Group – GIS – Utility Network

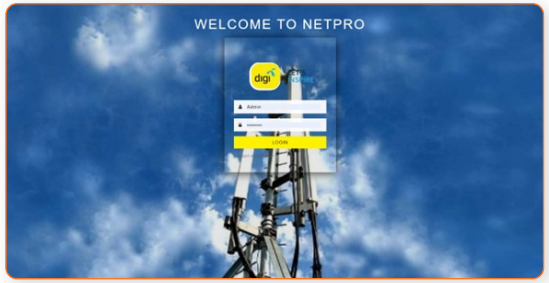
ADMS – Power On Advantage

ADMS - Perth Australia

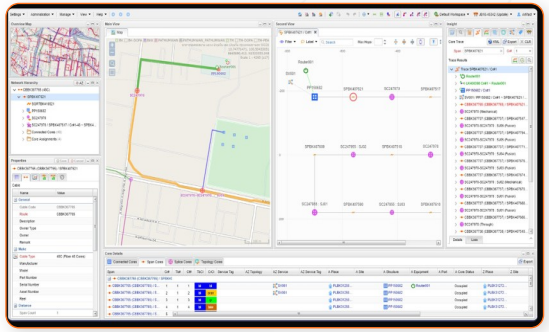
Australia Road Network upgrade

Singapore Power Group – WWMS

Telecom Capability

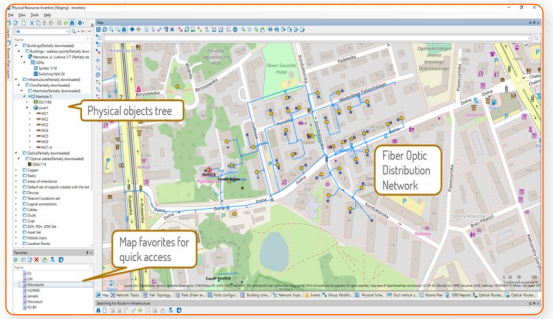


Tower Management System



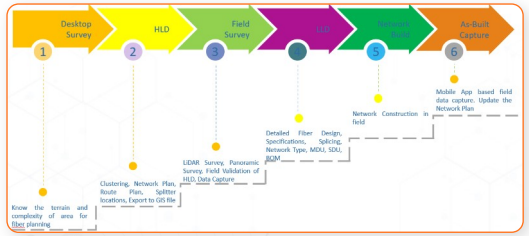
Fibre Management System

Field Operation

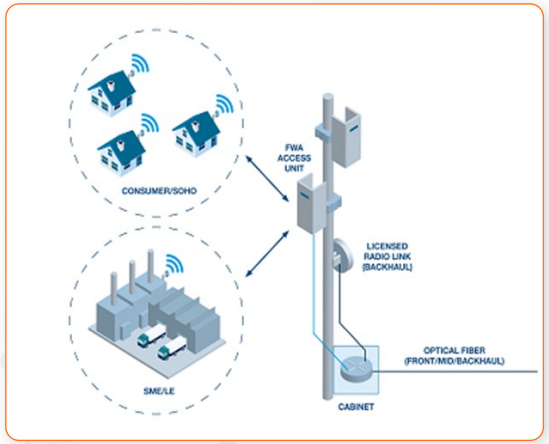


OSS & BSS

Data Cleansing & Recording



Fibre Plan & Design



5G & FWA

Survey & Mapping

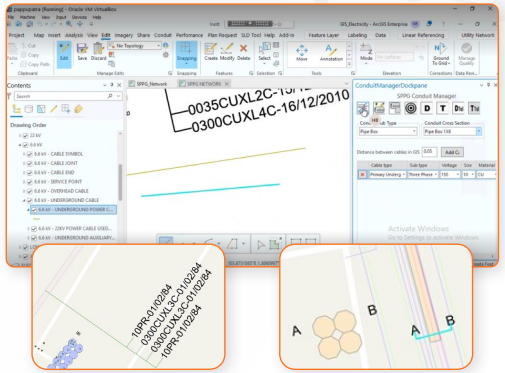
Utility Capability

Zero Data Loss

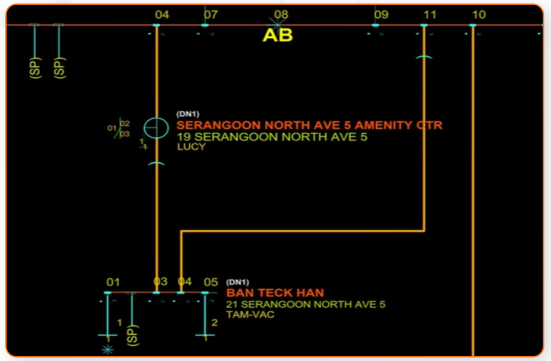
99 % Data auto-loaded

91 % Errors Auto-fixed

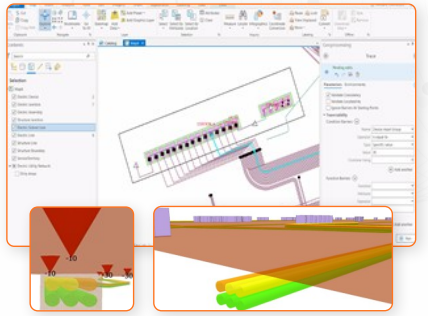
Inovaantage GIS Migration Platform



Conduit Pro

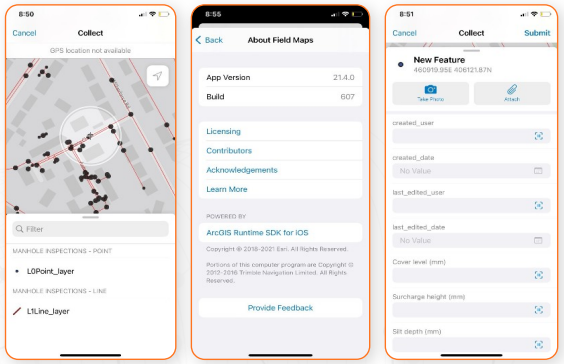


SLD Pro



Migration / Upgrade

- ESRI Geometric to Utility Network
- GE SW 4.x to 5.x



Mobile GIS & Field Data Management

Project & Portfolio Management ADMS

Work Force Management – Fueerza

Smart Meter – SI

Intelligent Digital Transformation - Why This Matter

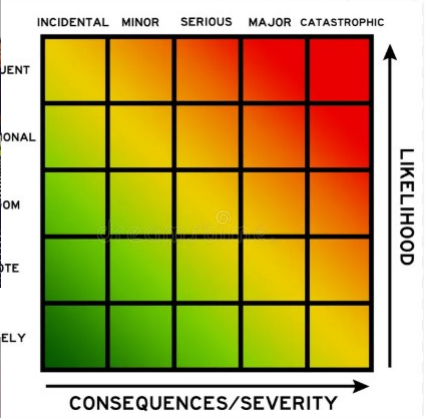
Utilities today face:

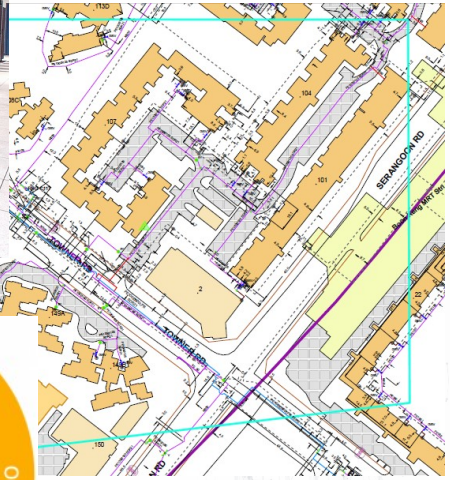
- Regulatory pressure
- Cybersecurity threats
- Climate resilience challenges
- Exploding customer expectations

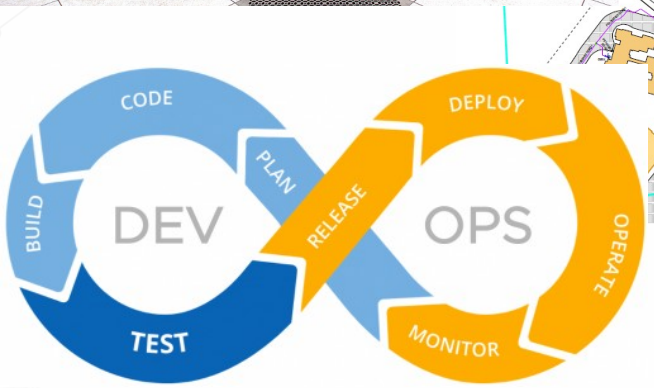
You cannot meet tomorrow's challenges
with yesterday's tools
and last decade's delivery models.

Problems

- Systems running utilities are often trapped in the past.
- For decades, GIS upgrades in utilities have followed a painful pattern
- Manual data migration
- Years of parallel systems
- Hundreds of people fixing data
- Endless testing cycles
- High risk, high cost, and frequent failure
- Migrating millions of assets
- Complex feeder and circuit connectivity
- Strict safety and regulatory rules







The Inovaantage Promise

At Inovaantage, we don't ask:

"How do we migrate GIS?"

We ask:

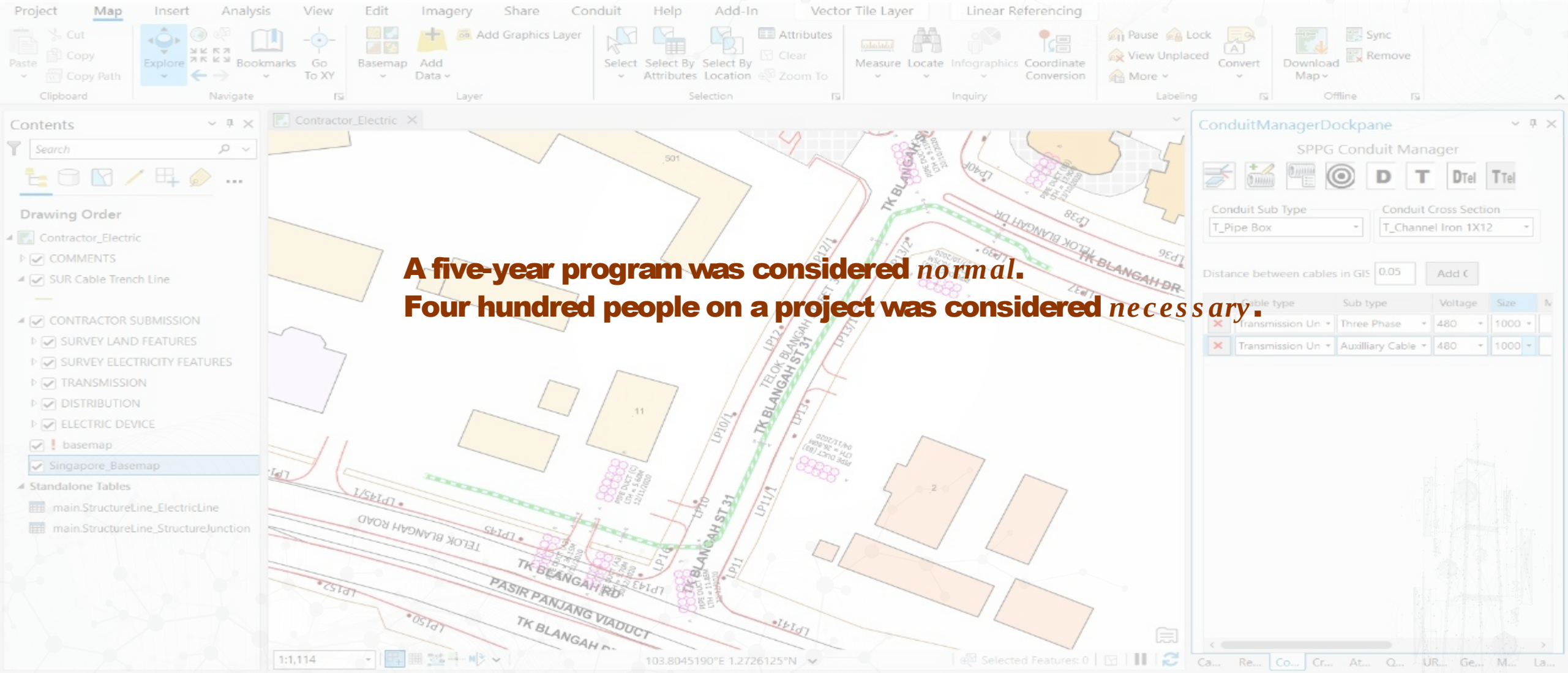
"How do we future-proof the utility network for the next 30 years?"

And we do it:

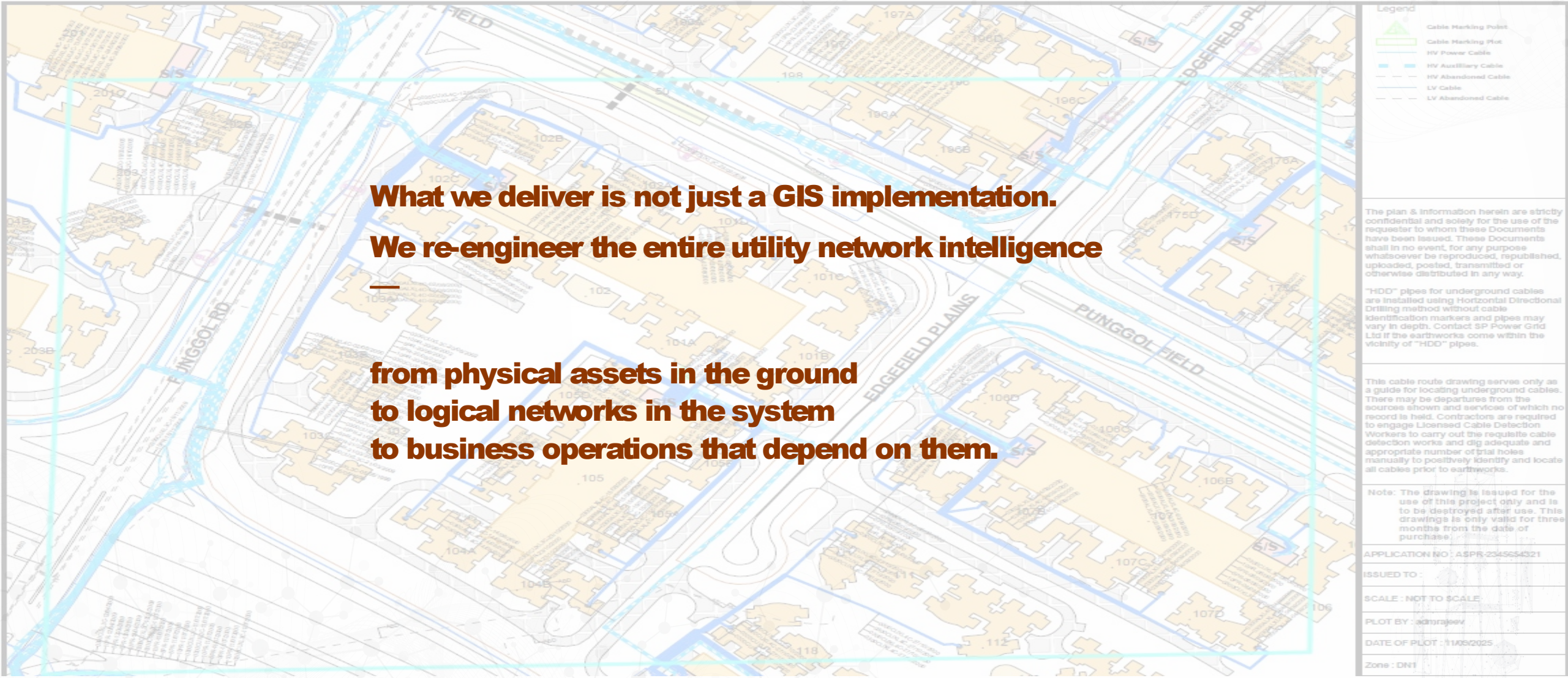
- **Faster**
- **Safer**
- **Smarter**

And at a scale never done before

What if this entire model is wrong?



Not a GIS Upgrade. A Network Re-Engineering



What we deliver is not just a GIS implementation.

We re-engineer the entire utility network intelligence

—

from physical assets in the ground
to logical networks in the system
to business operations that depend on them.

From Physical to Logical — Network Rules That Actually Work

We establish end-to-end network rules:

- **Physical connectivity**
- **Logical connectivity**
- **Flow behavior**
- **Asset lifecycle rules**

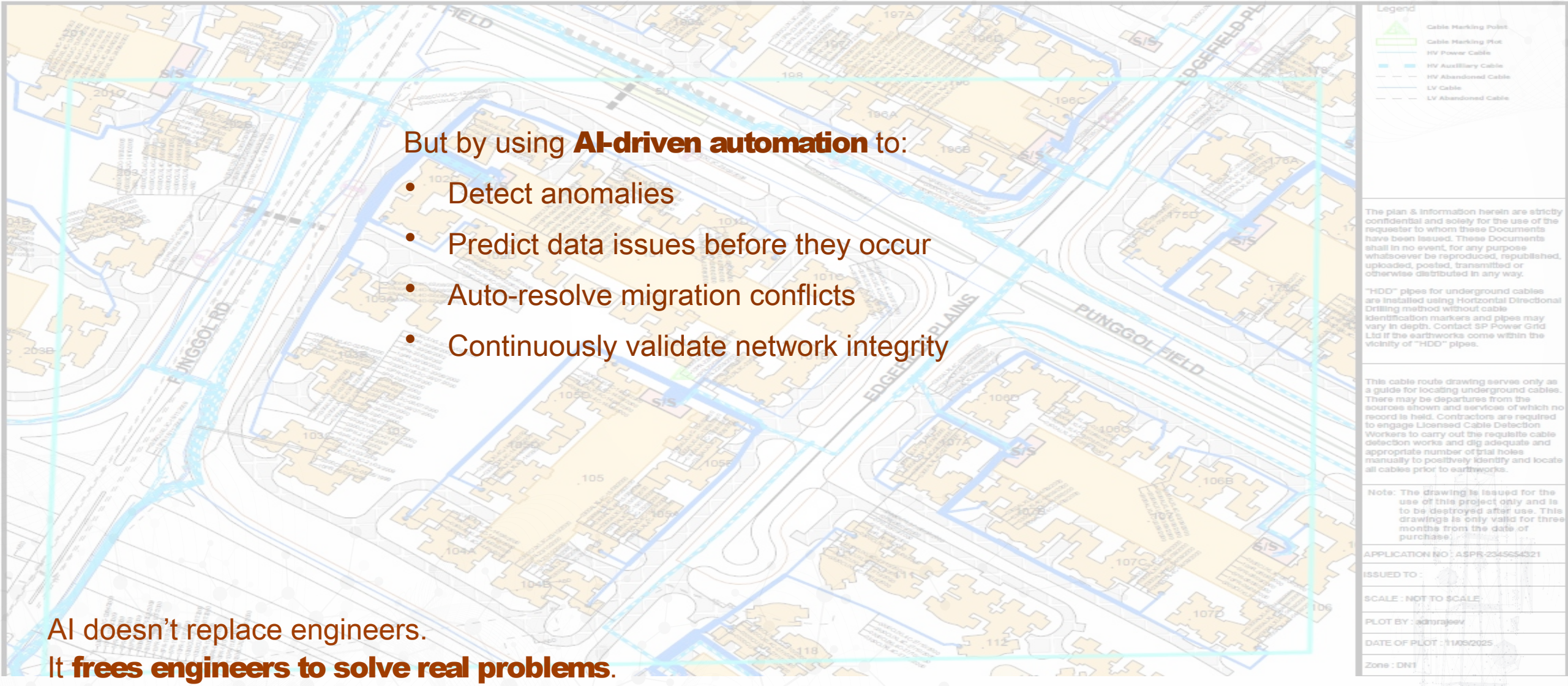
So the network thinks like the real world behaves.

And then we connect it seamlessly to:

- **ERP systems**
- **CRM platforms**
- **Workforce Management**
- **Document Management**

This is not a GIS system.
This is a living digital twin of the utility network.

AI: Not a Buzzword — A Workforce Multiplier

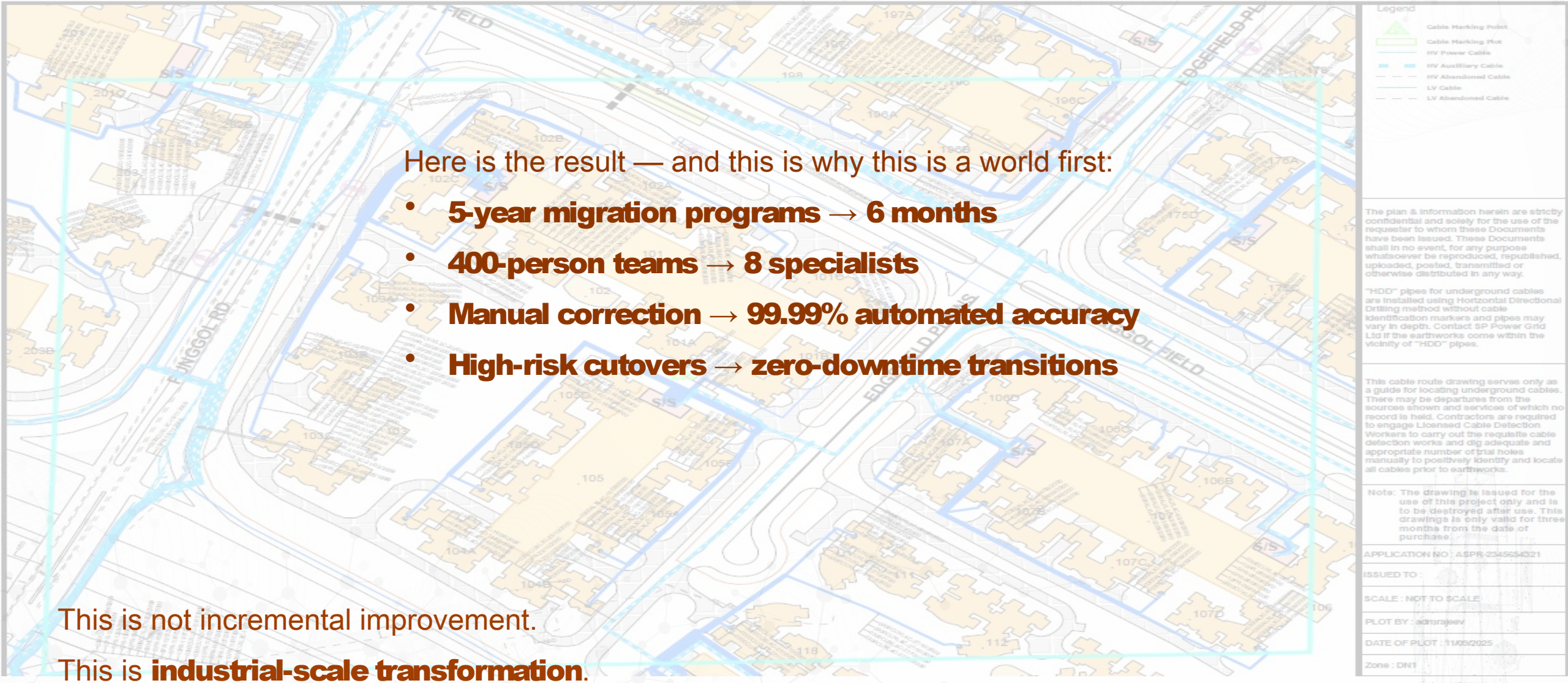


But by using **AI-driven automation** to:

- Detect anomalies
- Predict data issues before they occur
- Auto-resolve migration conflicts
- Continuously validate network integrity

AI doesn't replace engineers.
It **frees engineers to solve real problems**.

The Result That Changed the Industry



Here is the result — and this is why this is a world first:

- **5-year migration programs → 6 months**
- **400-person teams → 8 specialists**
- **Manual correction → 99.99% automated accuracy**
- **High-risk cutovers → zero-downtime transitions**

This is not incremental improvement.

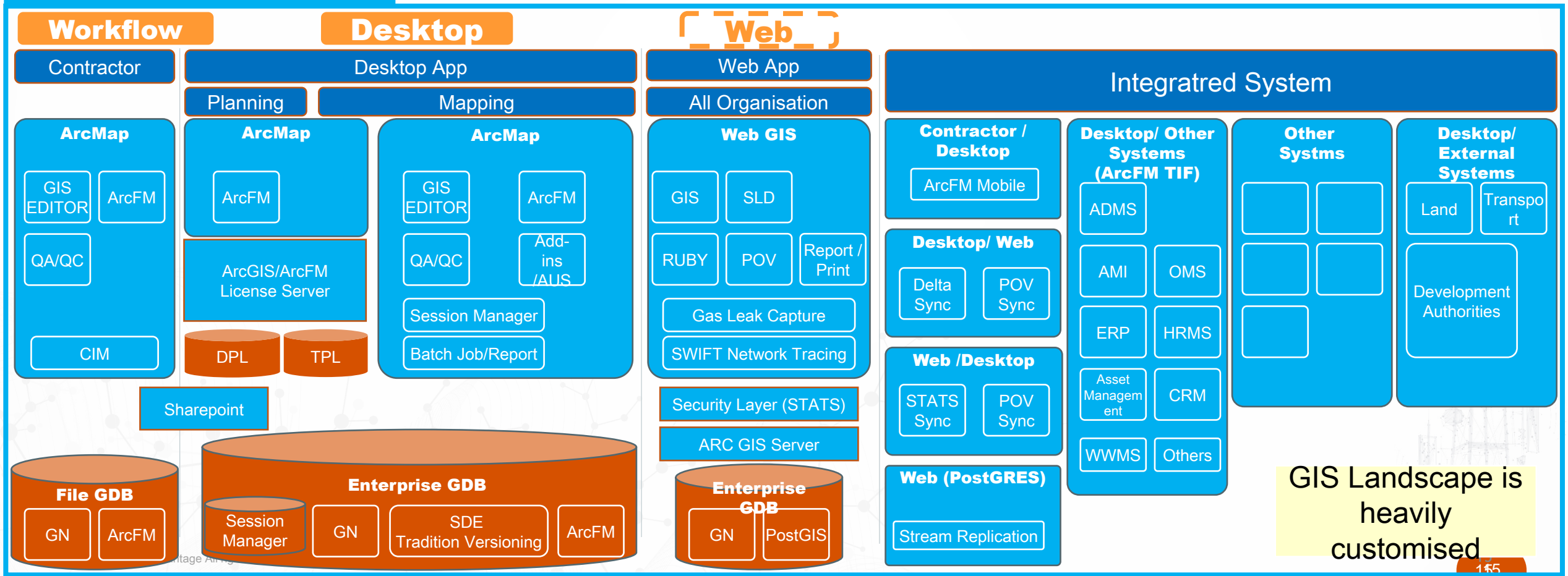
This is **industrial-scale transformation**.

Geometric Network State

Current State key points

1. Enterprise GIS not available for Planning
2. GIS implemented with ArcFM
3. Electric and Gas networks managed as Geometric Network
4. Inefficient work flow for
   - 4a CIM (Contractor Input Model)
   - 4b POV (Project Officer Verification)
5. Security layer implemented for web only
6. ArcFM and ESRI ArcMap end of life
7. GIS application are extensively integrated to support business processes
8. Inefficient report extract process
9. Versioned data has limited audit function and slow performance
10. Geometry data stored in binary SDE data type which impacts the ability to query data and efficiently write reports

Geometric Network Landscape



GIS Landscape is heavily customised

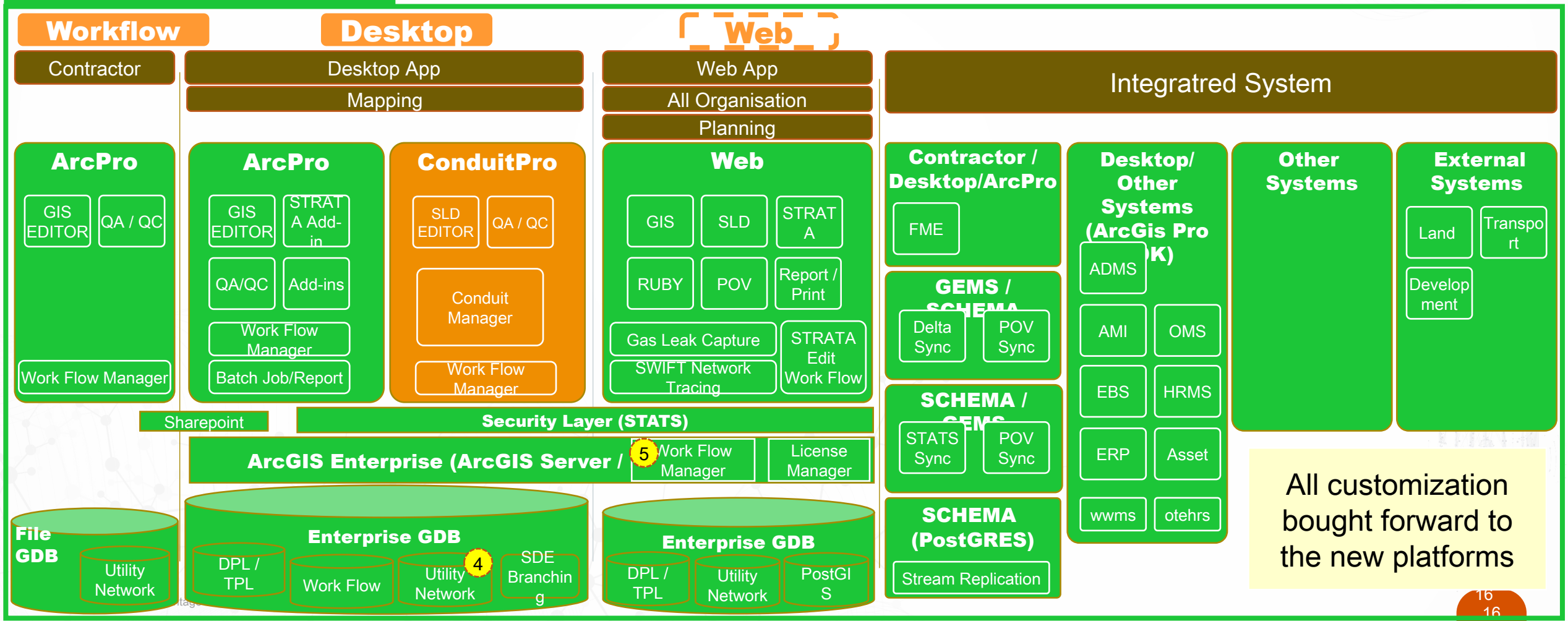
Utility Network State

Target State key points

1. Integrated Planning System
2. ArcGIS Pro GIS editor with 3d visualization
3. ArcGIS Enterprise platform implemented
4. Electric and Gas networks migrated to ESRI Utility Network data model
5. Centralised Work flow configuration
6. Security layer implemented for desktop and web
7. FME implemented to support Contractor Input Model
8. Efficient report extract process (includes enhanced tracing reports)
9. SDE Branching version with, web editing, enhanced audit function and improved performance
10. SQL Native geometry type supports spatial SQL queries
11. ArcGIS Pro SDK is used for integration to other systems
12. State of the Arc Conduit Manager + Single Line Diagram

Inovaantage Product

Target Application Landscape



Inovaantage Data Migration Tool (rUNr)

rUNr, by Inovaantage, automatically migrates Utility Network data from existing systems to Esri's Utility Network Model.

rUNr automatically transforms, validates and loads data into a production ready Utility Network architecture, with fully configurable Business Rules that allow for the automated correction and editing of data prior to loading.

- Geometry checks
- Topology checks
- Attribute checks

Zero Data Loss

99% data auto-loaded

91% errors Auto-fixed

Zero Data loss and 100% quality of connectivity, spatial location, and attribution.

Integration and customizations for complex data transformations and auto-fixing of errors

- **91%** of errors are automatically fixed.
- Only **9%** of errors require manual fix.

Quick turnaround for upgrades and ad-hoc data model changes.

Various Pre- and post-migration quality checks help to improve data quality.

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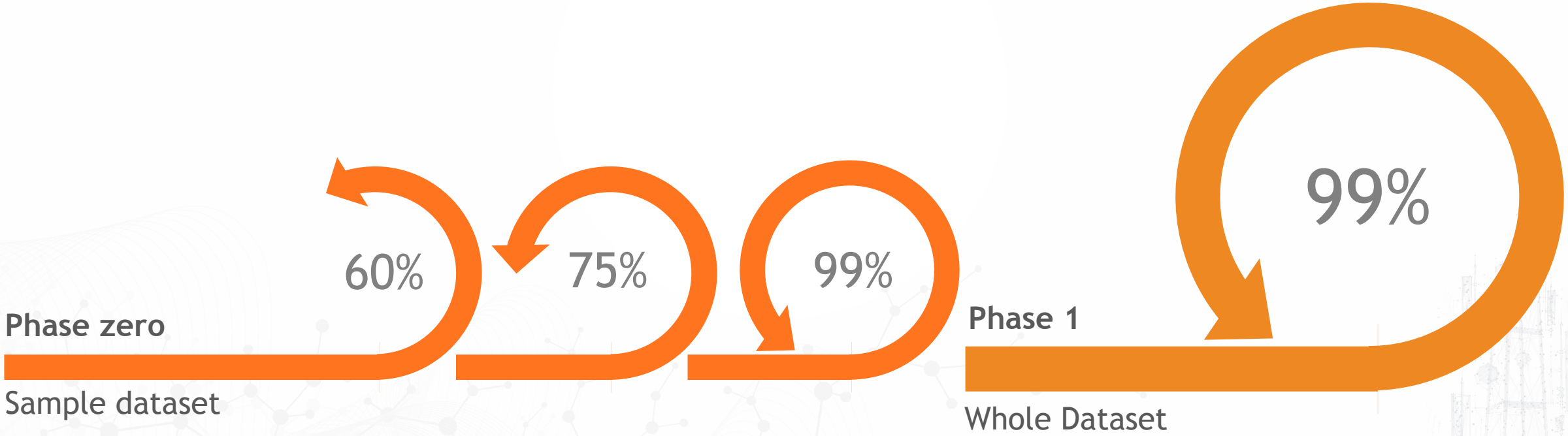
Our Proven Migration Approach

Our proven migration approach…

- **Phase zero**: Sample data pushed through a dummy migration, with iterative improvements to Business and Transformation Rules.
- **Phase 1:** The whole dataset is taken through a live or mock (test) migration, with potential for further iterations if new business rules or automated fixes are required.



Data Quality Summary (Live Project)

Total Feature count	2.16m
No issues – Transferred to UNM automatically	**91%**
Features that failed business rules (require editing)	*26,000*

Of the ~26,000 (9%) records that required editing, **91%** of them were edited automatically.

Of 2.16 million records, only about **2,370** required manual editing.

Category	Issue	Sample		Live	
		Issues	Auto Fixed	Issues	Auto Fixed
Invalid Connectivity	No junction edge rule	28%	77%	25%	99%
	More than one junction edge rule applicable	23%	65%	23%	99%
	The edges are different subtypes and cannot connect	23%	96%	23%	99%
	Edge Connectivity Policy for feature or object does not support Any Vertex	14%	56%	12%	93%
Geometry	Duplicate vertices	10%	100%	11%	100%
	Duplicate features	1.5%	95%	3.6%	99%
	Self-intersecting line	1.5%	100%	1.5%	100%
	Multi-Parts	0.1%	100%	0.2%	100%

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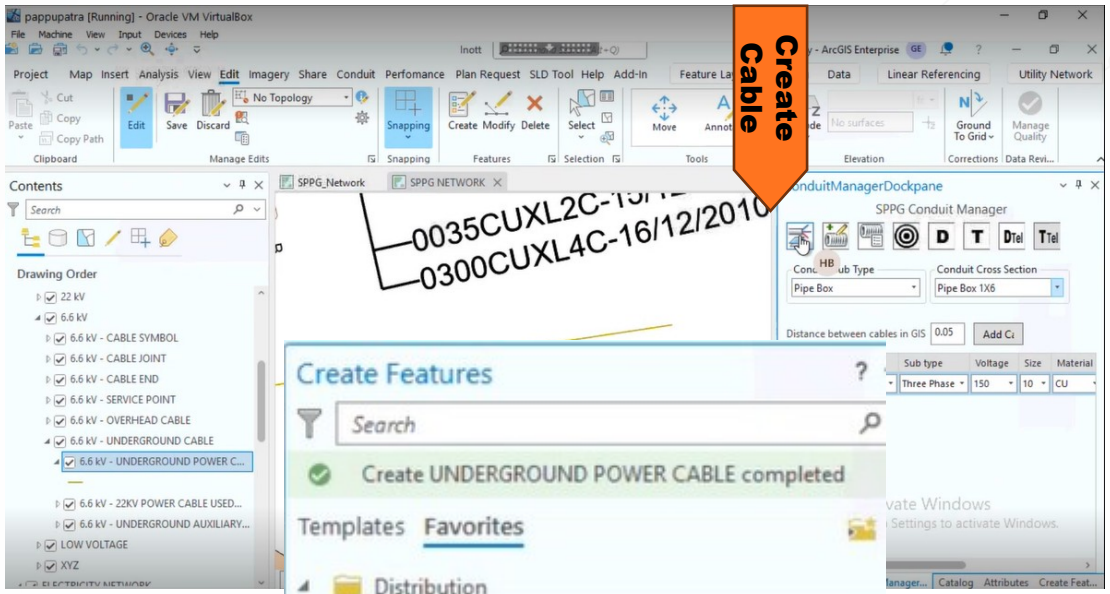
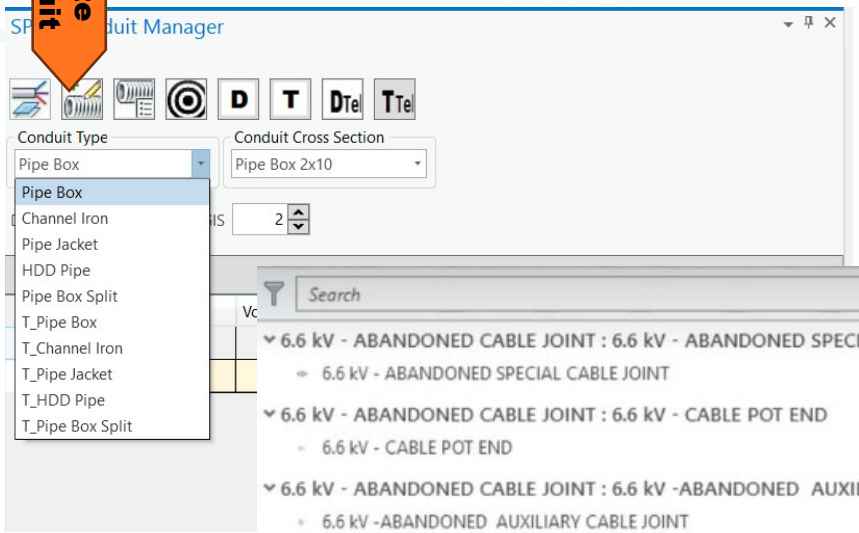
ConduitPro

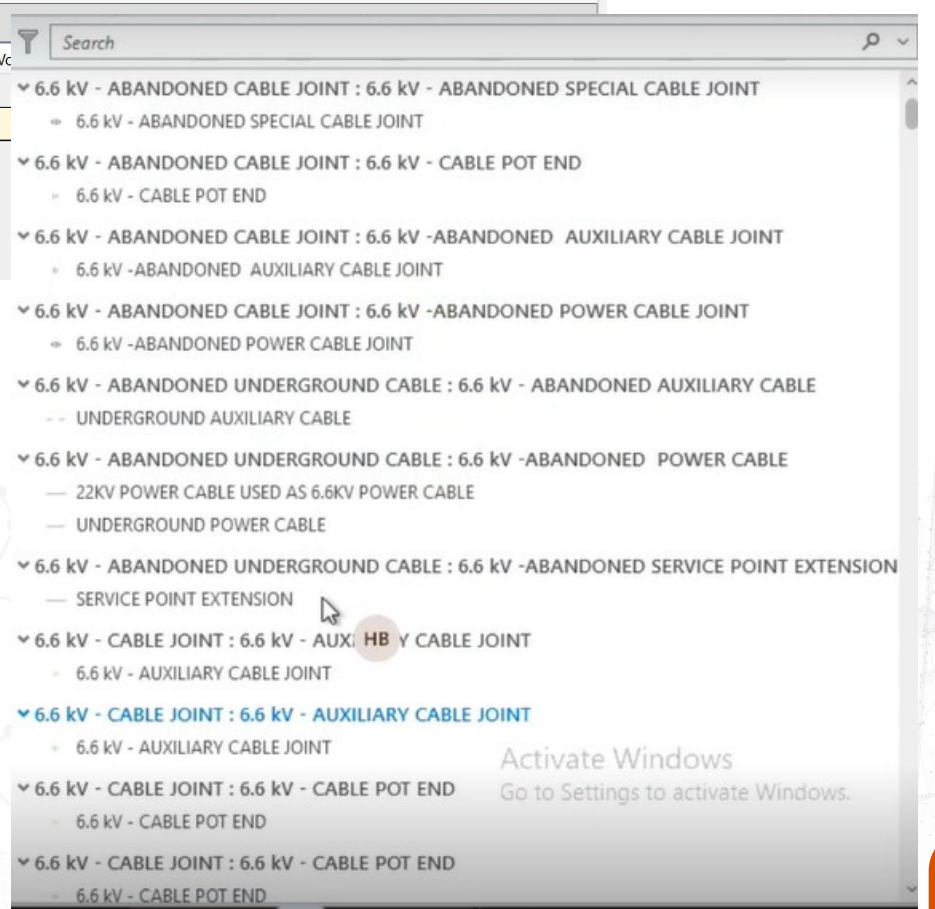
ConduitPro – A complete Conduit Management Solution



Pipe Outline

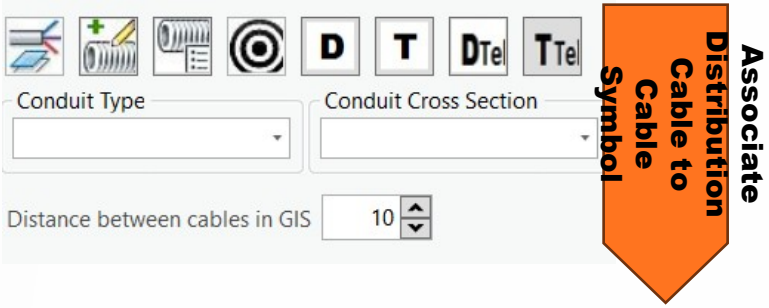
Create Conduit



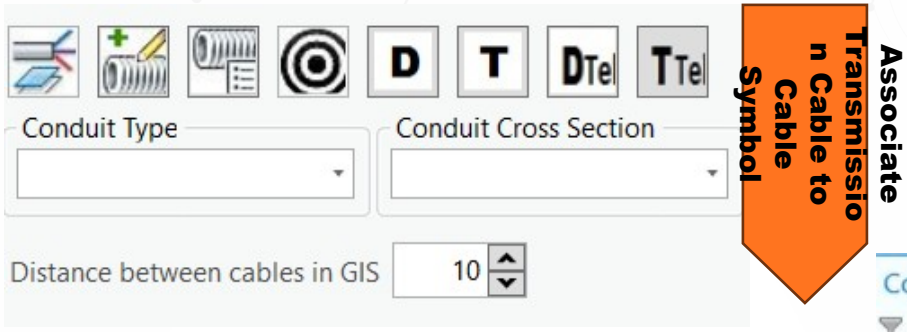


Create Cable
Create Conduit

ConduitPro – A complete Conduit Management Solution

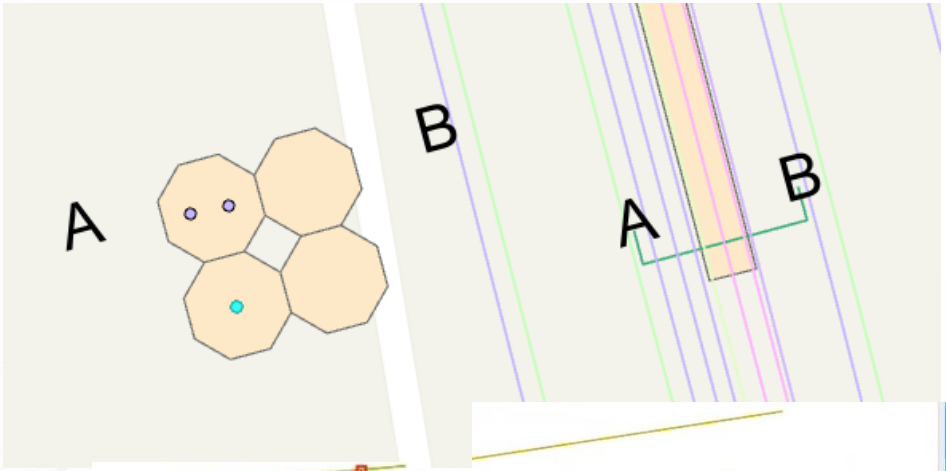


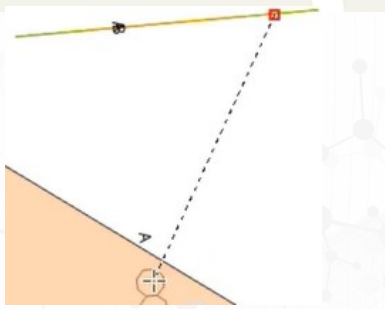
Associate Distribution Cable to Cable Symbol

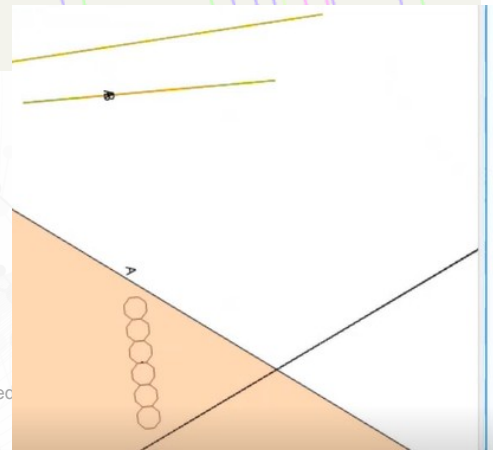


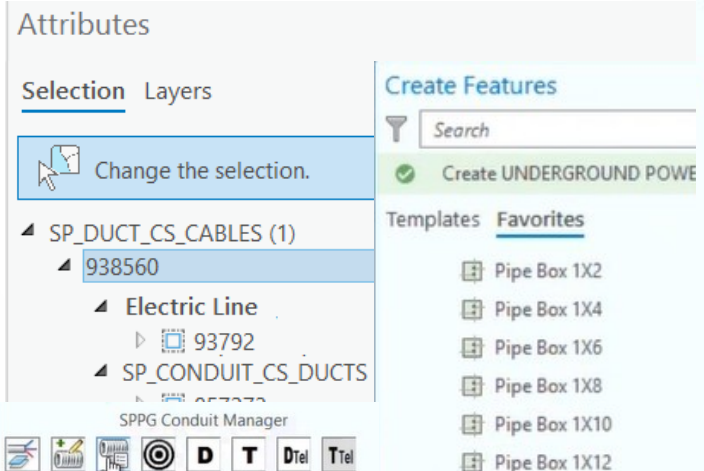
Associate Transmission Cable to Cable Symbol

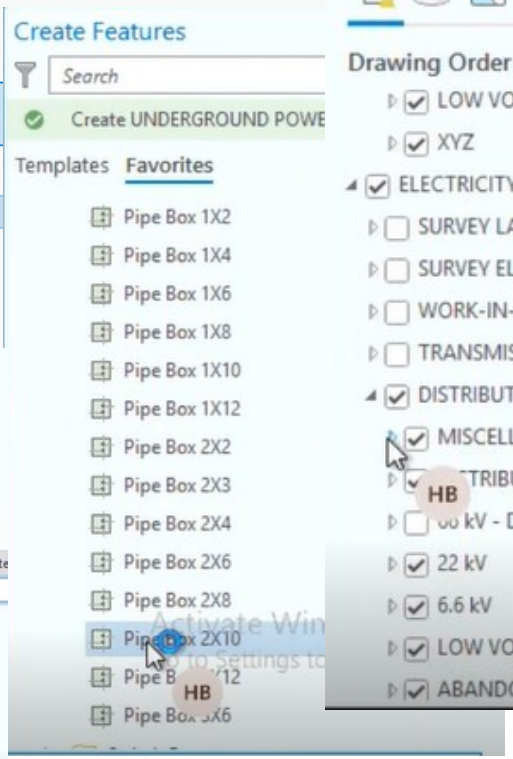
Associate cable symbols to cables

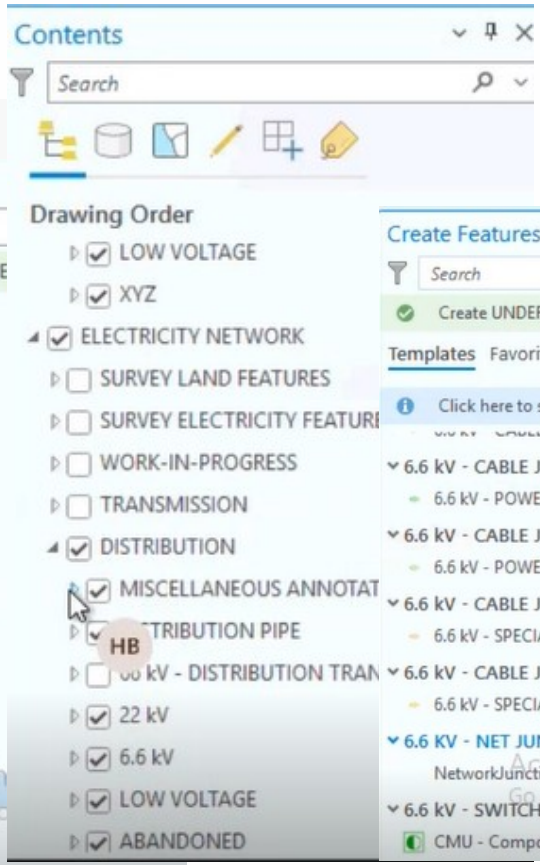


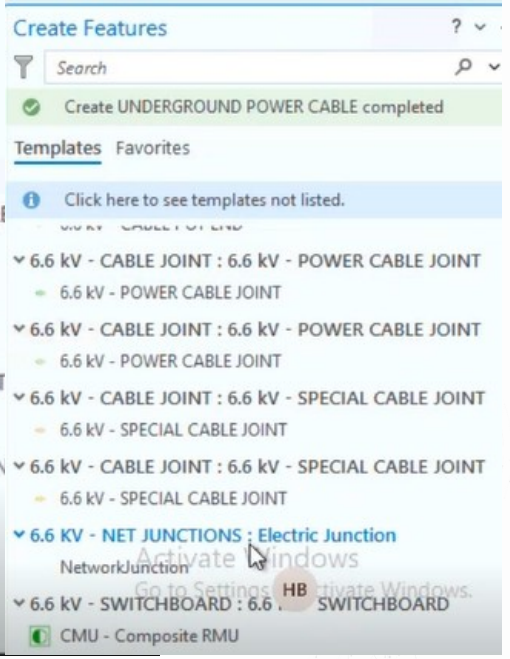






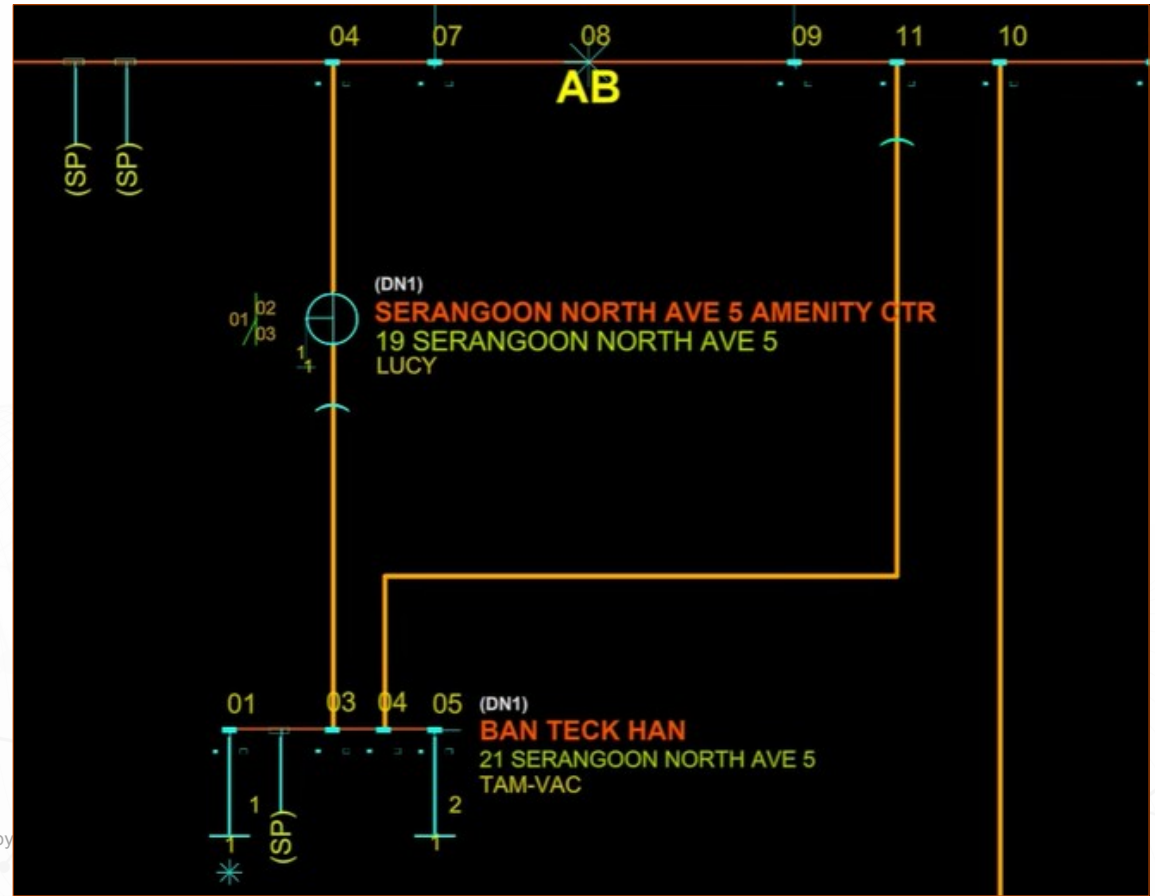


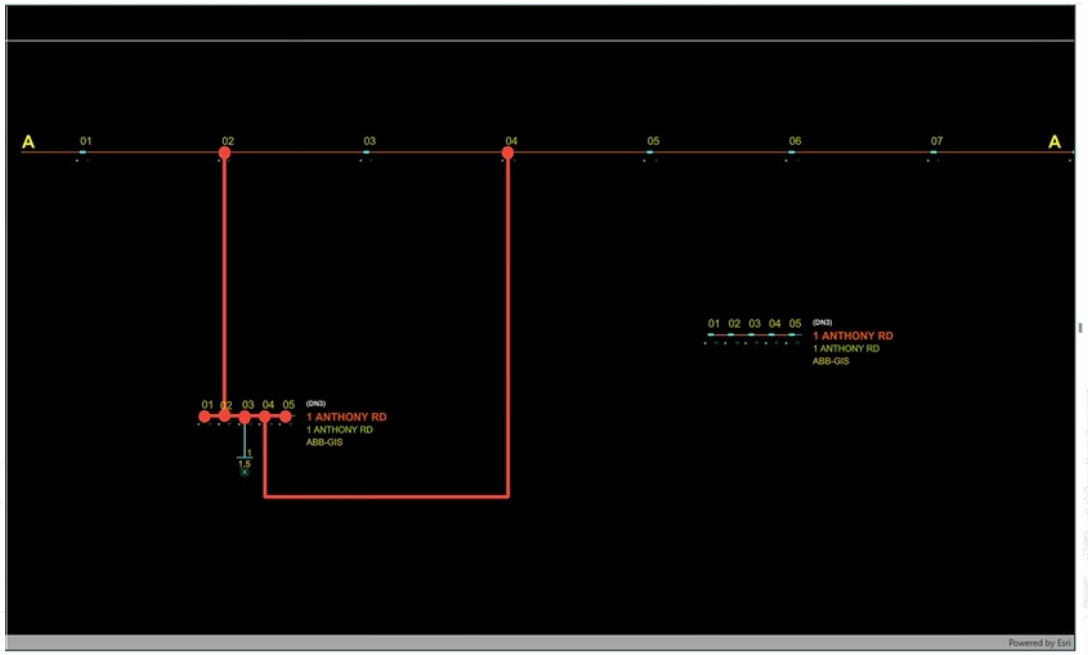




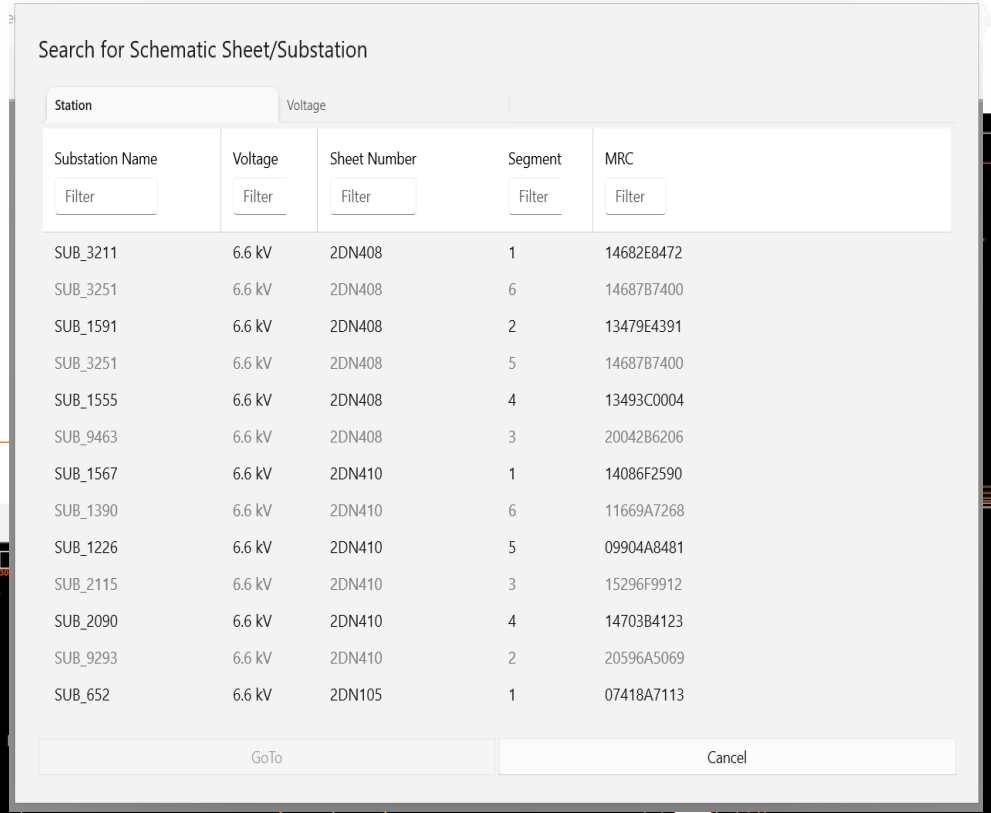
SLD

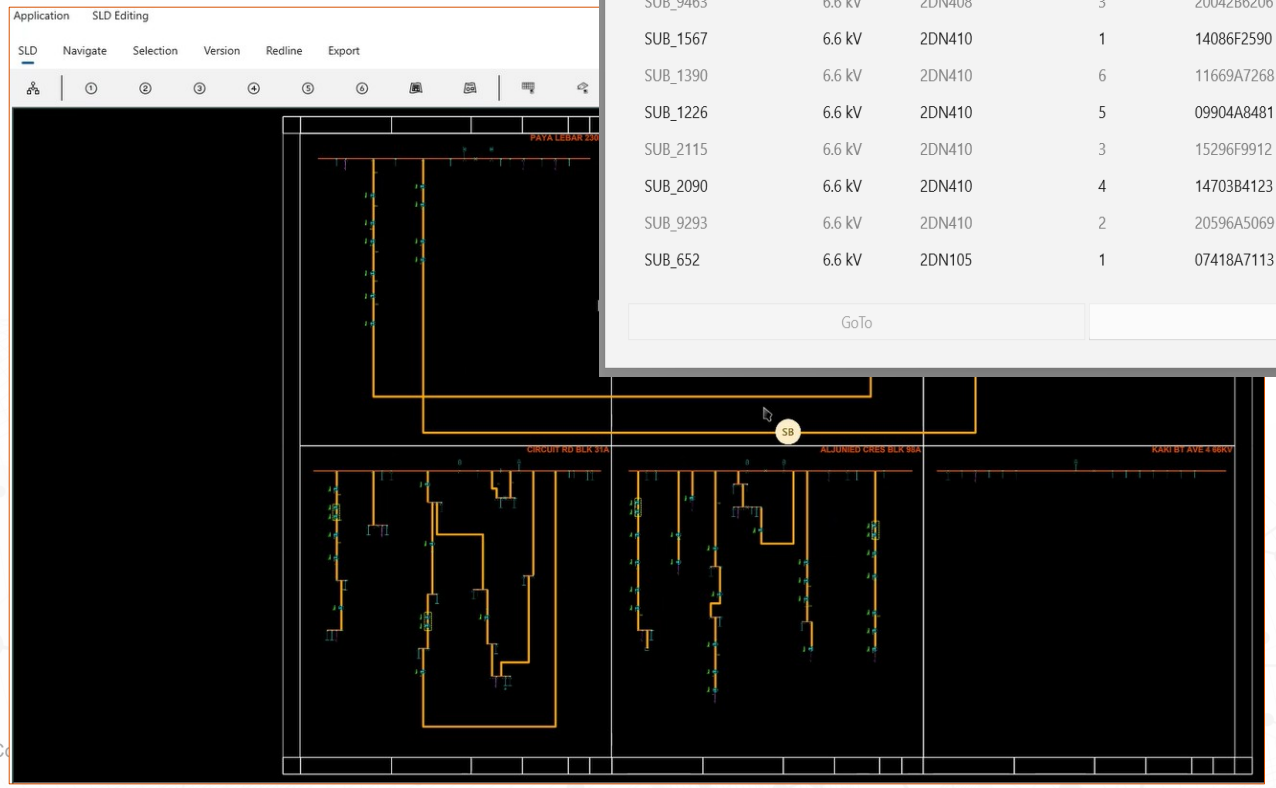
Electrical Schematics

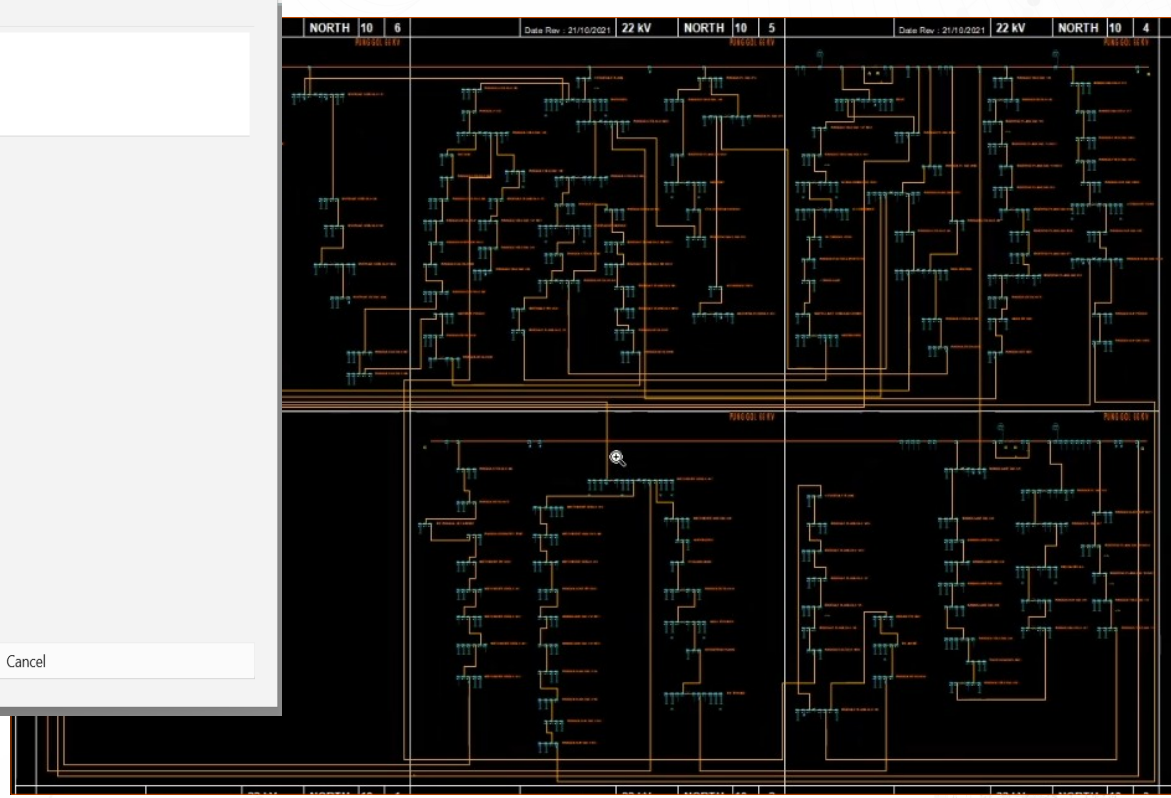




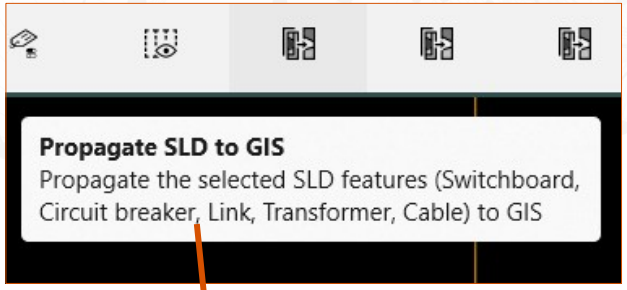
Searching the Schematic

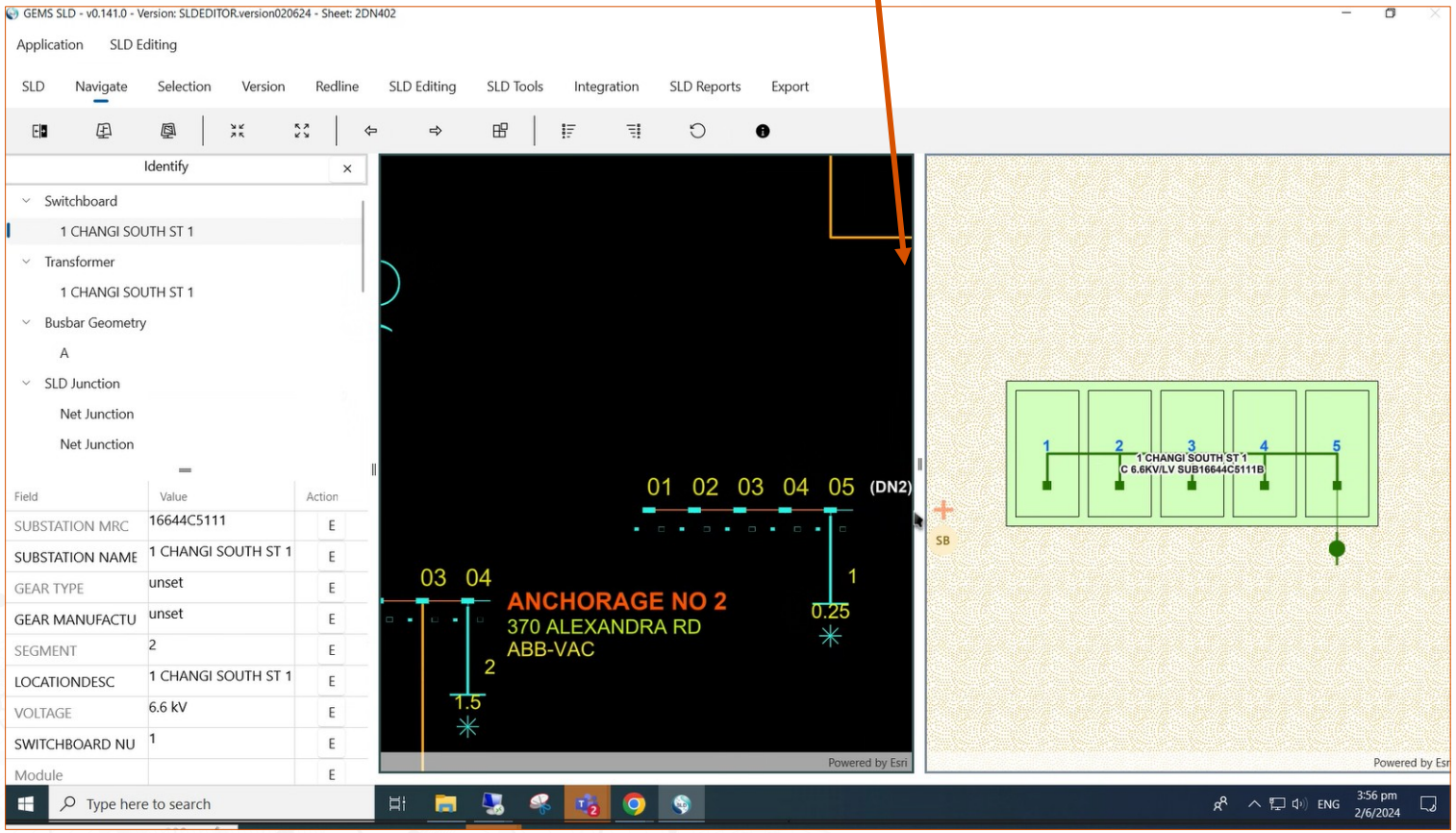






Split View





Why Clients Choose Us

- Deep Telecom + GIS + Utility Network domain expertise
- Proven accelerators (rUNr) reducing time & risk
- Ability to deliver large-scale migrations with 99.99% automated error correction
- Strong global track record with Tier-1 Telecom and Utility operators
- Full-stack capability – GIS, OSS / BSS, data migration, mobile apps, field ops
- Highly scalable, integration-ready, platform-independent solutions
- Modernize GIS & Utility Network platforms with speed and precision
- Plan, design, build, and manage fiber & 5G networks end-to-end
- Improve operational efficiency with field mobility & workflow automation
- Gain real-time network visibility for faster decisions and fewer outages
- Reduce rollout time, optimize resources, & avoid over-investment

Thank You

Contact Us

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