



Fiber Planning & Management Workflows in ArcGIS

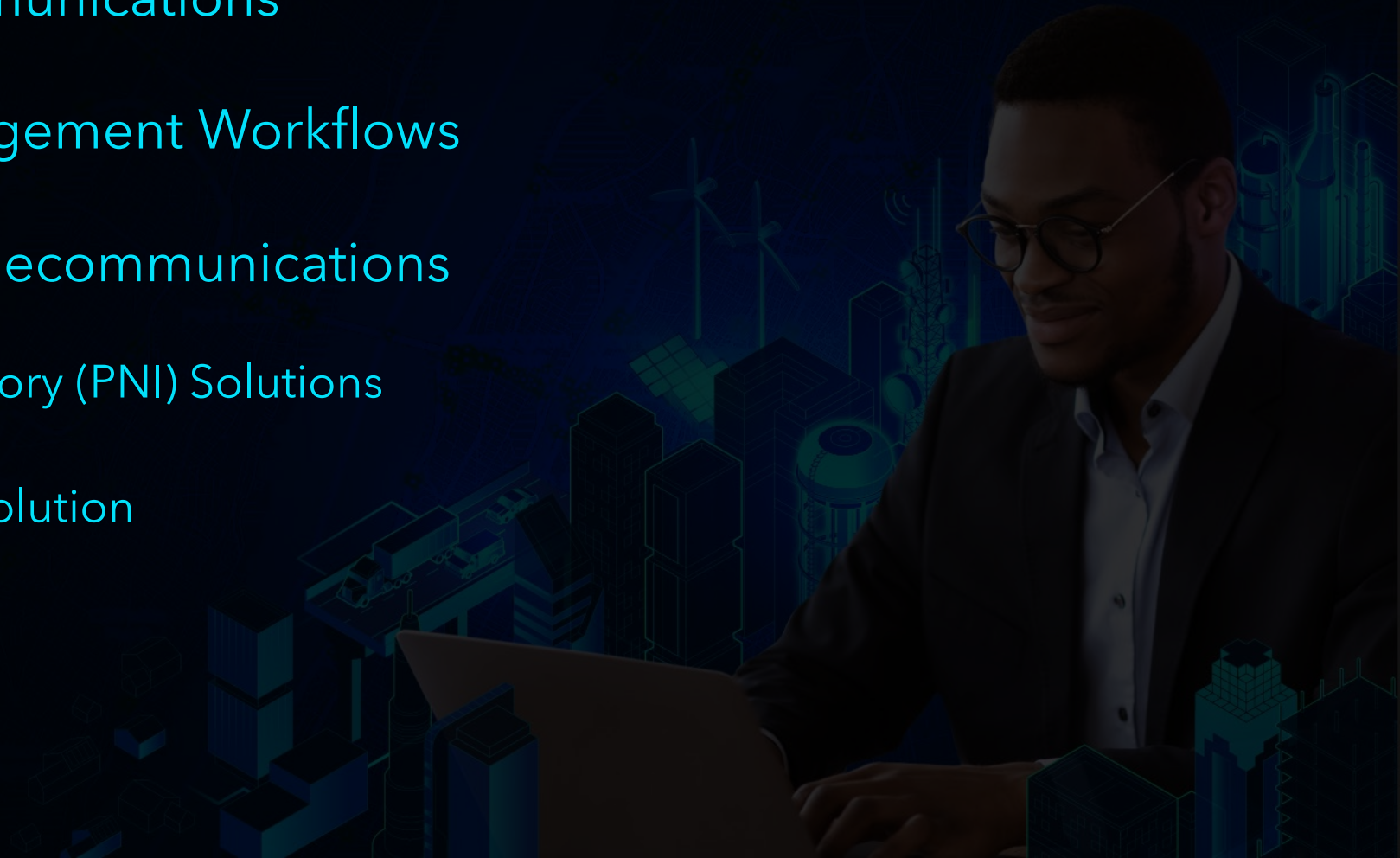
Patrick Huls

Esri Infrastructure Management
& GIS Conference



Agenda

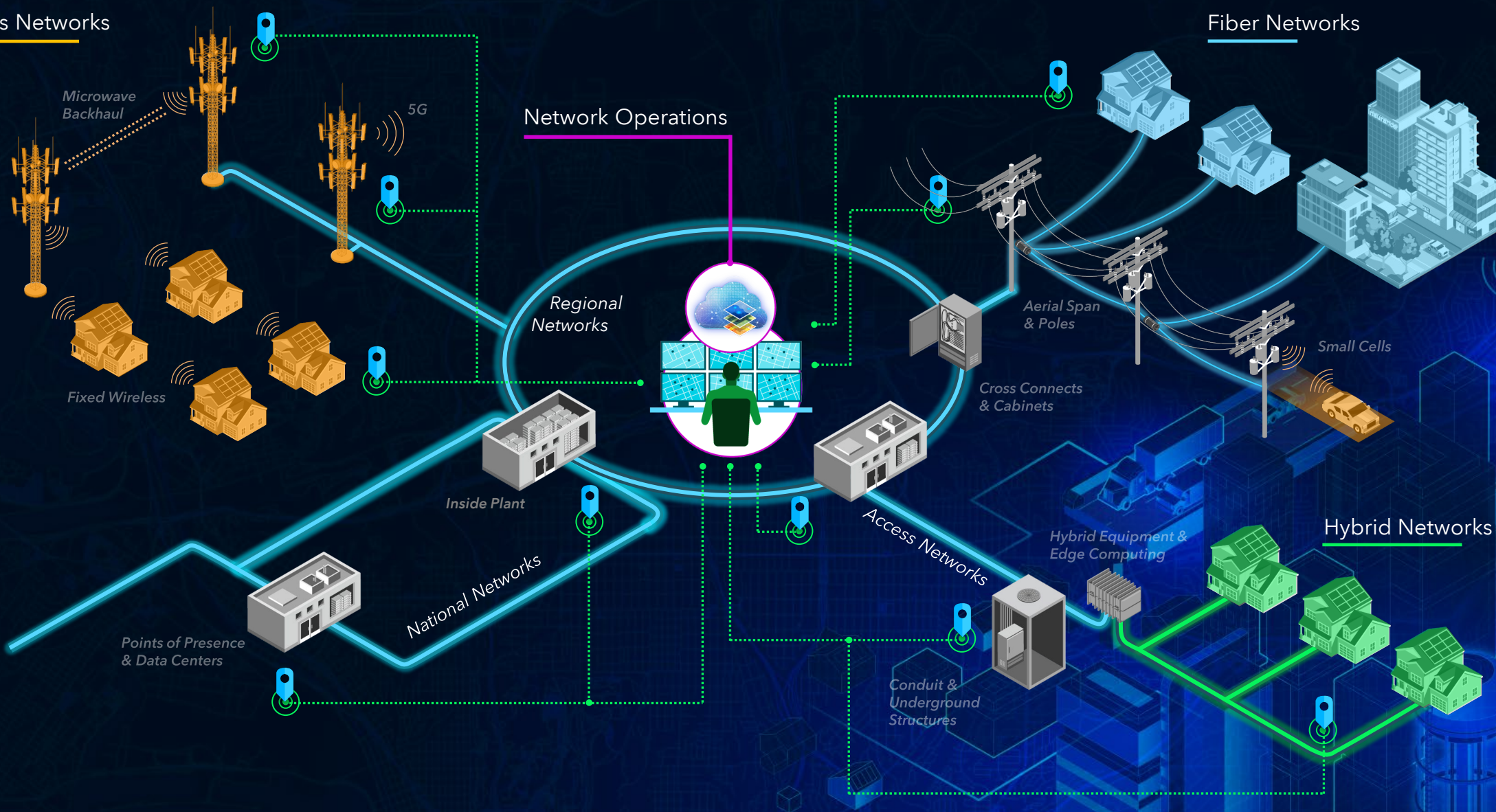
- Trends within Telecommunications
- Fiber Planning & Management Workflows
- ArcGIS Solutions for Telecommunications
 - Physical Network Inventory (PNI) Solutions
 - Network Path Planner Solution



NextGen Network Management

Wireless Networks

Fiber Networks

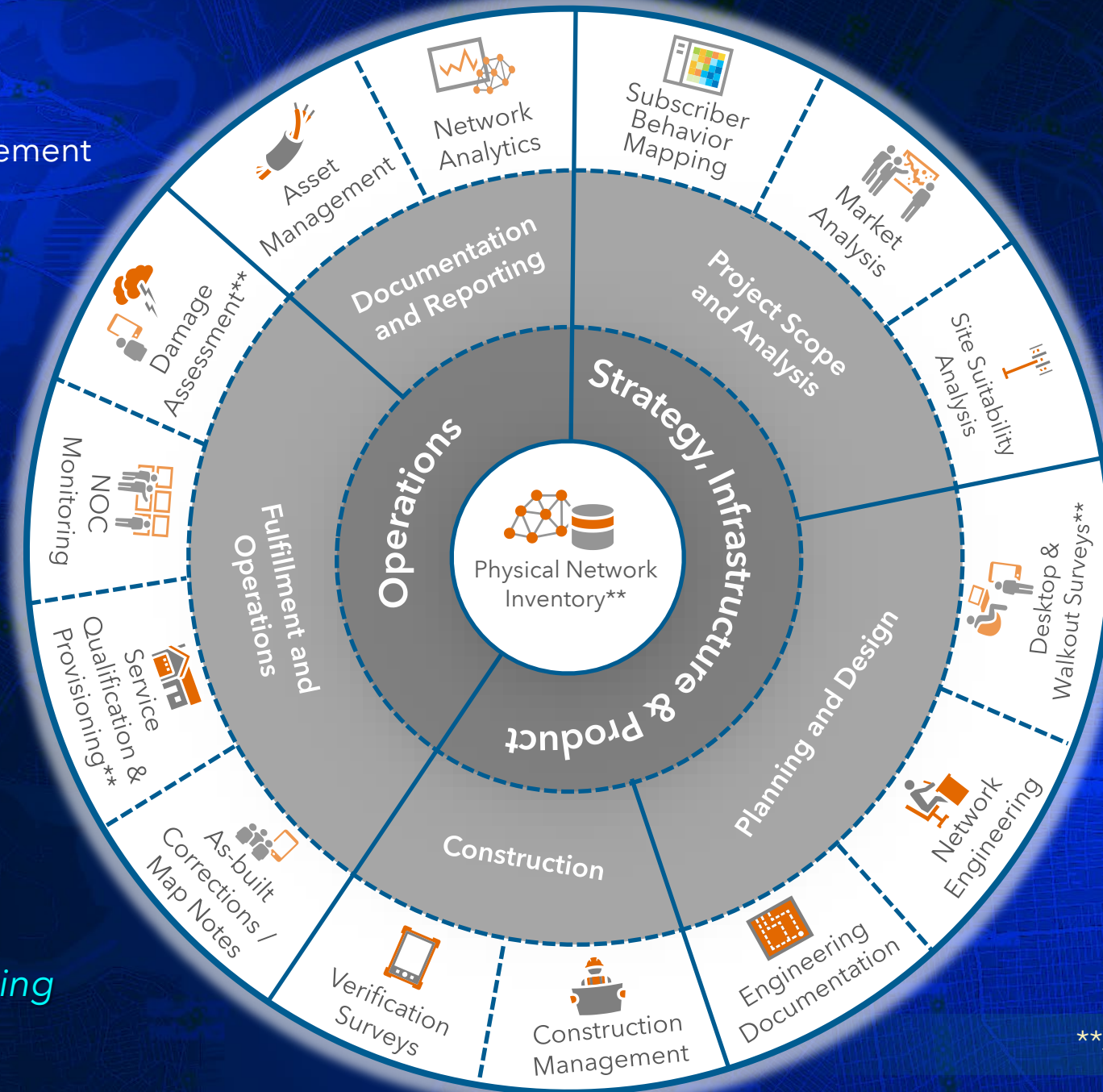


SEE
WHAT
OTHERS
CAN'T™

CAN'T
OTHERS

Workflows

Fiber Planning & Management



Customer Service

IT & New Services

Network Operations & Maintenance

Planning & Engineering

Sales & Marketing

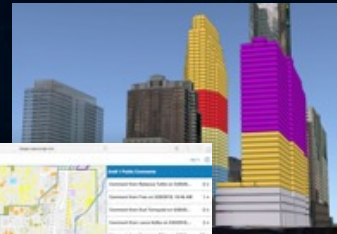
**Solution Templates Available

ArcGIS Solutions

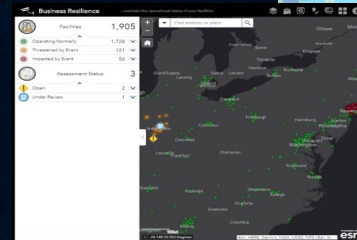
Brings you Industry-Specific Maps and Apps

- Extensive capabilities
- Developed with community
- Come with ArcGIS
- Fully supported

State & Local
Government



Utilities &
Telecommunications

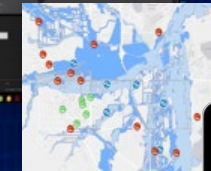


Business



Public Safety

Conservation



Tools

Data Management

Apps

Add-ins

Understand

Maps

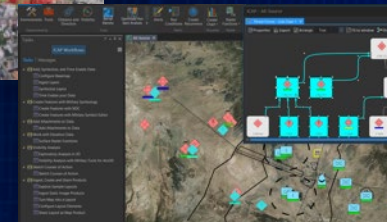
Performance

Dashboards

Engage

Operational
Systems

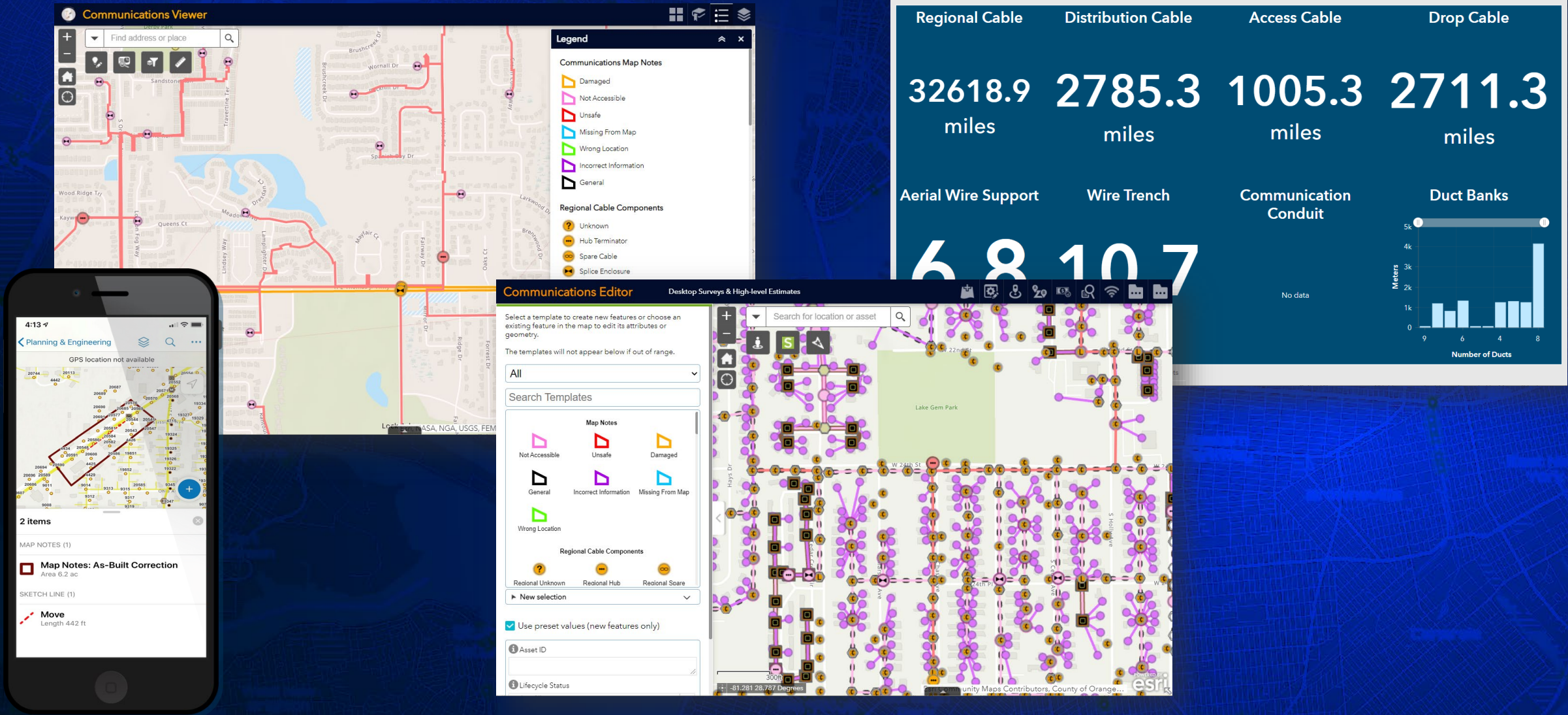
Defense



*Rapidly Delivering Value &
Implemented by Users, Partners, and Esri*

ArcGIS Solutions

Physical Network Inventory (PNI)



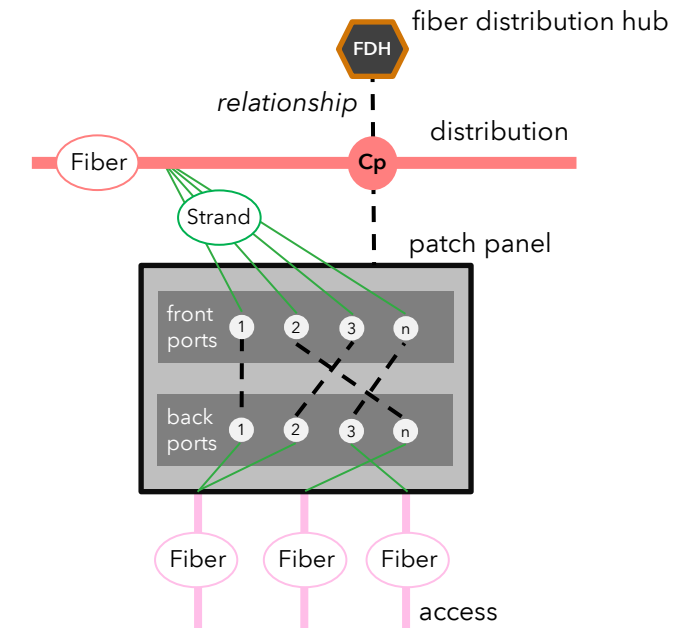
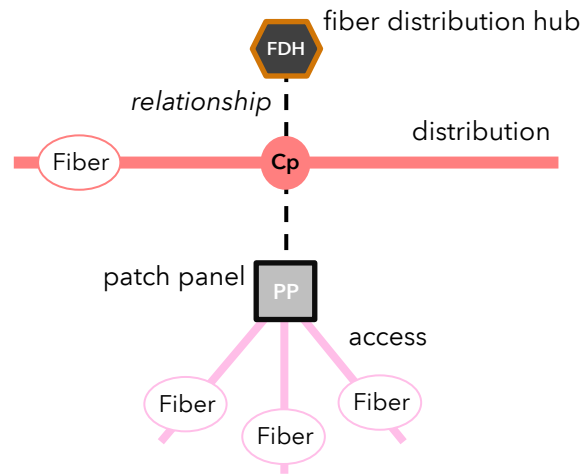
ArcGIS Solutions

Physical Network Inventory (PNI)

Communications Data Management

(FKA Communications Data Management for ArcGIS Online)

- Basic asset management
- High-level design
- Access your data everywhere
- Simplified data model



Communications Utility Network Foundation

(FKA Communications Data Management for ArcGIS Enterprise)

- Port to port enable better tracing
- Complex devices modeled
- OSP and ISP model
- More detailed strand management

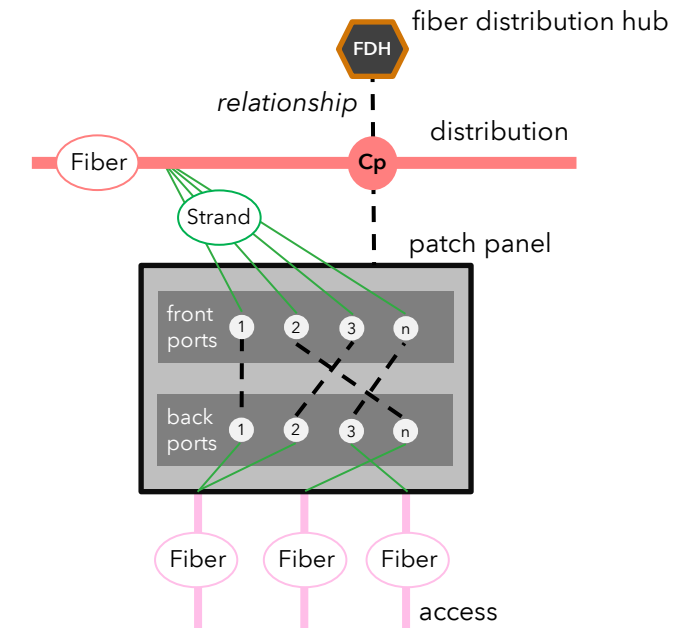
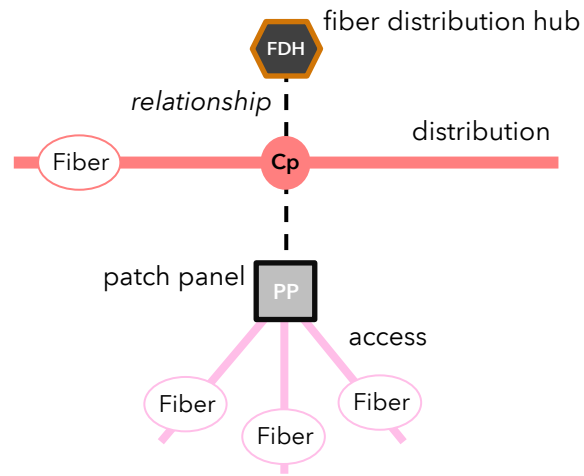
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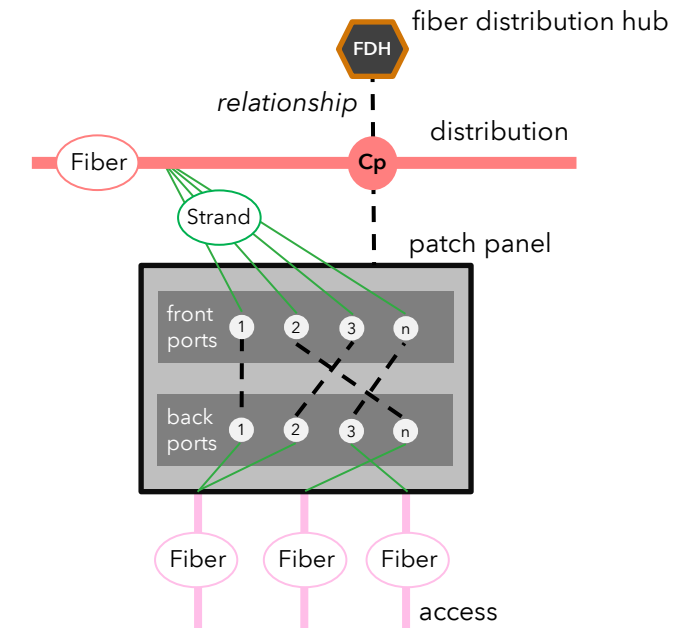
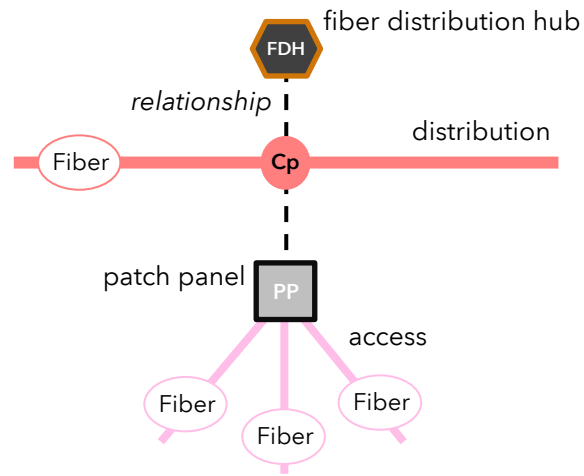
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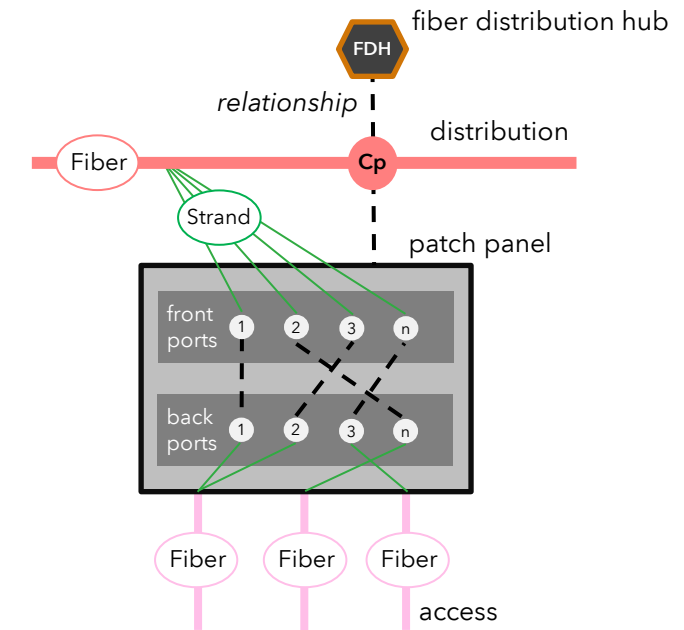
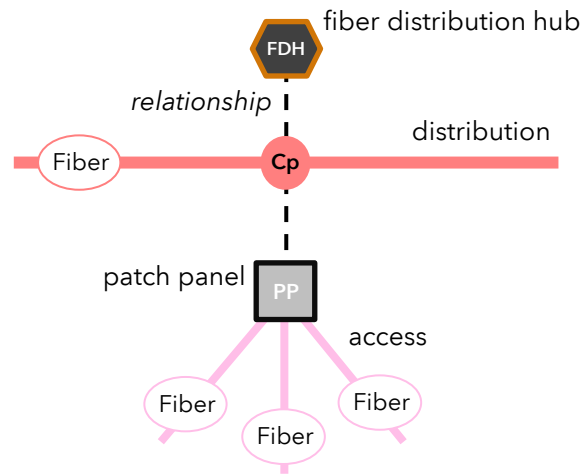
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Communications Utility Network Foundation

- Leverages ArcGIS Utility Network Management
- ArcGIS Enterprise feature layers & Enterprise GDB
- Solution template includes ArcGIS Pro project, asset package, & preconfigured maps
- Ideal for enterprise network management



What's New?

Communications Utility Network Foundation

Version 1.1 – June 2021

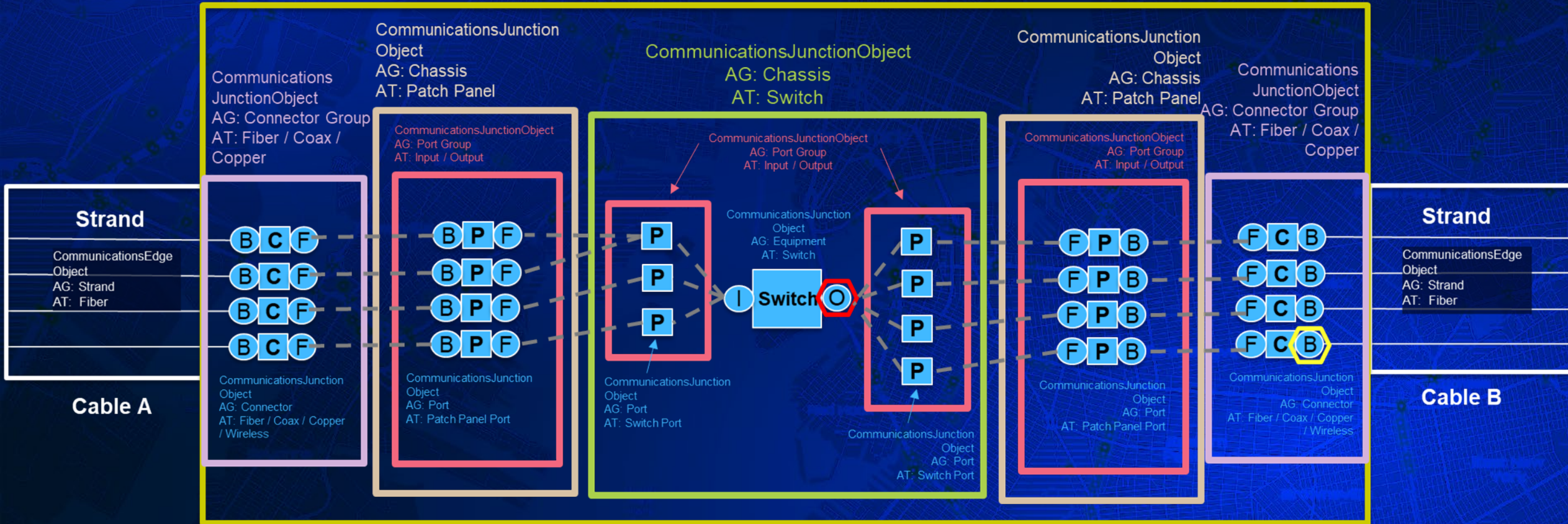


CommunicationsDevice

AG: <Network Level> Cable Component

AT: Hub Terminator

Regional Hub / CO



AG: Asset Group

AT: Asset Type

Front / Back Terminal Configuration

Single Terminal Configuration

Port In / Port Out Terminal Configuration

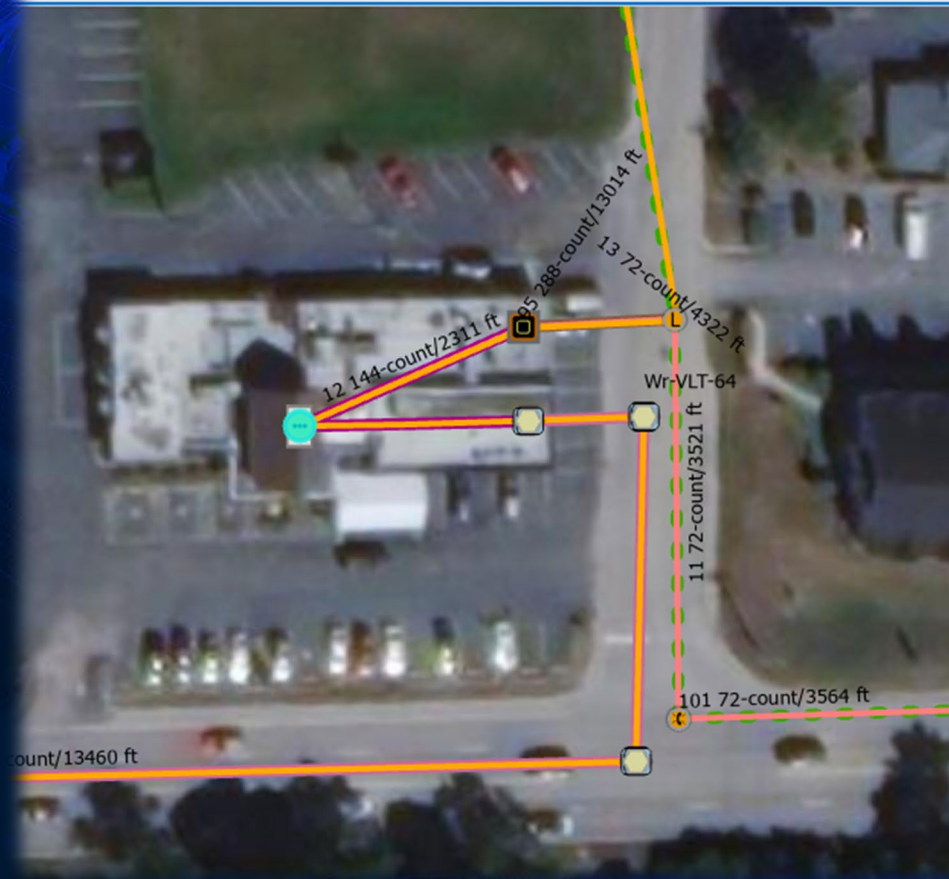
Junction – Junction Association

Switch - Subnetwork Controller

Circuit - Subnetwork Controller

Device Anatomy Upgrade

What's New?



Attributes

Selection Layers

Change the selection.

- Communications Device : Regional Cable Components (1)
 - Hub Terminator: CO1
 - Attached to (0)
 - Contains (10)
 - Communications Junction Object (10)
 - Chassis:Patch Panel:4229
 - Chassis:Patch Panel:4519
 - Chassis:Patch Panel:4809
 - Chassis:Switch:7132
 - Connector Group:Fiber:303
 - Connector Group:Fiber:448
 - Connector Group:Fiber:594
 - Connector Group:Fiber:3073
 - Connector Group:Fiber:3652
 - Connector Group:Fiber:10604
 - Contained within (1)
 - Wire Cabinet (1)
 - Unknown
 - Connected to edge (0)

Add New To Container

Template:

Connector Group - Copper

Search

Communications Junction Object

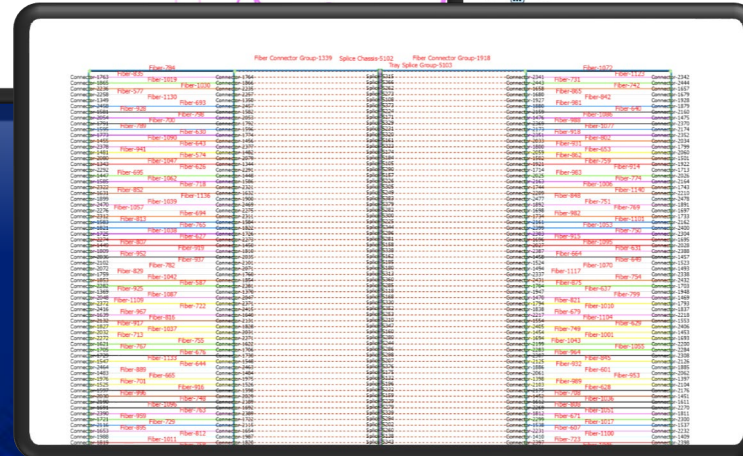
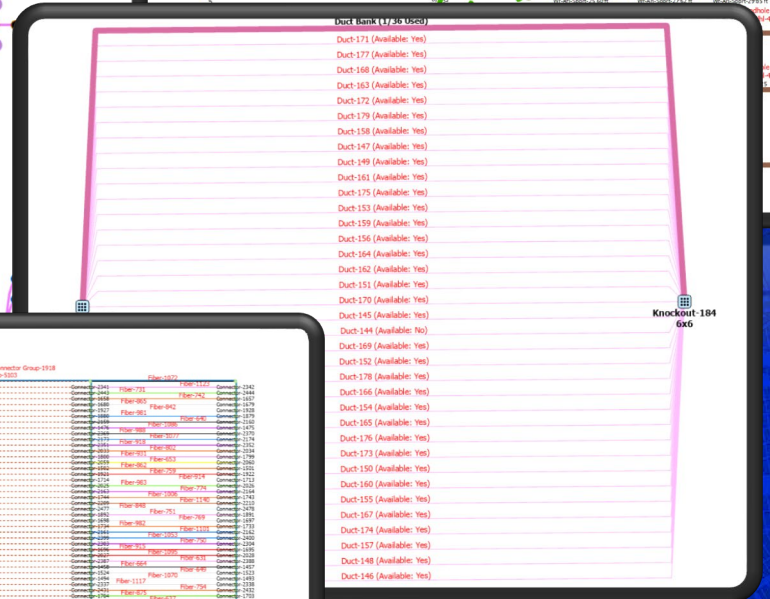
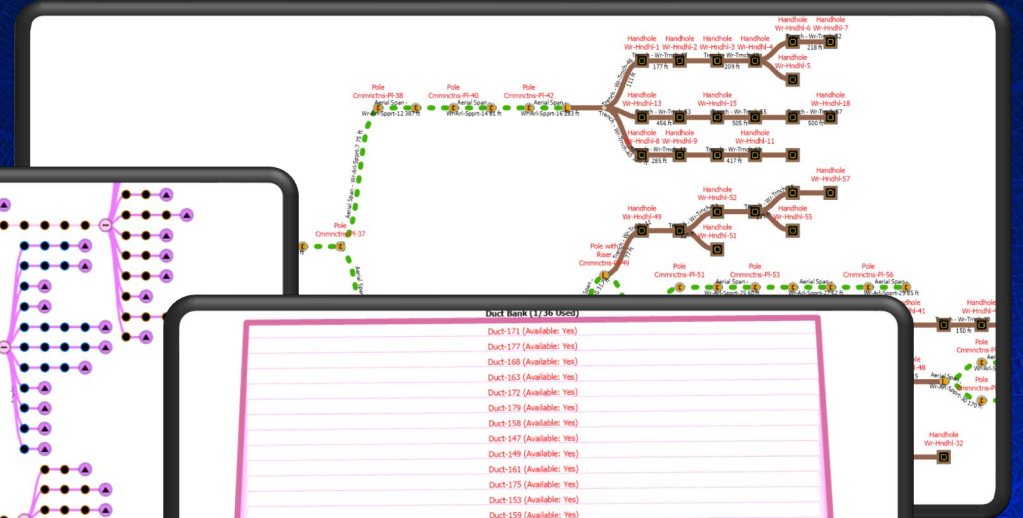
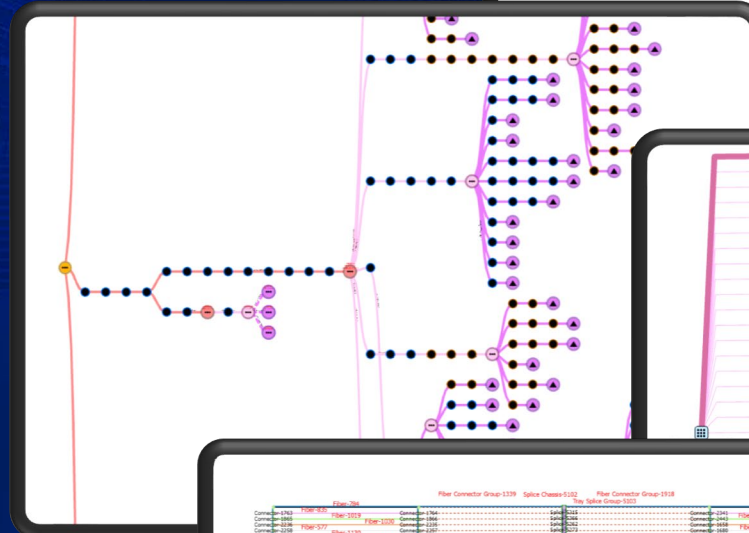
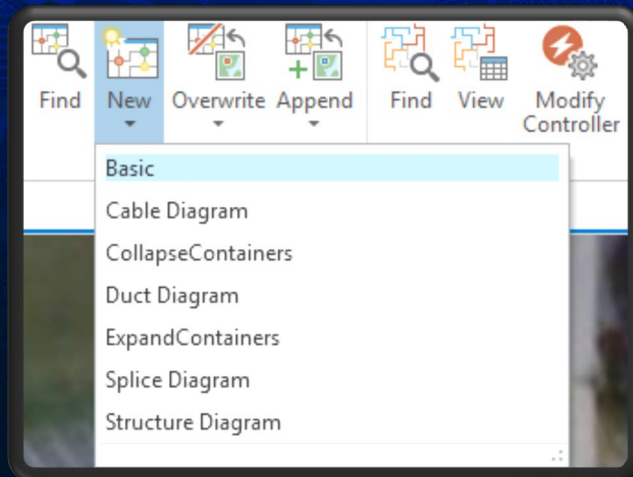
- Chassis - Amplifier 1x1
- Chassis - Amplifier 15x1
- Chassis - Amplifier 72x1
- Chassis - Demultiplexer 1x2
- Chassis - Demultiplexer 4x12
- Chassis - Multiplexer 15x5
- Chassis - Patch Panel 12x1
- Chassis - Patch Panel 24x1
- Chassis - Patch Panel 24x3
- Chassis - Patch Panel 72x1
- Chassis - Patch Panel 72x4
- Chassis - Patch Panel 144x1
- Chassis - Patch Panel 288x1
- Chassis - Splice 12x1
- Chassis - Splice 12x1 Coax
- Chassis - Splice 12x24
- Chassis - Splice 24x12
- Chassis - Splice 50x1 Copper
- Chassis - Splice 72x1
- Chassis - Splice 144x1
- Chassis - Splice 288x1
- Chassis - Splitter 1x4
- Chassis - Splitter 1x8
- Chassis - Splitter 1x16
- Chassis - Switch 576x288
- Connector Group - Copper
- Connector Group - Fiber

Editor Template for Spatial and Non-Spatial Feature

What's New?

Structure Diagram

Cable Diagram



Splice Diagram

Duct Diagram

PNI Roadmap

Now

- Network Management Release Plan
-

Near Term

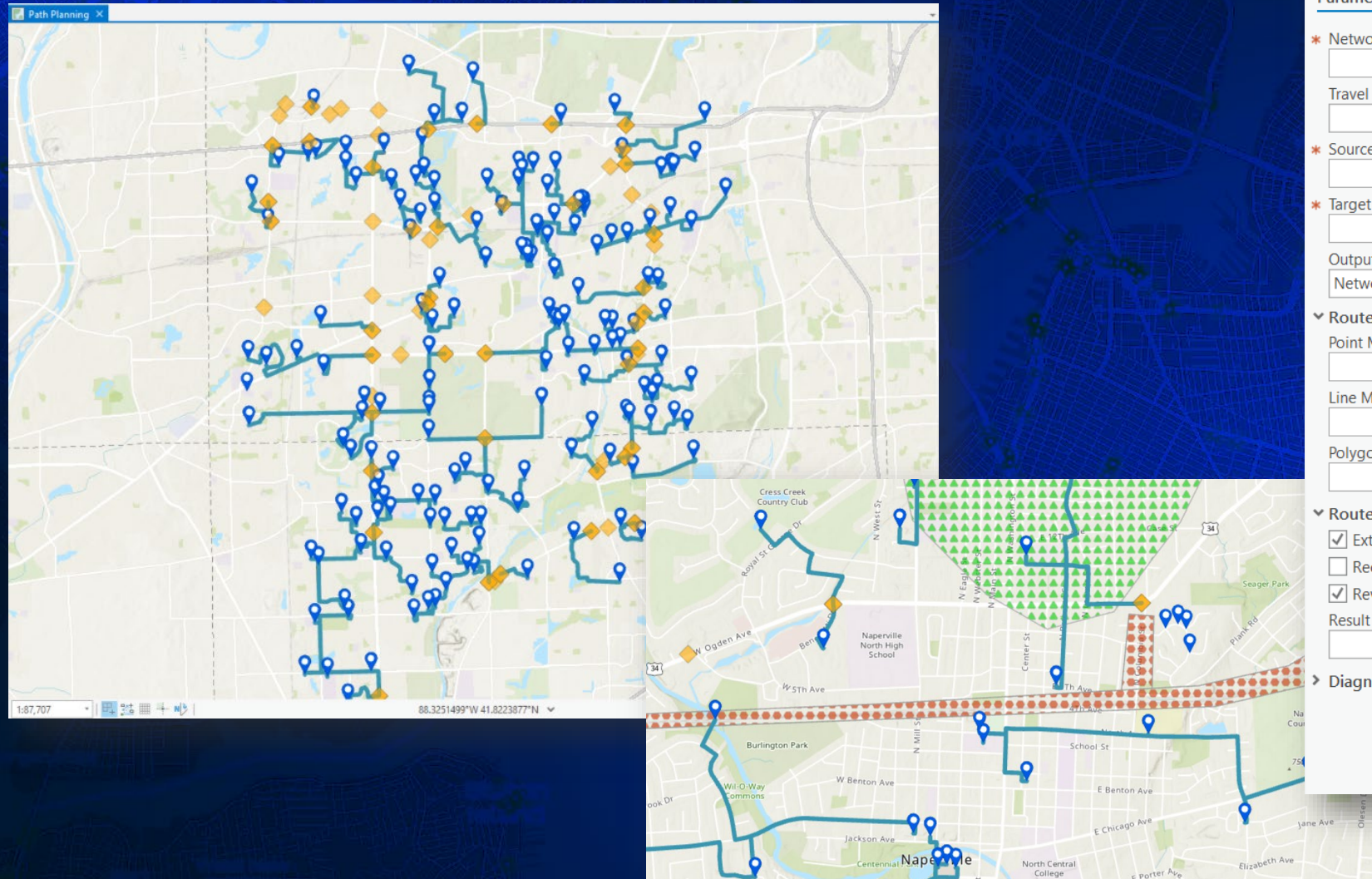
- Solution name change for simplification
 - Solution configurations
 - Trace configurations for ArcGIS Field Maps on cable tier **
-

Mid to Long Term

- OTDR and distance tracing **
 - Data loading performance improvement **
 - ArcGIS Field Maps support of non-spatial feature **
 - ArcGIS Field Maps support for switch and circuit tier tracing **
 - Developer Framework updates (Java# API, Runtime SDK) **
-

ArcGIS Solutions

Network Path Planner



Geoprocessing

Path Planner

Parameters Environments

* Network Data Source

Travel Mode

* Source Locations

* Target Locations

Output Workspace

NetworkPathPlanner.gdb

▼ Route Modifiers

Point Modifier

Line Modifier

Polygon Modifier

▼ Route Options

☒ Extend Routes

☐ Recalculate Network Locations

☒ Reverse Solve

Result Prefix

► Diagnostic Options

Run

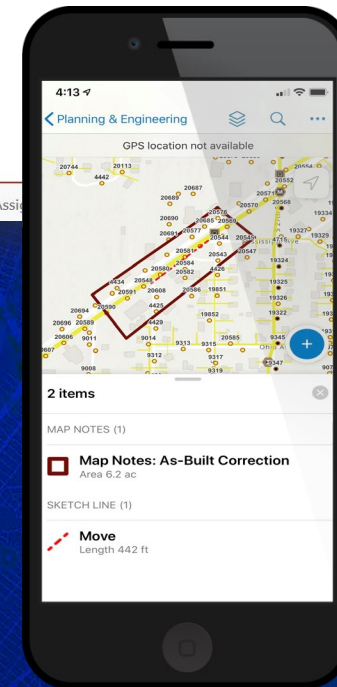
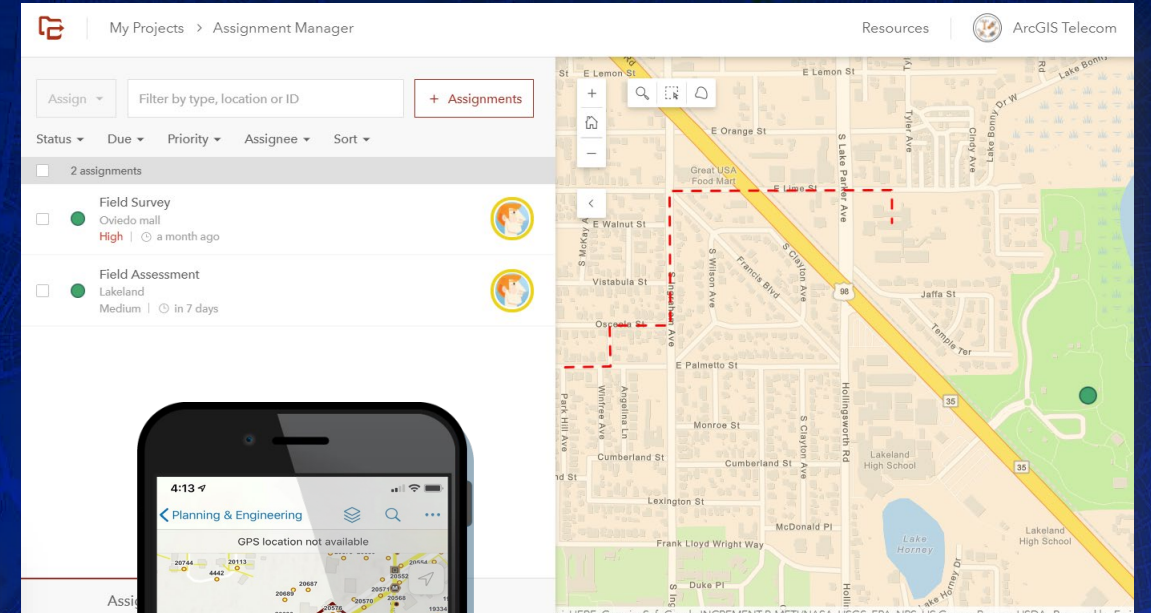
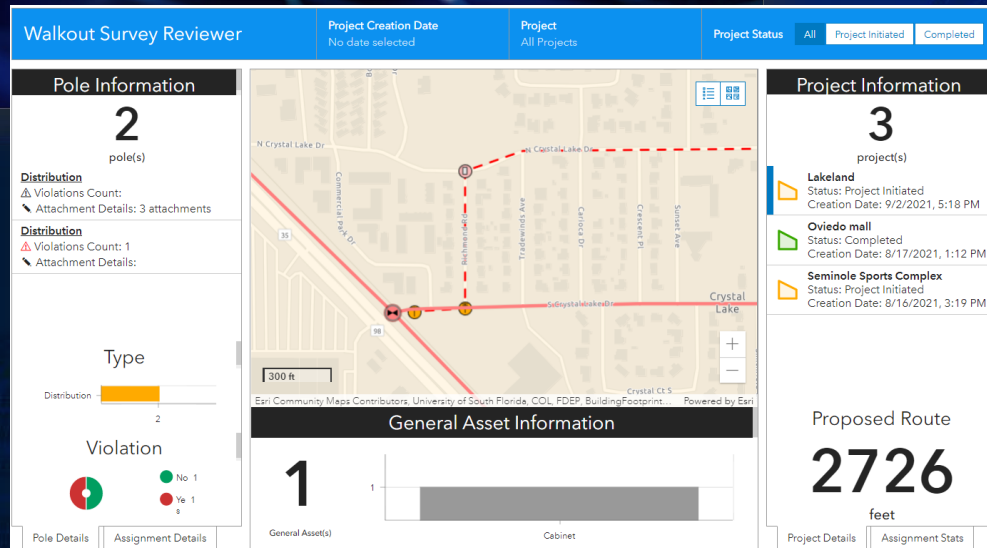
Network Path Planner

Kyle Crawford



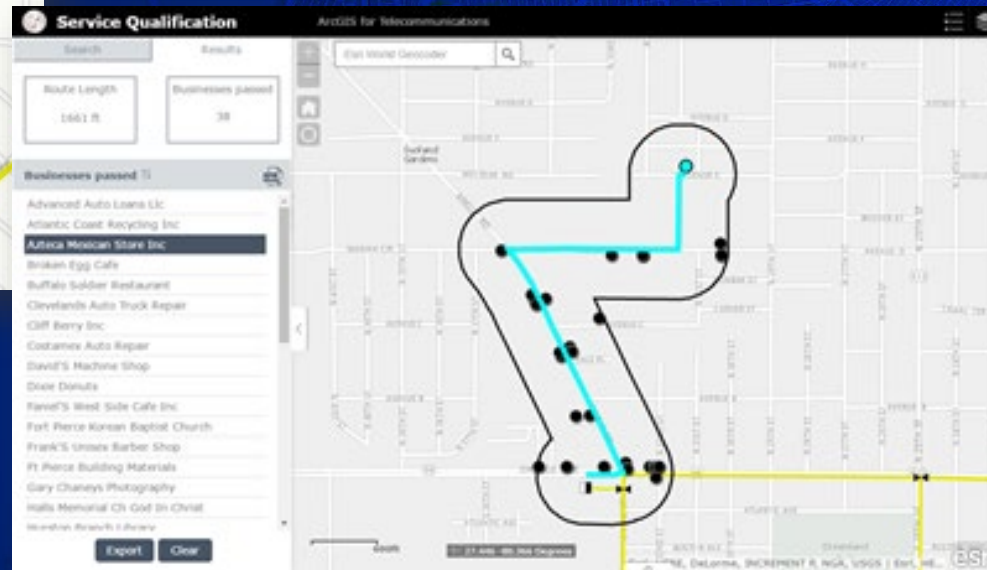
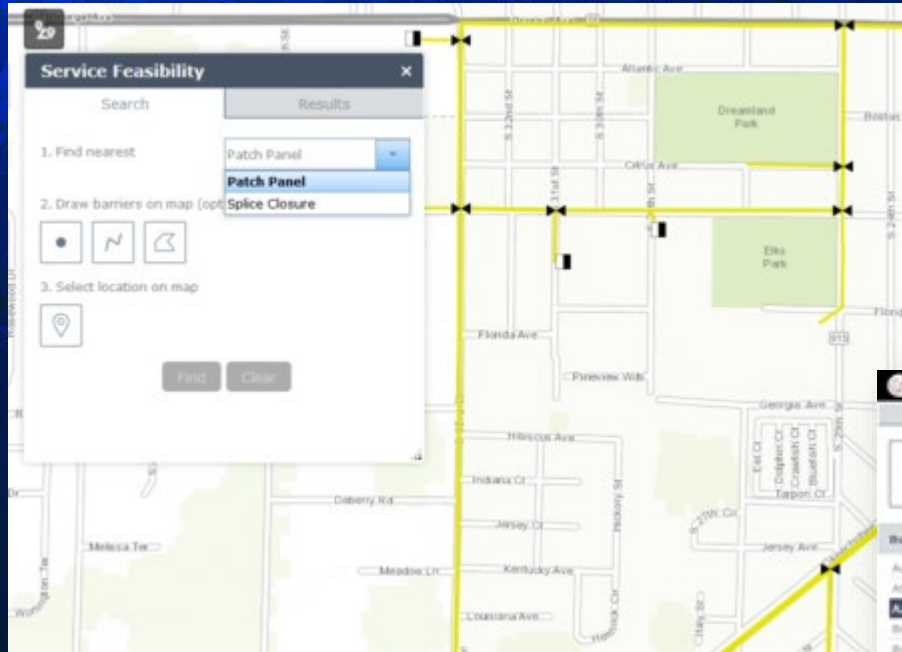
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Walkout Survey (coming soon)



ArcGIS Solutions

Service Qualification



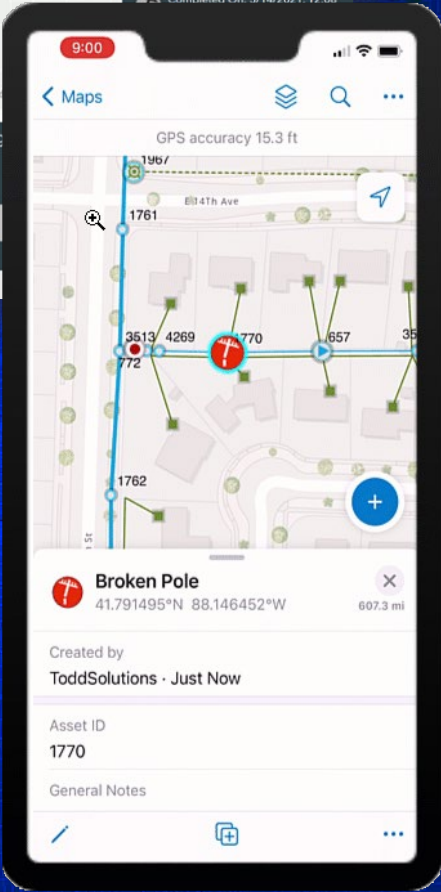
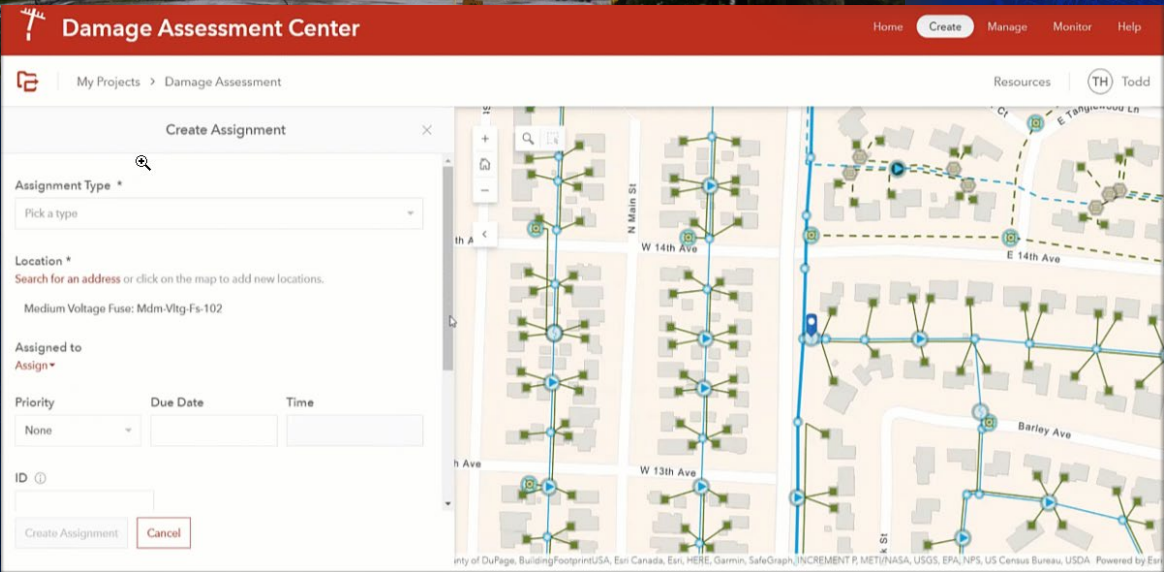
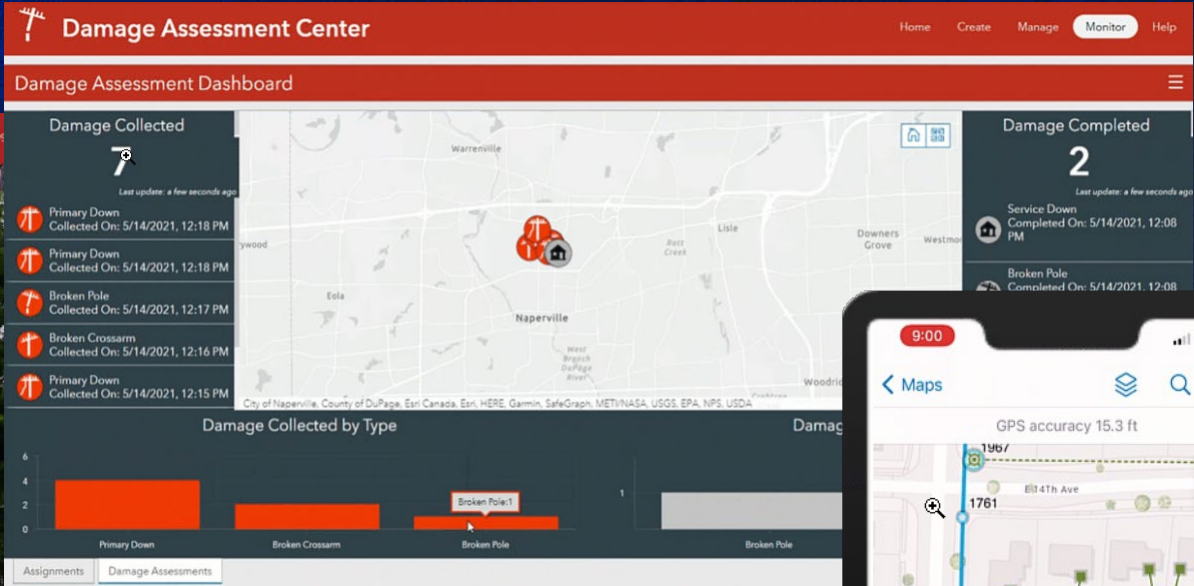
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Outage Damage Assessment



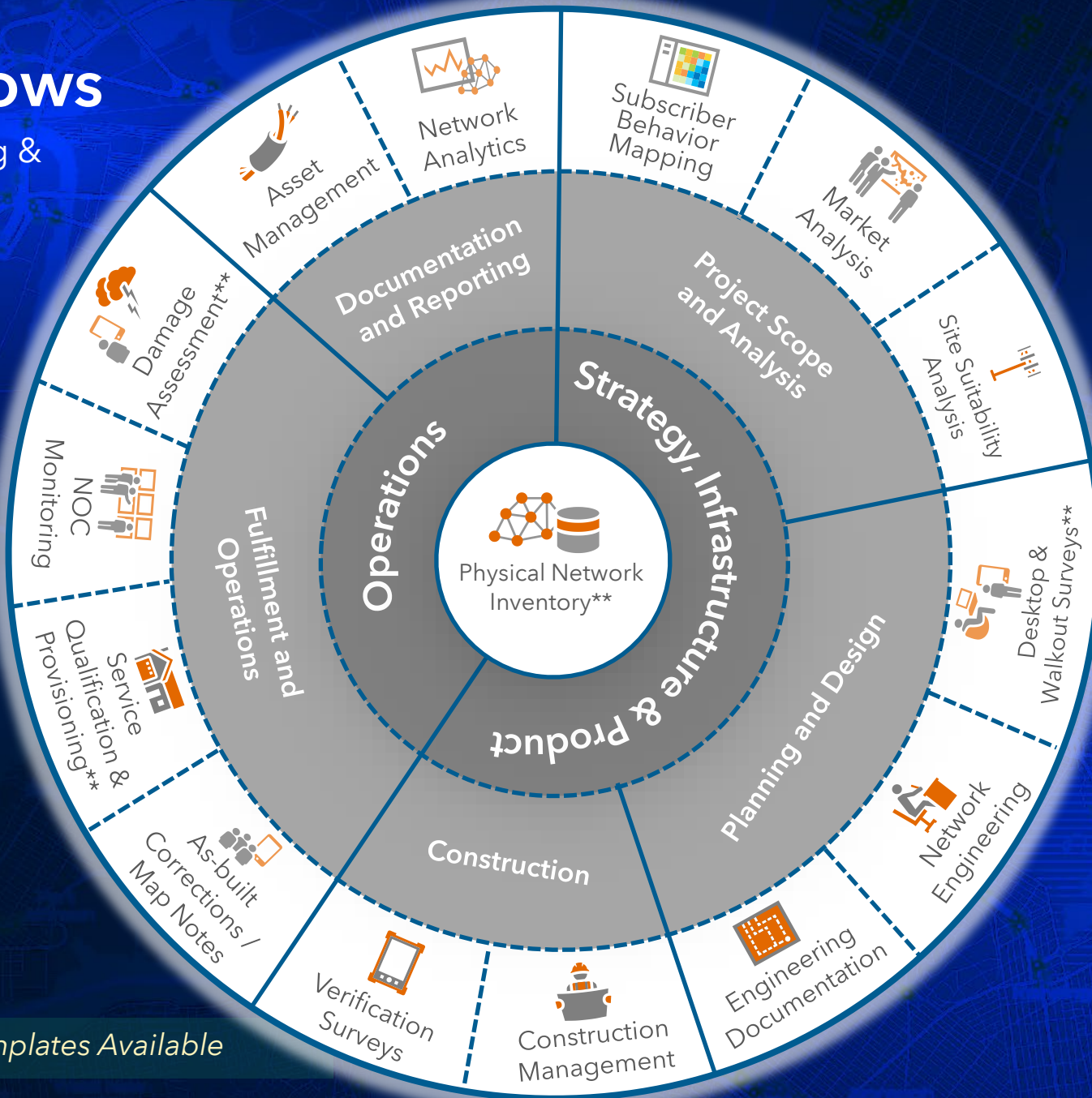
Damage Assessment Center

Create | Manage | Monitor



Workflows

Fiber Planning & Management



Patrick Huls

phuls@esri.com

@SpatialNinja

Check out...

solutions.arcgis.com

Telecom GIS in 5 Minutes

(<https://community.esri.com/t5/telecommunications-videos/bd-p/telecommunications-videos>)

**Solution Templates Available



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