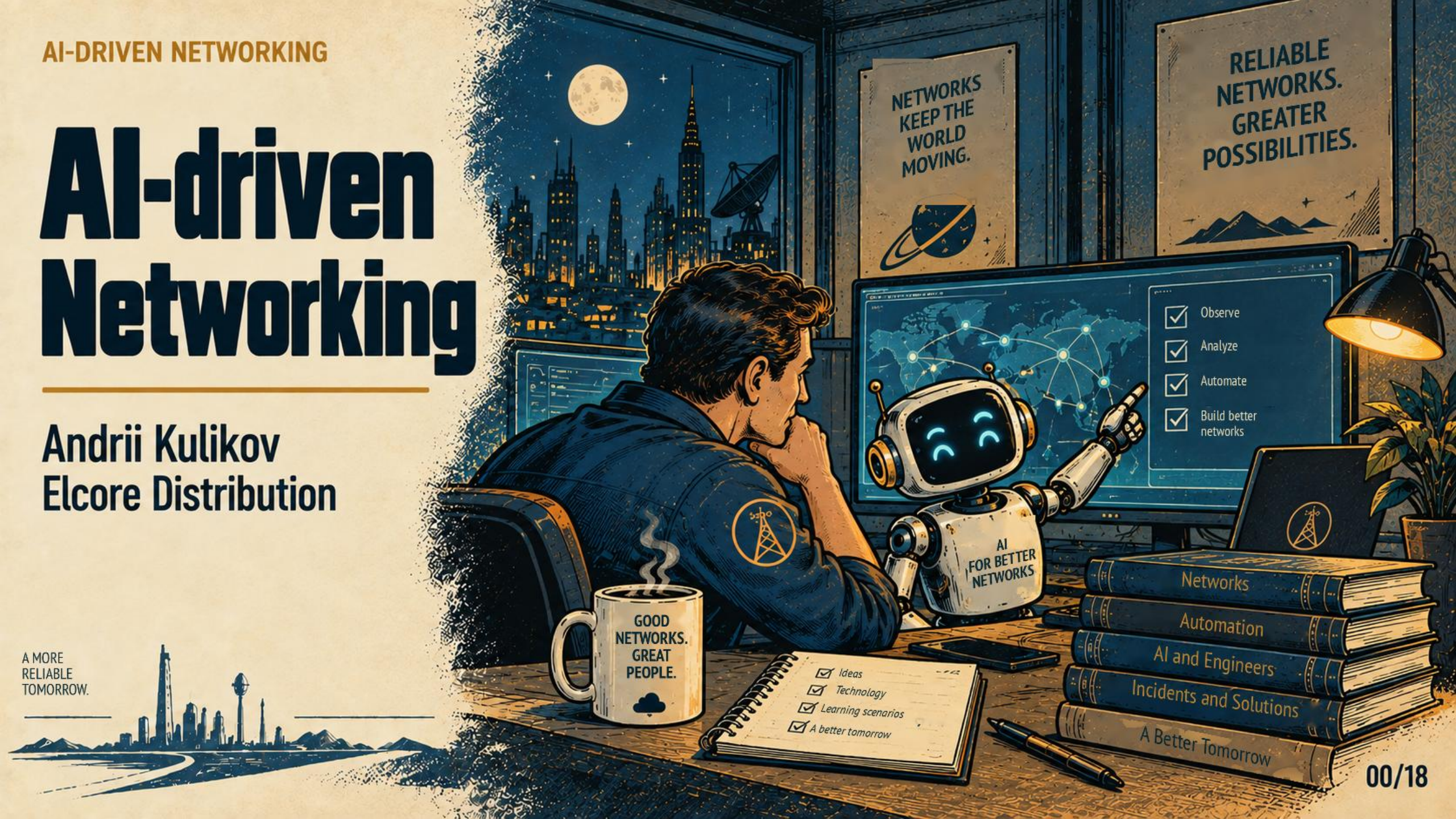
AI-DRIVEN NETWORKING

AI-driven Networking

Andrii Kulikov
Elcore Distribution



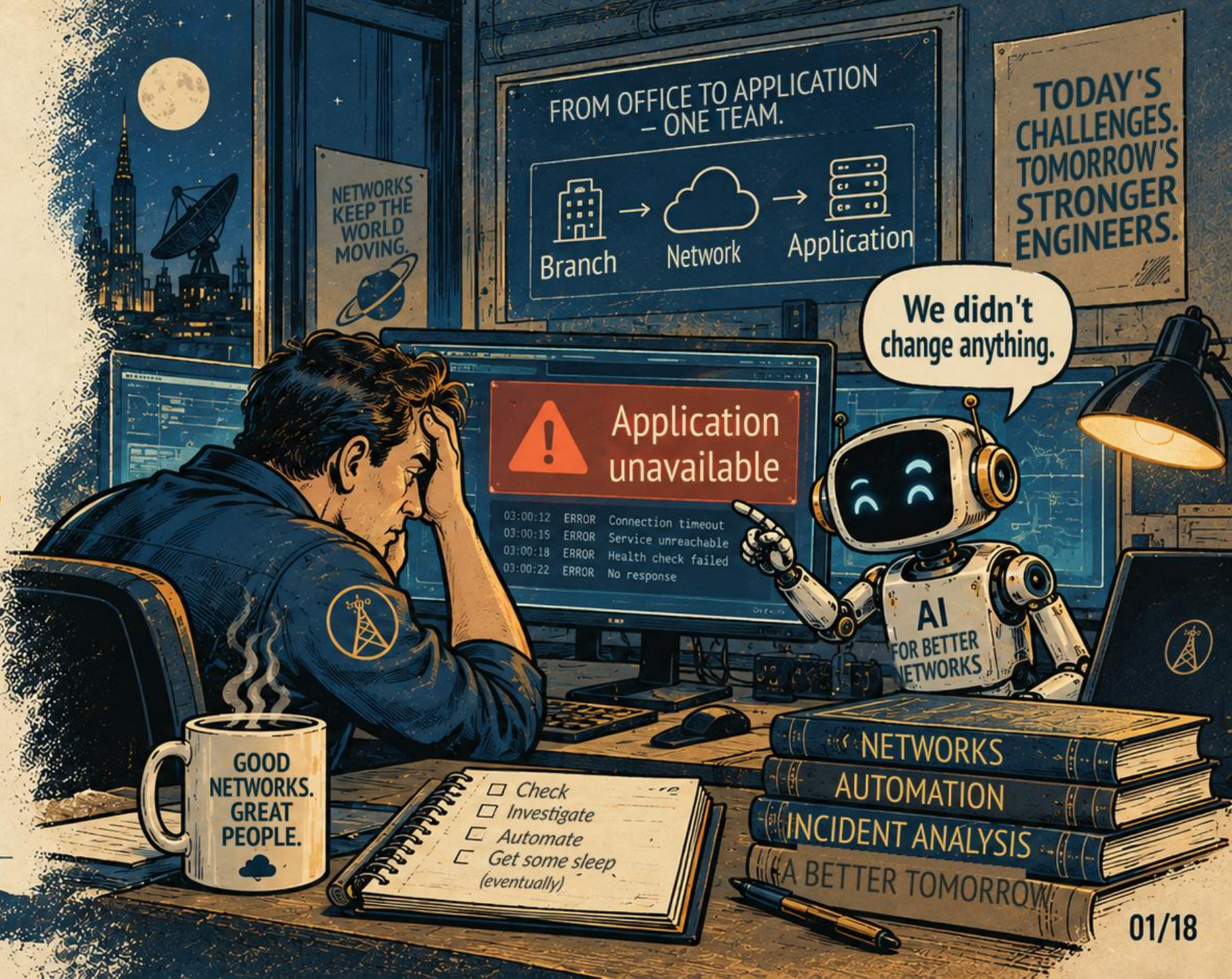
AI-DRIVEN NETWORKING

3 a.m.
Who gets the network back online?

From automation
to autonomous networks

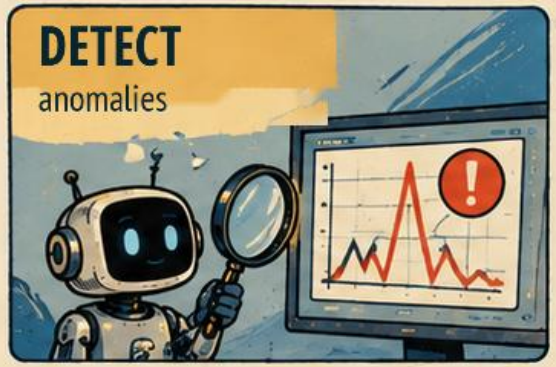
Learning scenario

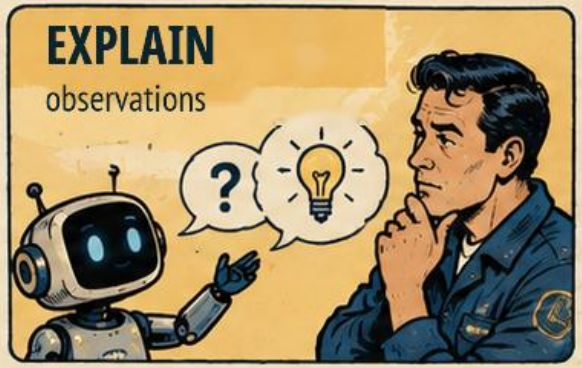


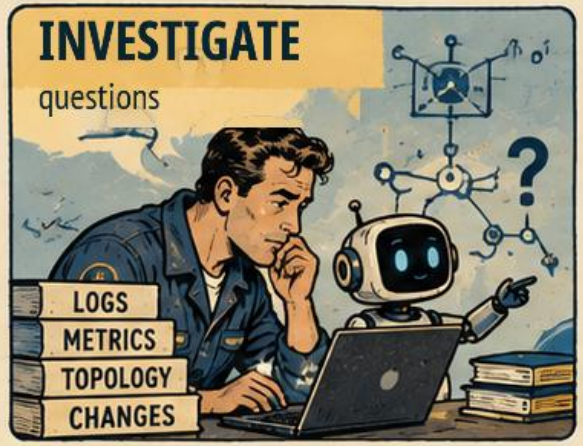


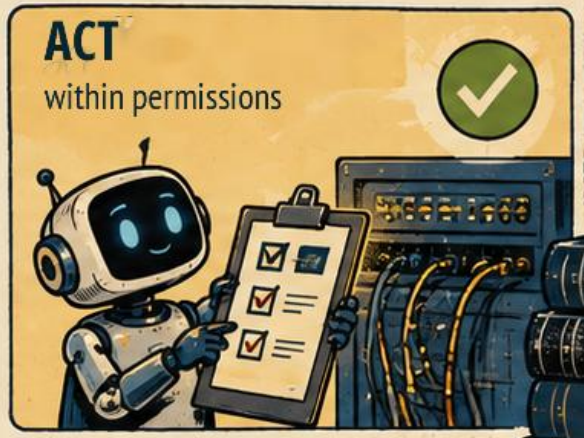
AI-DRIVEN NETWORKING

AI-driven networking is more than a chatbot.











Different roles—not just a chat.

AI-DRIVEN NETWORKING

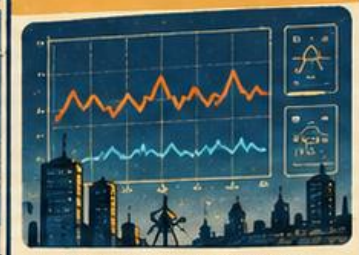
From observation to choosing the next action

Each new layer adds capabilities.

THEN

NOW

Observation



See what's happening

TELEMETRY AND VISIBILITY

+ Automation



Work faster and more consistently

SCRIPTS AND AUTOMATED ACTIONS

+ Desired state



Know how it should be

MODELING AND CONFORMANCE CHECKS

+ Analytics



Understand causes. Find opportunities.

CONTEXT CORRELATION PREDICTION

+ Agent-led decisions



Propose and choose the best next step

AUTONOMOUS RECOMMENDATIONS AND GOAL-DIRECTED ACTIONS

MORE RELIABLE NETWORKS FOR A BETTER TOMORROW.

SEE FURTHER, TOGETHER.

New layers build on the ones before them.

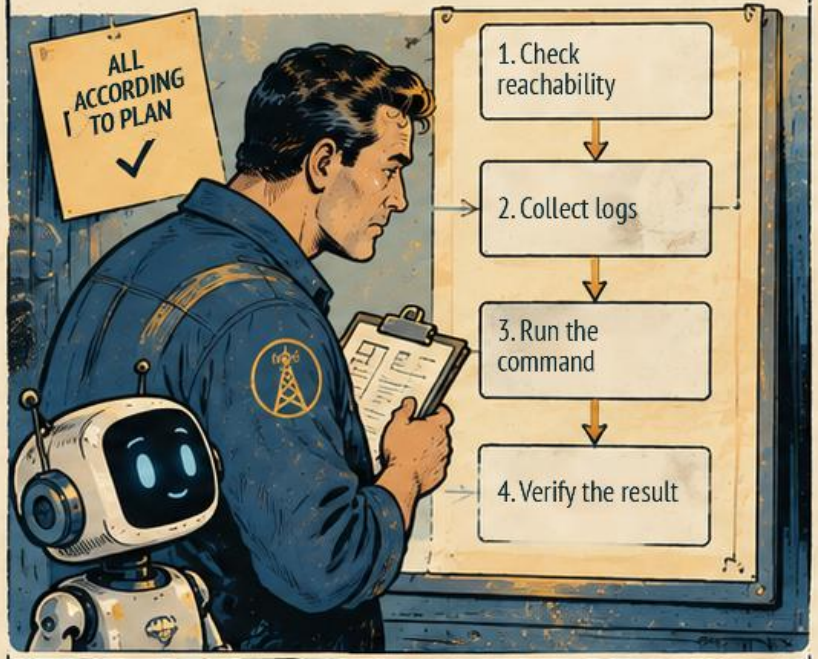
AI-DRIVEN NETWORKING

Script, assistant, agent

Who chooses the next step?

SCRIPT

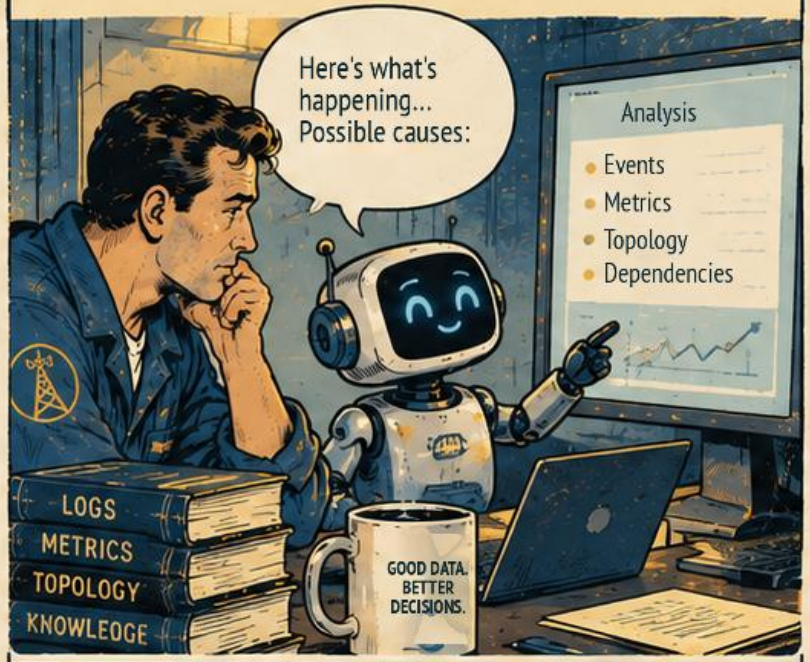
Conditions and steps are predefined



Predefined logic.
Works for known scenarios.

ASSISTANT

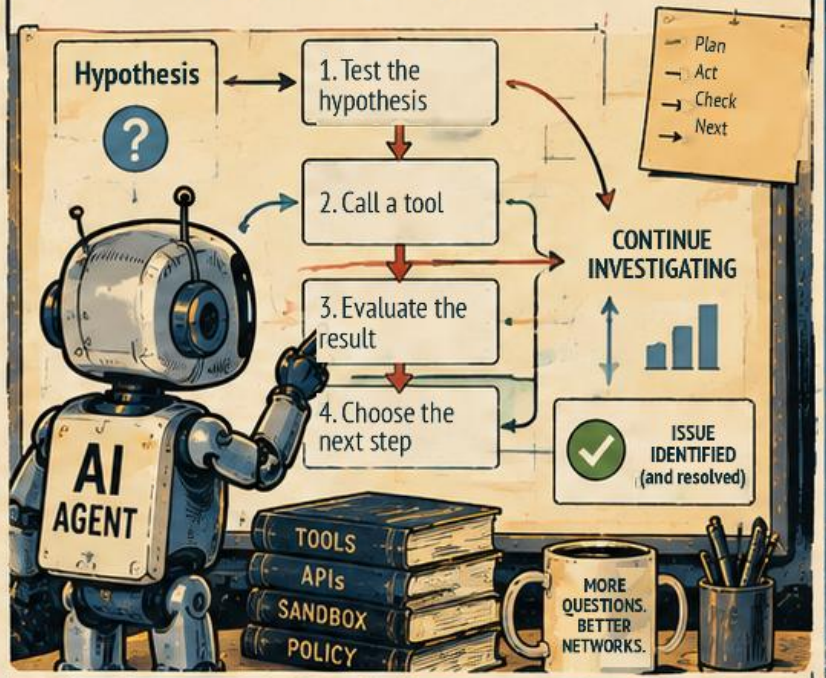
Presents and explains data to a human



**Helps make sense of the data.
The human decides.**

AGENT

Chooses the next step itself



Investigates, chooses, verifies.
Acts within defined limits.

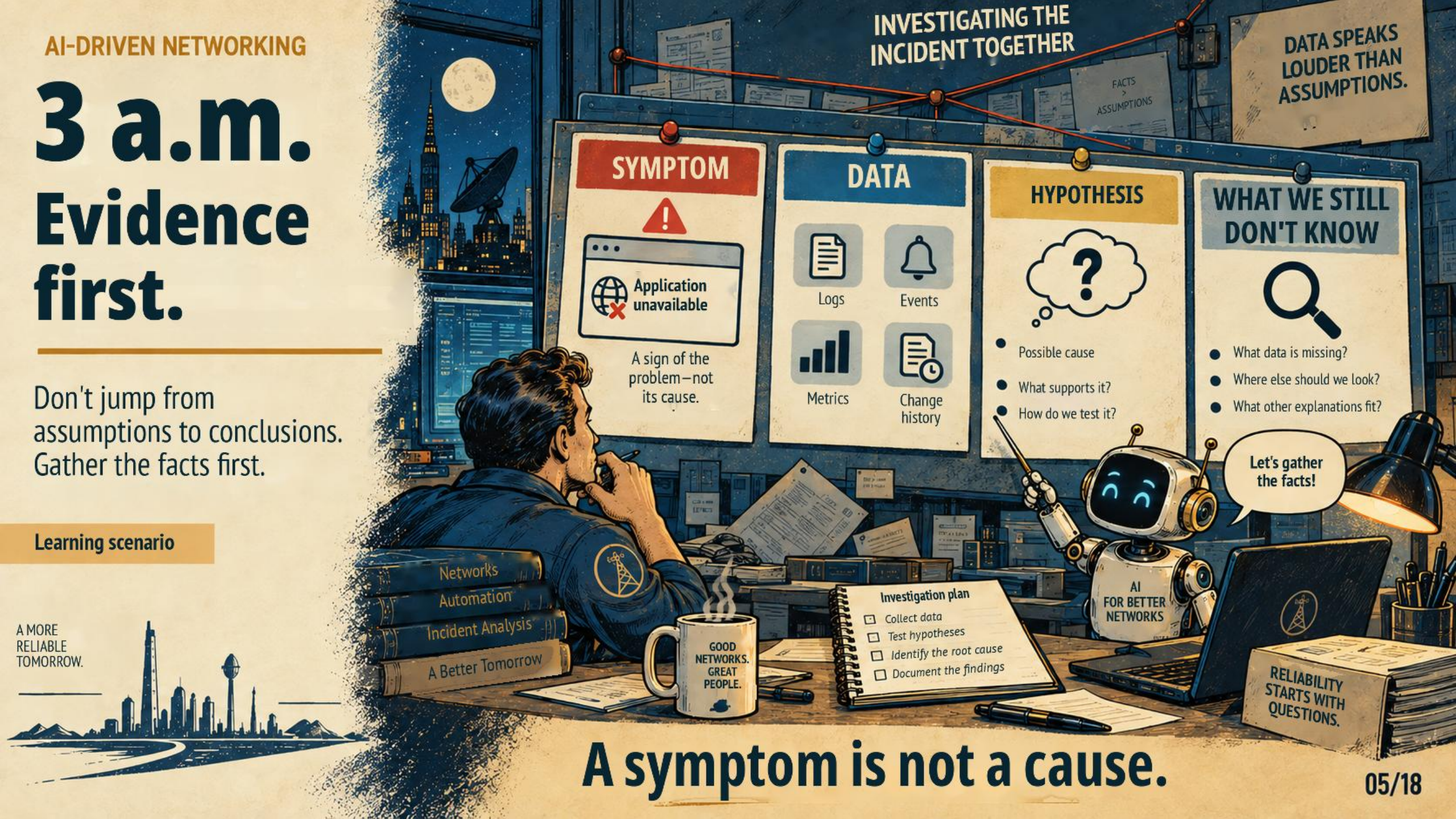
Different roles. Greater capabilities.

AI-DRIVEN NETWORKING

3 a.m. Evidence first.

Don't jump from assumptions to conclusions. Gather the facts first.

Learning scenario



A symptom is not a cause.

05/18

AI-DRIVEN NETWORKING

Investigate ≠ change

Analyze the data.
Changes require
authorization.



Investigation brings insight.
Write access is a separate decision.

06/18

AI-DRIVEN NETWORKING

What these solutions can do

Different capabilities for more resilient, manageable networks.

ANALYTICS

- See network state
- Detect anomalies
- Track trends



INVESTIGATION

- Find causes
- Connect events
- See the full picture



Network context

Topology • Events • Metrics • Changes

CHANGE VALIDATION

- Assess impact
- Check before and after
- Reduce risk



CONTROLLED EXECUTION

- Run under defined rules
- Monitor execution
- Record the outcome





Not every solution covers every capability.

07/18

AI-DRIVEN NETWORKING

Autonomy is about the use case, not the whole network.

A technology can handle one use case autonomously without making the whole network autonomous.

A BOUNDED AUTONOMOUS USE CASE

Clear scope. Defined inputs and outputs.

1 AUTHORIZED ACTION

Automatically restart a stalled process

2 EXECUTION

AI acts within the defined use case

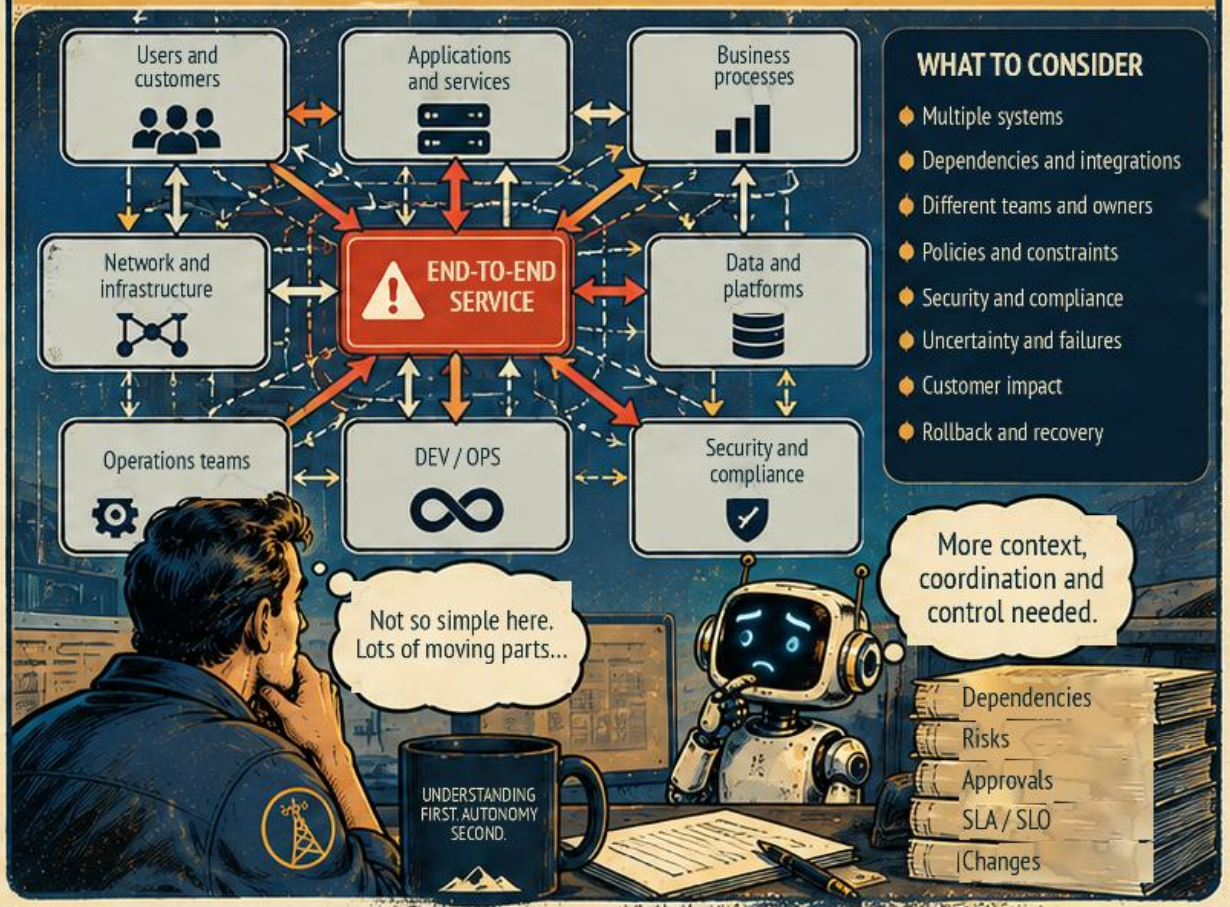
3 OUTCOME VERIFICATION

Verify that the process is running and working



AN END-TO-END SERVICE USE CASE

Multiple domains, dependencies and teams. More than automation.



A MORE RELIABLE TOMORROW.

Assess autonomy one use case at a time.

AI-DRIVEN NETWORKING

Platform, open-source building blocks or hybrid?

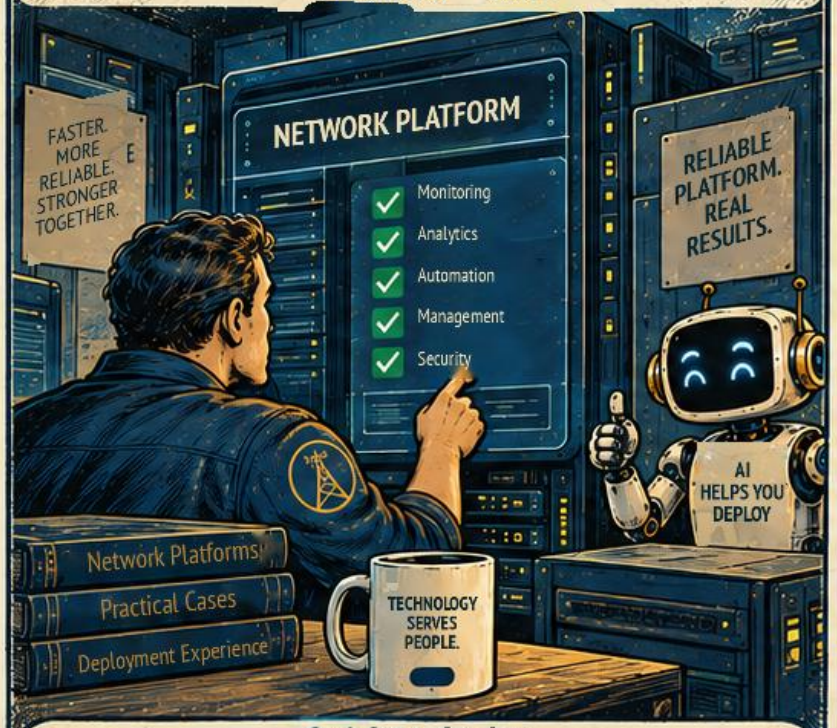
ONE NETWORK. MORE POSSIBILITIES TOMORROW.

Three ways to build a solution. Three models of accountability.

PLATFORM

Ready-made system

Provider + team

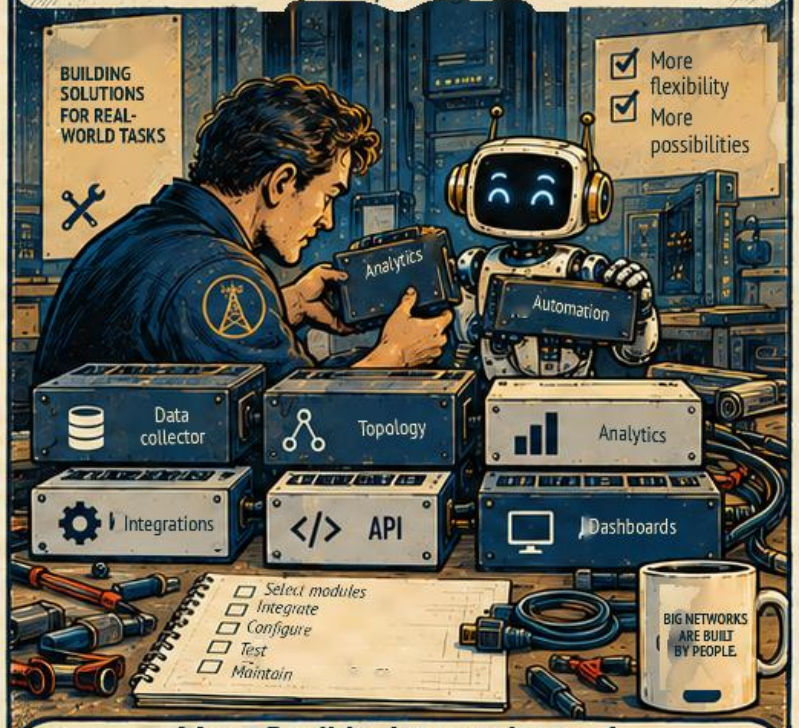


Quick to deploy.
One accountability framework.

OPEN-SOURCE BUILDING BLOCKS

Assembled from modules

Team / integrator

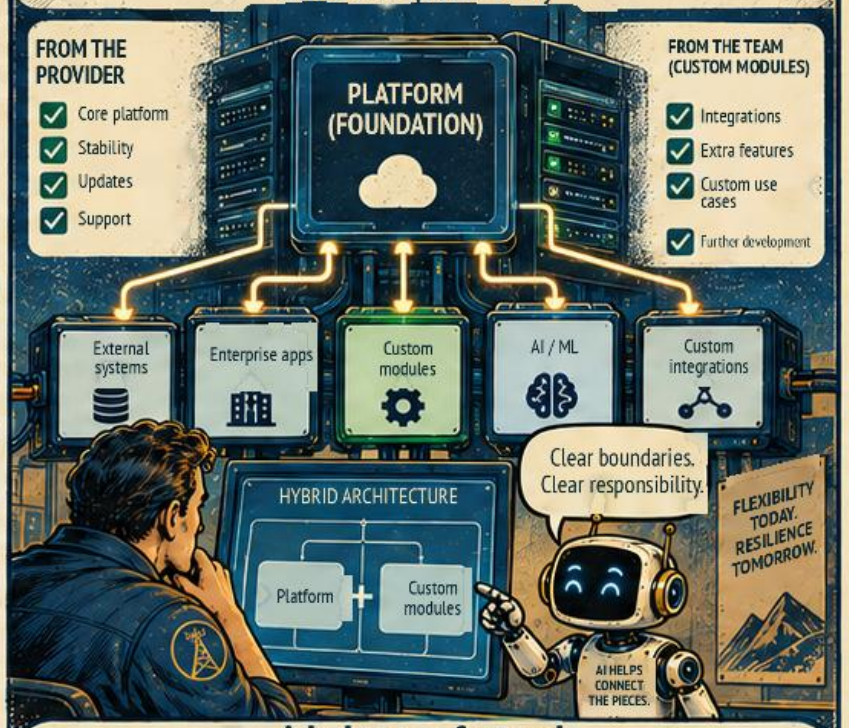


More flexible. Integration and support belong to the team.

HYBRID

Platform + custom modules

Shared responsibility



A balance of speed, flexibility and control.

Who owns the whole system?

Architecture is about capabilities—and ownership.

A MORE RELIABLE TOMORROW.

An up-to-date network map is part of the solution

Sound analysis and action need an up-to-date view.

METRICS AND EVENTS



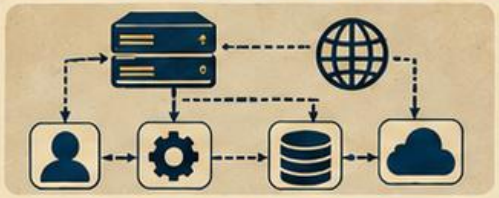
See the current state and anomalies

UP-TO-DATE TOPOLOGY



Understand the actual structure and connections

SERVICE DEPENDENCIES

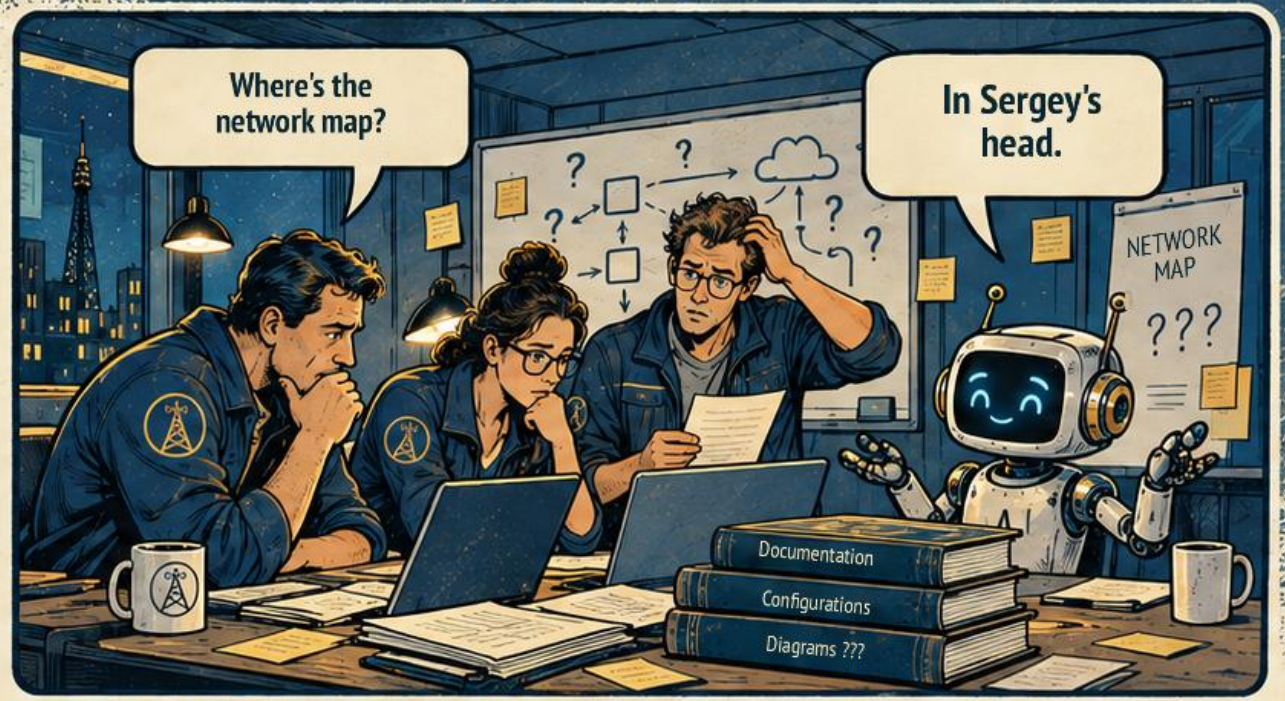


Know what affects what

CHANGE HISTORY

- 10:24 Configuration changed
- 09:17 New service deployed
- 08:03 Rule updated
- 07:41 Topology changed

See what changed—and when





A MORE RELIABLE TOMORROW.

What's documented isn't always what's running.

AI-DRIVEN NETWORKING

Between "I suggest" and Enter

A safe path
from idea to action



Between recommendation and action: a chain of checks.

AI-DRIVEN NETWORKING

10 a.m. A new segment is more than a VLAN

Good segmentation means the right access, strong protection and uninterrupted services.



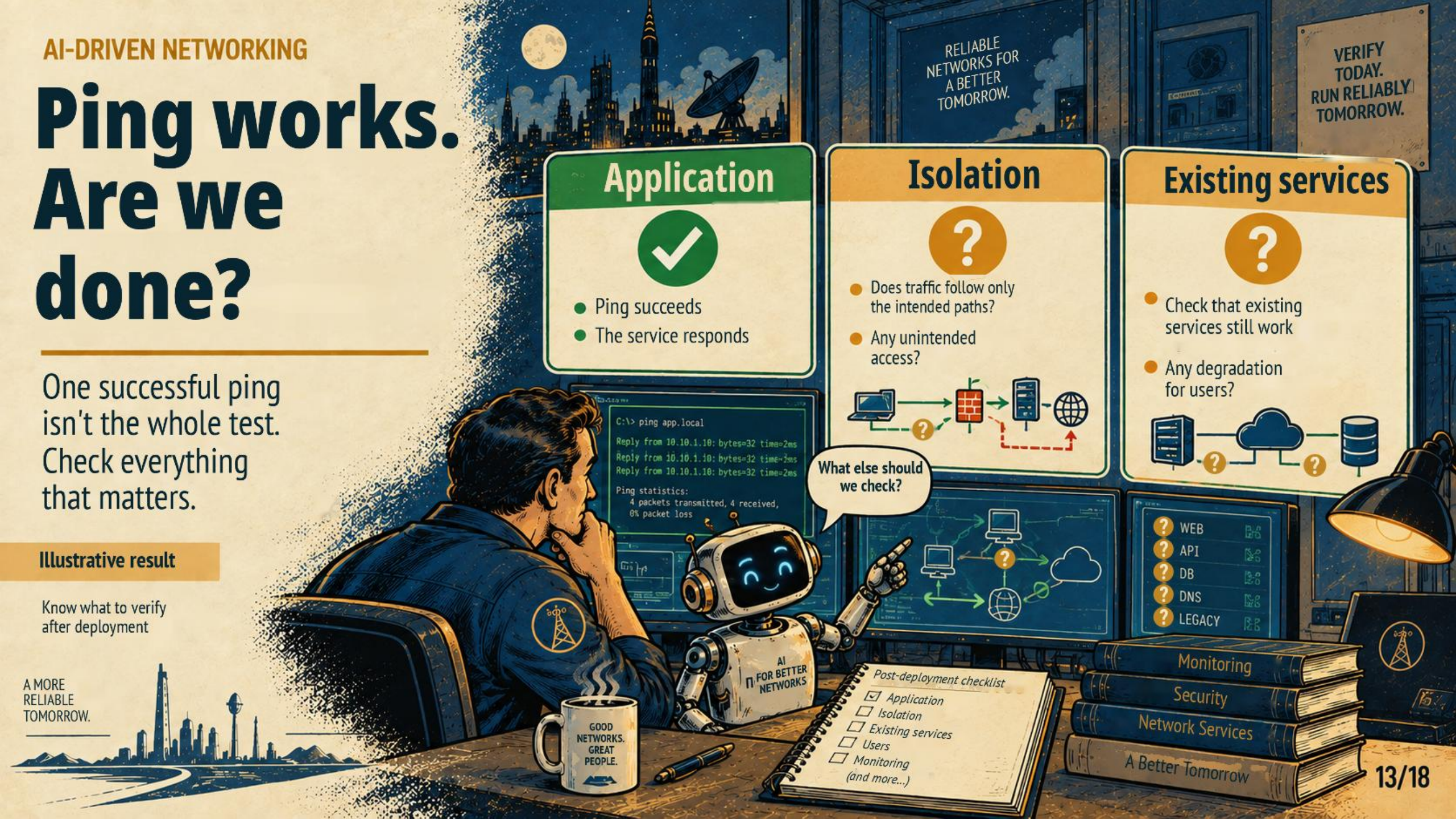
AI-DRIVEN NETWORKING

Ping works. Are we done?

One successful ping isn't the whole test. Check everything that matters.

Illustrative result

Know what to verify after deployment



AI-DRIVEN NETWORKING

From commands to how we work

Two complementary disciplines.
One reliable outcome.



DEPLOYMENT

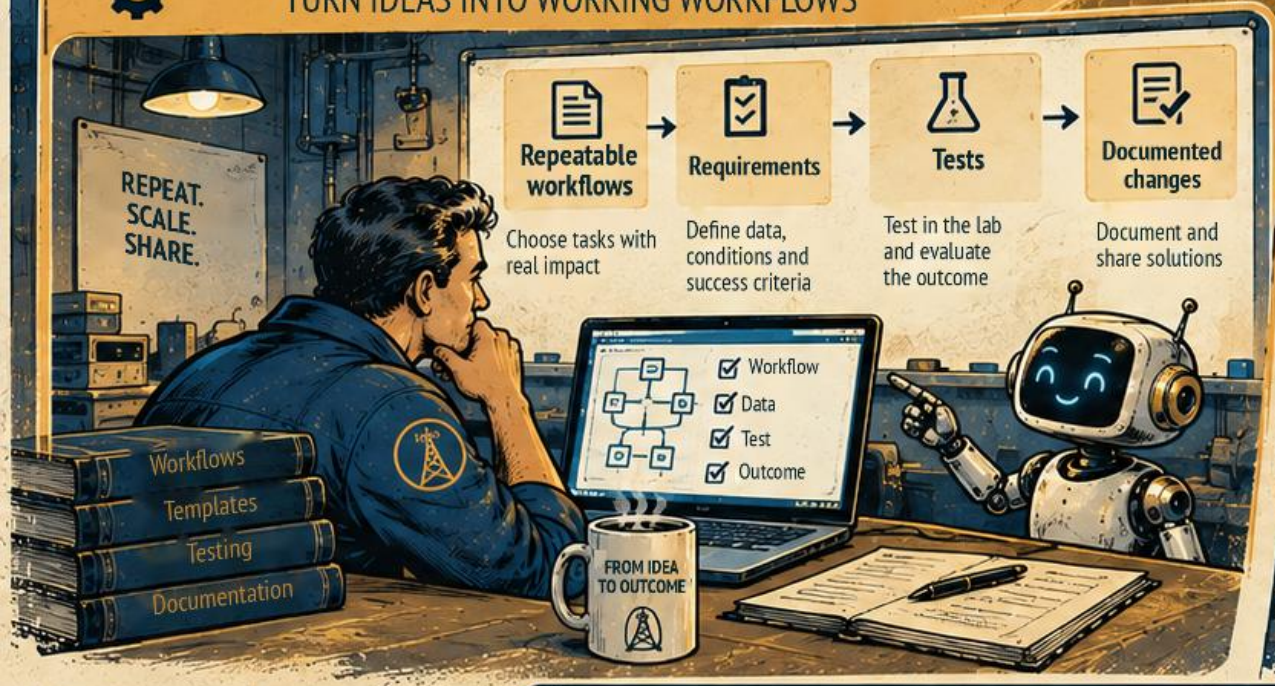
TURN IDEAS INTO WORKING WORKFLOWS

Repeatable workflows
Choose tasks with real impact

Requirements
Define data, conditions and success criteria

Tests
Test in the lab and evaluate the outcome

Documented changes
Document and share solutions



OPERATIONS

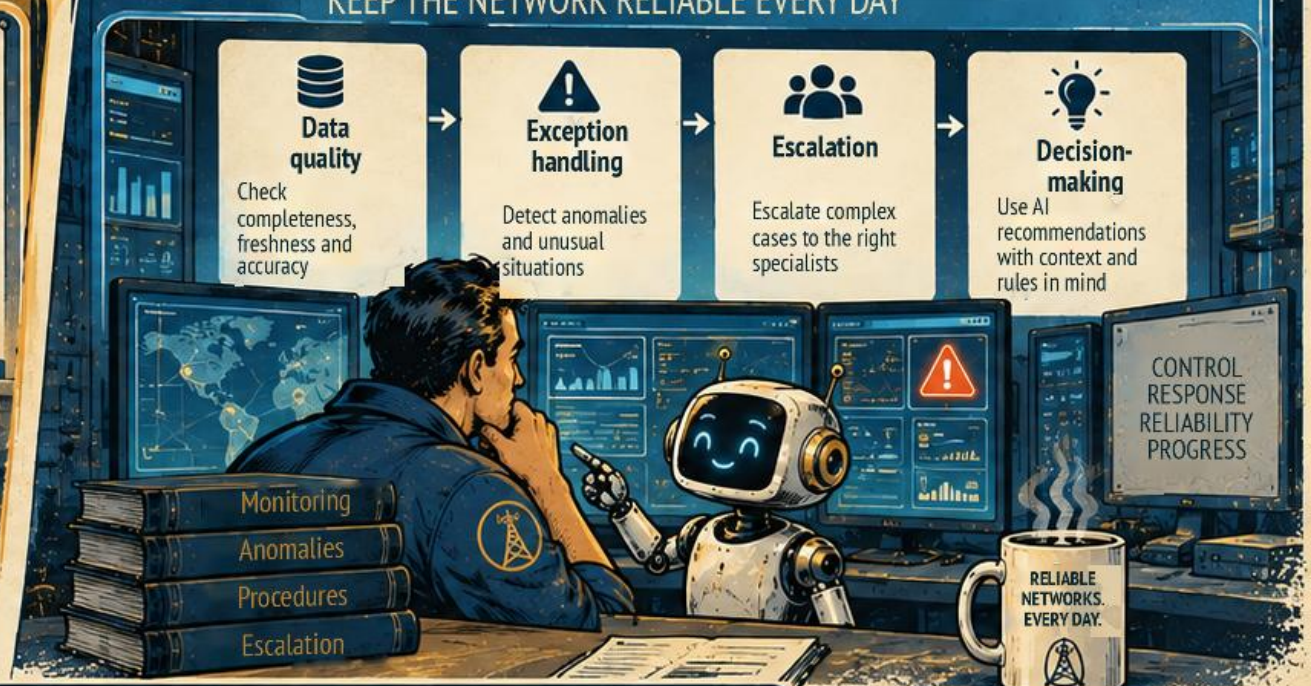
KEEP THE NETWORK RELIABLE EVERY DAY

Data quality
Check completeness, freshness and accuracy

Exception handling
Detect anomalies and unusual situations

Escalation
Escalate complex cases to the right specialists

Decision-making
Use AI recommendations with context and rules in mind



A MORE RELIABLE TOMORROW.

Not just new tools. A new way of working.

AI-DRIVEN NETWORKING

Deployment: define it, then verify it

PLAN
DEFINE
VERIFY
DEPLOY

From idea to a reliable outcome.

Requirement

Define what is needed—and why

Parameters

Set parameters and constraints

Candidate change

Prepare the configuration and review the diff

Test

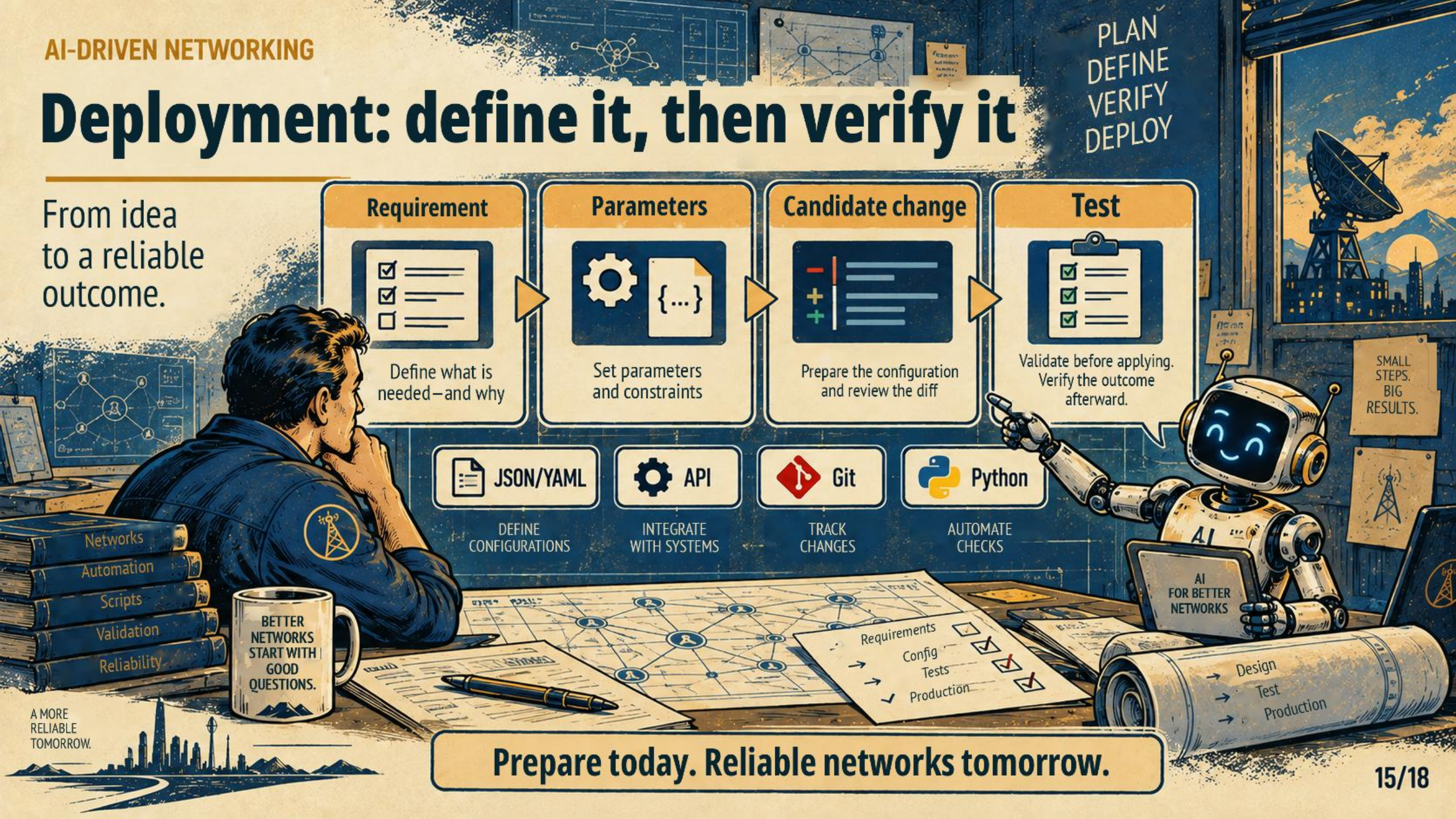
Validate before applying. Verify the outcome afterward.

JSON/YAML — DEFINE CONFIGURATIONS

API — INTEGRATE WITH SYSTEMS

Git — TRACK CHANGES

Python — AUTOMATE CHECKS



Prepare today. Reliable networks tomorrow.

AI-DRIVEN NETWORKING

Operations: verify conclusions, limit actions

From experiments to safe operation on a live network



Data freshness

Is the data current? If not, refresh and recheck.

Updated 2 minutes ago

CURRENT

Hypothesis ≠ fact

Hypothesis: "Link congestion is the cause."

Check: metrics, logs, alternatives

Is the conclusion supported? Verify first, then act.

Tools

- Read (view and collect data)
- Analyze (diagnose and find causes)
- Recommend (propose actions)
- Change (authorized actions only)

Logs and events

Time	Level	Event
02:55	INFO	Link up
02:56	WARN	High utilization
02:57	INFO	Hypothesis check
02:58	INFO	Data refreshed
03:00	INFO	Recommendation ready

Metrics

Link utilization

100%
50%
0
02:00
02:30
03:00

Latency (ms)

200
0
02:00
02:30

Action boundaries

Illustrative policy example

Allowed by policy

- Adjust QoS
- Switch to another link
- Restart a service

Not authorized for the agent. Escalate.

- Architecture changes
- Data deletion
- Out-of-domain actions

Security

- Audit every action
- Ticket and log data are not commands.
- Tool permissions are set outside the model.

RELIABLE NETWORKS FOR THE REAL WORLD.

AI FOR BETTER NETWORKS

VERIFY. THINK. DECIDE TOGETHER.

Verify the conclusion
Assess risks
Set boundaries
Approve

MONITORING
ACCESS POLICIES
ACTION AUDITING
SAFE AUTOMATION

Operations depend on verified conclusions and clear action boundaries.

AI-DRIVEN NETWORKING

Start with one task. Read-only.

Start with a small, safe pilot—not a full deployment.

PILOT ZONE (SANDBOX)

Bounded context • Read-only • One task

ONE TASK

Example: investigate high latency in one segment

READ-ONLY

- Data and log access only
- No configuration changes
- No commands that change state
- Clear access boundaries



VALUE CRITERIA

- A clear cause is identified
- Findings match expert analysis
- Engineer time is saved
- Results are repeatable

STOP CONDITIONS

- No useful results
- Too many false conclusions
- Access boundaries exceeded
- Security risk
- Answers cannot be trusted

PRODUCTION (OUTSIDE PILOT SCOPE)

THE AGENT DOES NOT OPERATE HERE

- Configuration changes
- Command execution
- Creating / deleting objects
- Changing policies and rules

RELIABLE NETWORKS. RESPONSIBLE DECISIONS.

OUTSIDE PILOT SCOPE

HIGH-RISK ACTIONS HERE

Read-only reduces risk. It doesn't eliminate it.

A MORE RELIABLE TOMORROW.

AI-DRIVEN NETWORKING

A MORE RELIABLE TOMORROW.

3 a.m. Who gets the network back online?

RELIABLE NETWORKS. A BRIGHTER TOMORROW.

Two scenarios. One goal—a reliable network.

AUTHORIZED WORKFLOW

A familiar situation. A known solution.

1 INVESTIGATE

Analyze the data and the cause

- Log analysis
- Event correlation
- Cause identification

2 BOUNDED AUTOMATION

Perform an authorized action within defined limits

- Restart a service
- Apply a configuration
- Activate the backup

AUTHORIZED ACTIONS ONLY

3 OUTCOME VERIFICATION

Verify that everything is working normally

NETWORK HEALTHY

- Services available
- Metrics within range
- Users online

AI FOR BETTER NETWORKS

AUTONOMOUS. SAFE. VERIFIED.

The system handles routine tasks within defined limits.

UNKNOWN / HIGH RISK

An unusual situation. Human judgment required.

1 DETECT AND ASSESS

Identify the anomaly and high risk

- Unfamiliar situation
- High risk
- No known solution
- Outside authorized actions

2 ESCALATE TO THE ENGINEER

Escalate with context and data

ENGINEER DECISION REQUIRED

- Situation summary
- Collected data
- Analysis and hypotheses
- Risk assessment
- Recommendations

3 COLLABORATIVE RESOLUTION

The engineer decides, applies the change and verifies the outcome.

OPTIONS

- Apply a fix
- Reroute traffic
- Activate the backup
- Other...

YOU MAKE THE CALL.

I provide the data. You decide.

PEOPLE MAKE NETWORKS STRONGER.

Experience

Context

Accountability

STOP. HAND OVER TO A HUMAN.

The system identifies risks and escalates unusual situations.

The system helps. We set the boundaries.

TECHNOLOGY
PEOPLE
RELIABLE CONNECTIONS
A BETTER TOMORROW

SAME PEOPLE. GREATER POSSIBILITIES.

Thank you


TECHNOLOGY CONNECTS PEOPLE.
TODAY. TOMORROW. ALWAYS.
AI Networking
AI FOR BETTER NETWORKS
Networks
Automation
A Better Tomorrow