Splunk + GE Digital PREDIX: Industrial IoT

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GE Digital PREDIX

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Meaningful Telemetry Is Hard

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Tool Sprawl vs Effective Operations

Logs + Metrics + Events + App Trace + Synthetics + Alerts + Reports + ...

- Logs, Metrics, Events
  - Sensor all the things
  - Measure all the things

All the things need to be actionable

- App Trace, Synthetics
  - Actual application health
  - App instance interaction

Synthetic testing is a key data set

- ITOM
  - Taking action against KPIs needs to be operationalized
  - Needs to feed into the rest of the business operations

Having a valid, up to date source of truth can be an actual thing

The GE You Don't Know

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GE Power

Big rotating things

GE Power

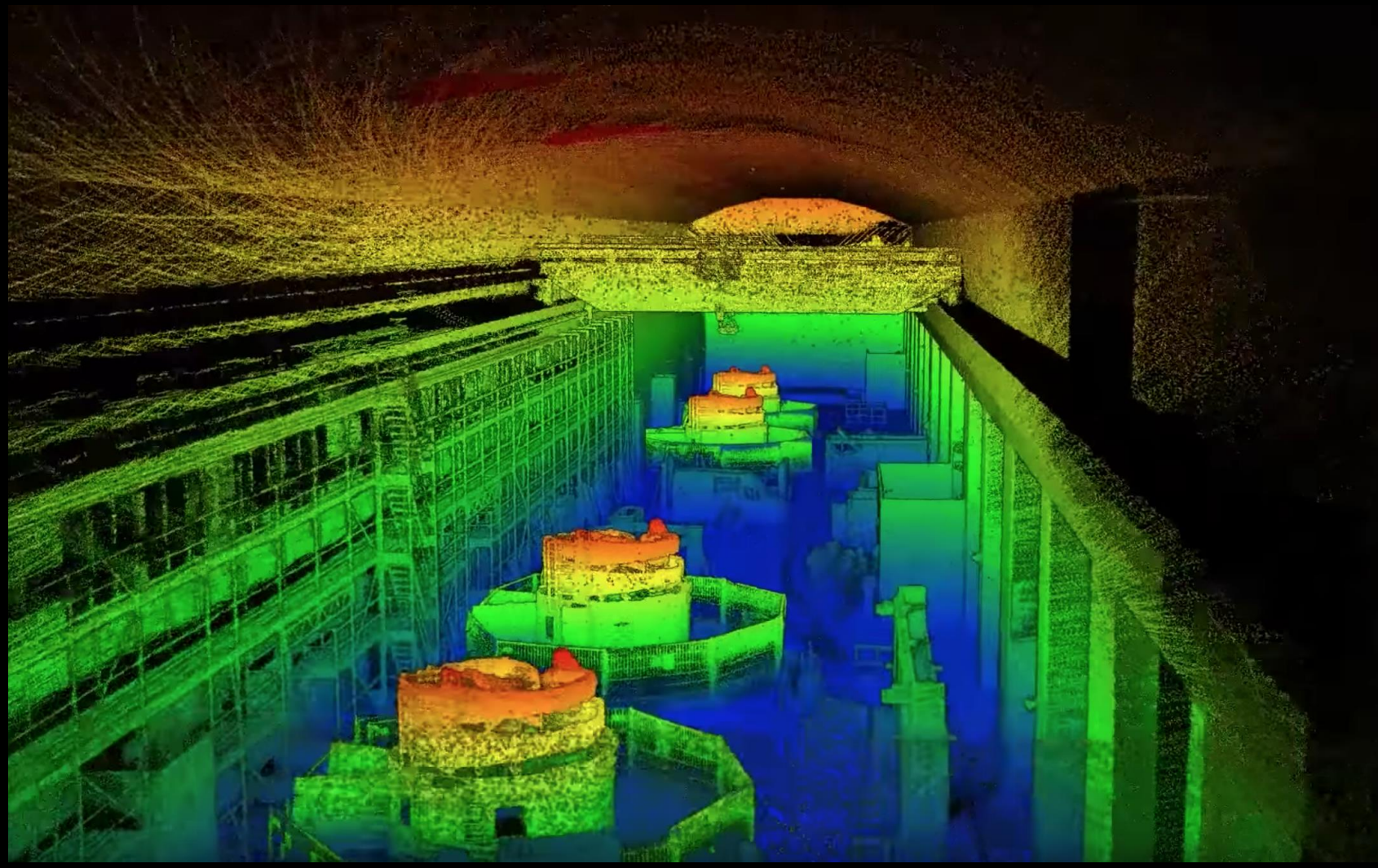
Atlanta Power Monitoring and Diagnostics

GE Renewables

Largest and most powerful offshore wind turbine

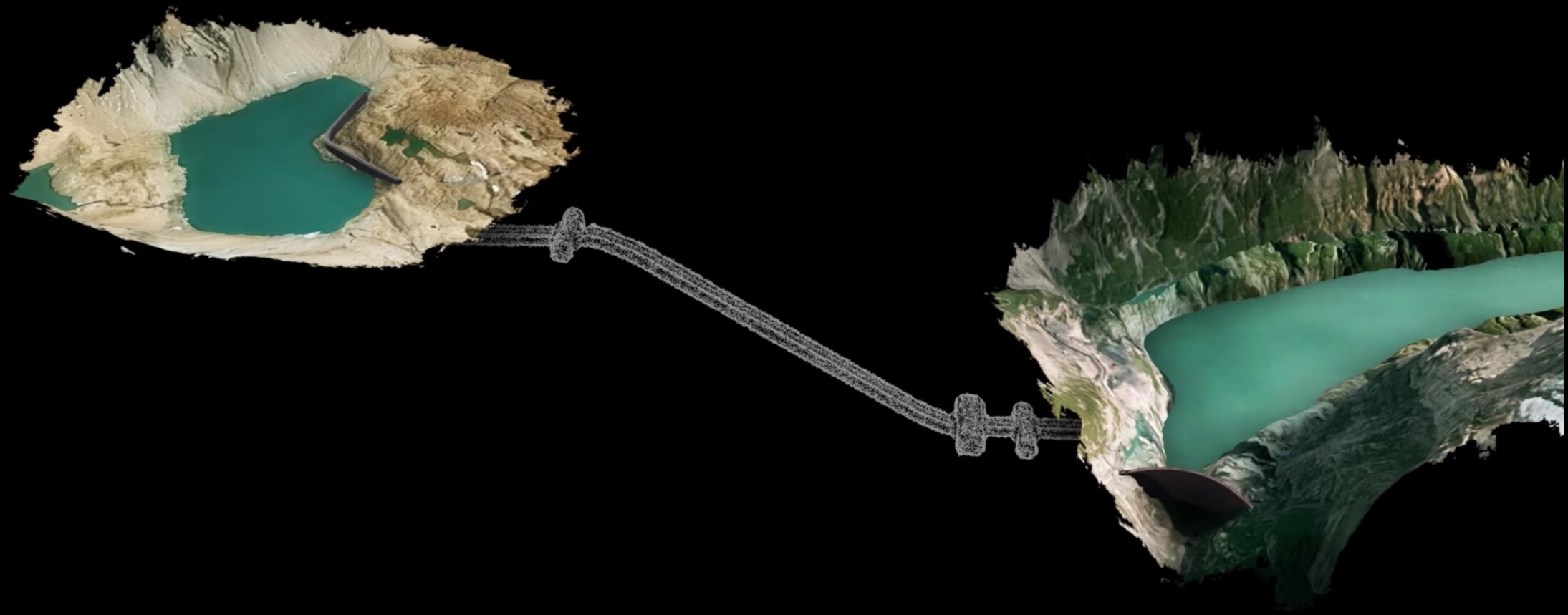
GE Renewables

Better models to avoid unplanned downtime



GE Renewables

Alpine Battery

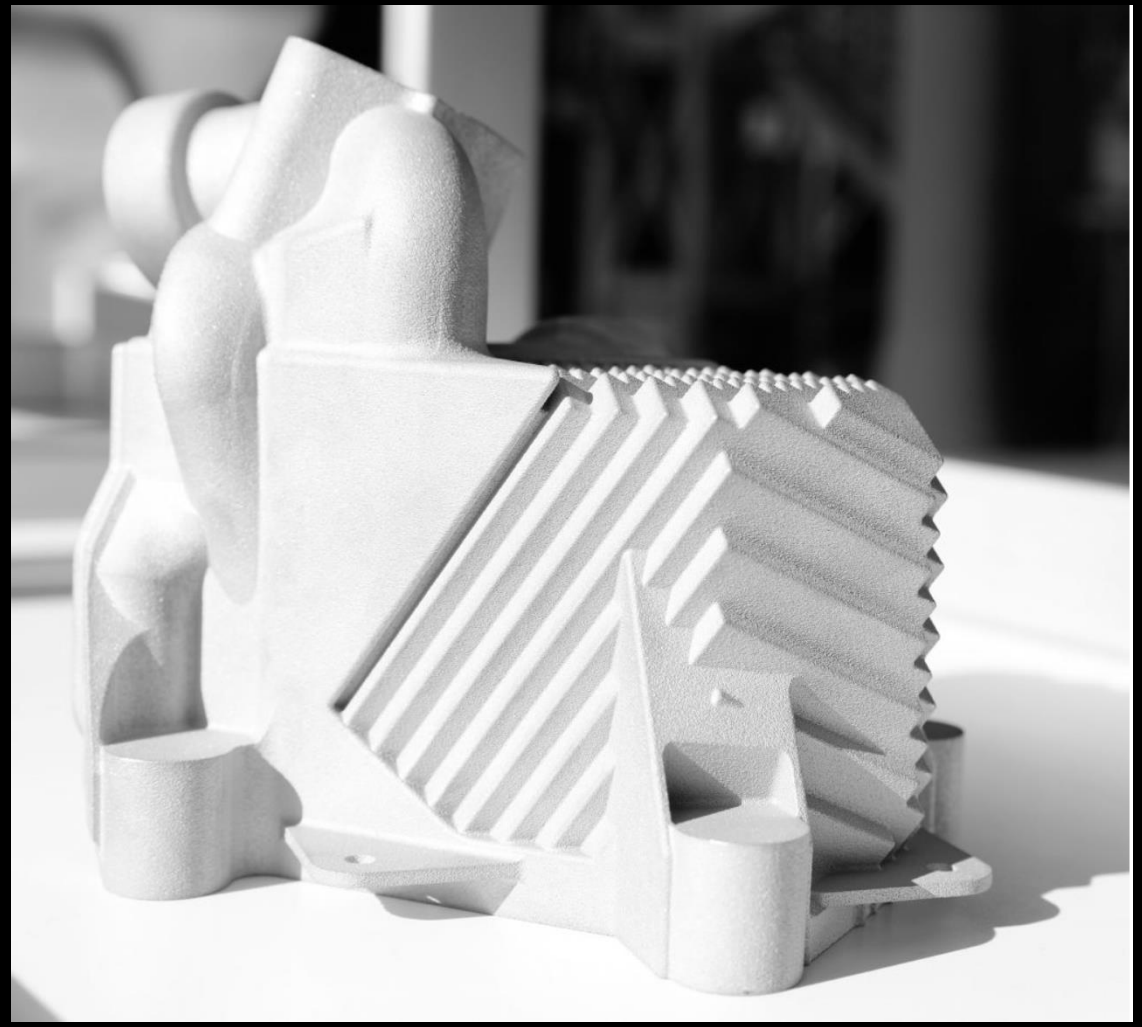


GE Aviation

Every 2 seconds a GE powered aircraft takes off

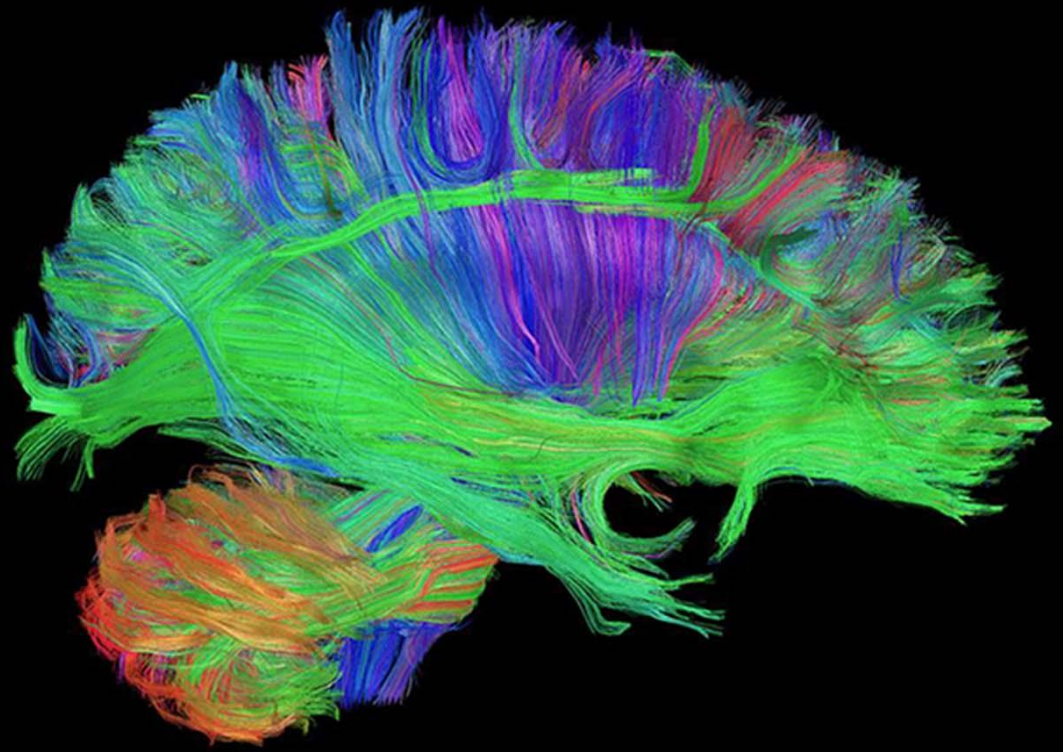
GE Aviation

Creating impossibly complex parts



GE Healthcare

Medical Imaging and Cancer Moonshot



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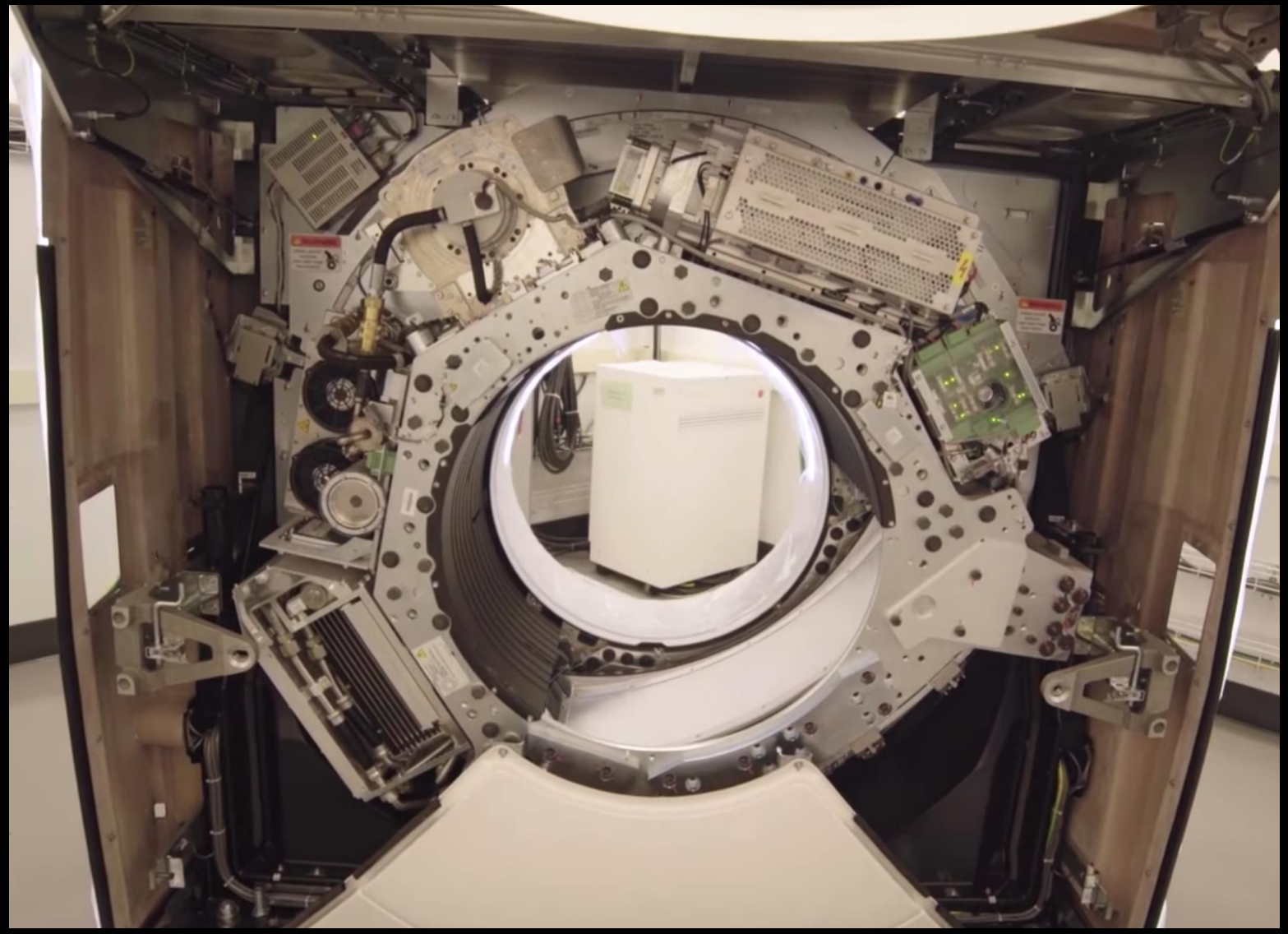
GE Healthcare

Medical Imaging



Industrial IoT at GE

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GE Industrial IoT Platform

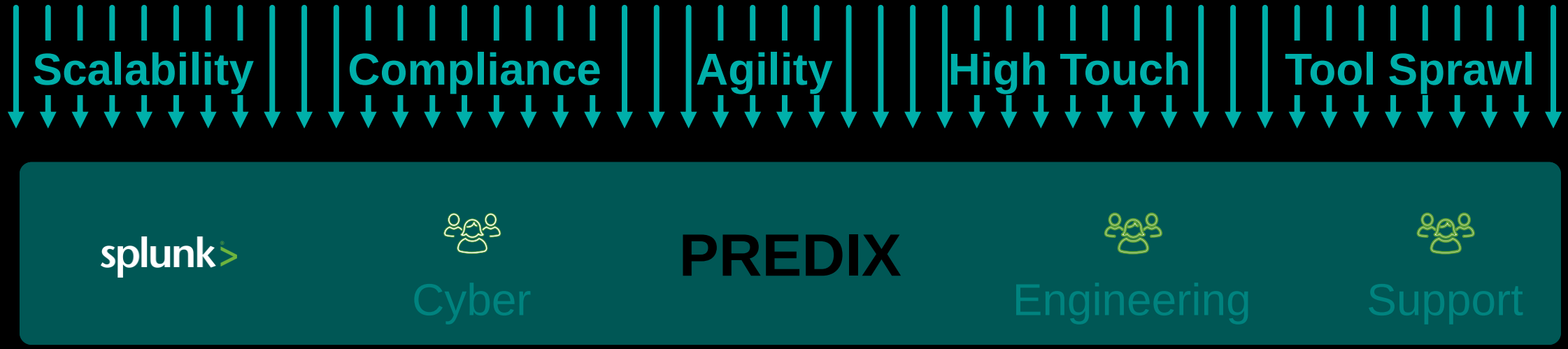
Industrial Applications

PREDIX

Industrial Assets

Implementation Landscape

Exciting Challenges!



Predix Journey with Splunk

Predix Platform service owners adoption of Splunk

TB/day ingestion

Indexers, 1PB storage

Active users

Agents

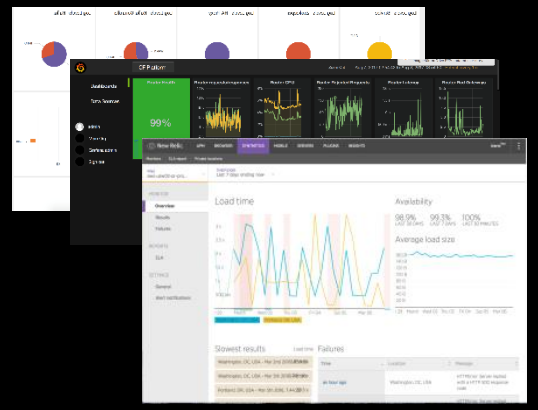
Events per day

Strategies

Telemetry is good

Tool sprawl is not so good

- Logs, Metrics, App Trace, Synthetics



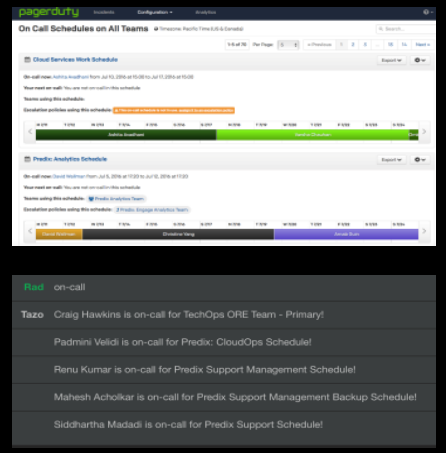
ELK

InfluxDB

Grafana

AppDynamics

- Notifications, Alarms



flowdock

pagerduty

AppDynamics

- Ticketing, Incident management

servicenow

AppDynamics

Meaningful telemetry is better

What problem are you trying to solve?

One source of truth to get to all of the data

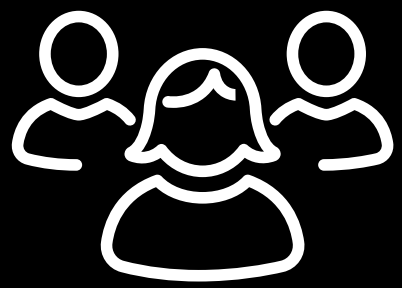
- Events
- Metrics
- Alerts
- Dashboards
- Enable SEIM
- 3rd party integrations

Execute with the smallest team possible

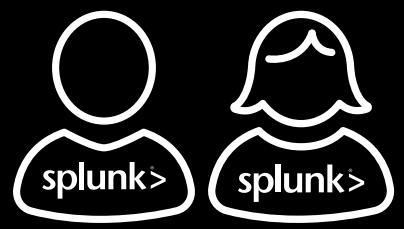
- Fewest tools to enable most teams
- Buy versus build
- On-prem versus SaaS
- Multi-cloud considerations

Service Ownership Framework

Accountability and Collaboration



SPLUNK Users



SPLUNK Admins

Shared Responsibility

Versatile Onboarding Approach

Key to Successful Self-Service

Wiki/Repo

Brown Bags

Help Desk

White Glove

Do it or …

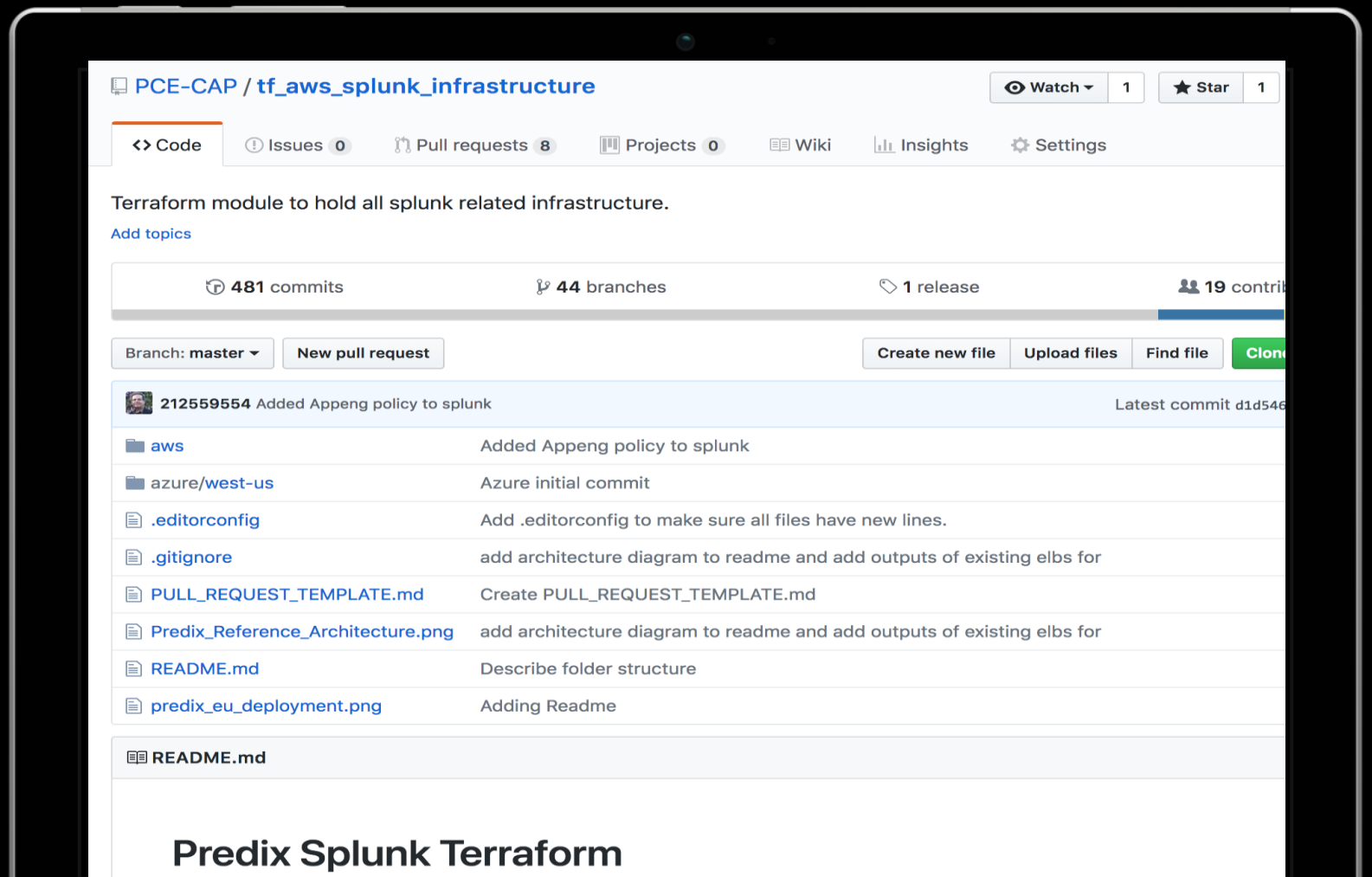
Low Barrier to Entry

- Support a finite set of transport methods
- Iterate onboarding
- Start from pain points, not tools
- Empower content creation
- Celebrate small wins

“Perfection is the enemy of Good.”

Be DevSecOps Practitioners

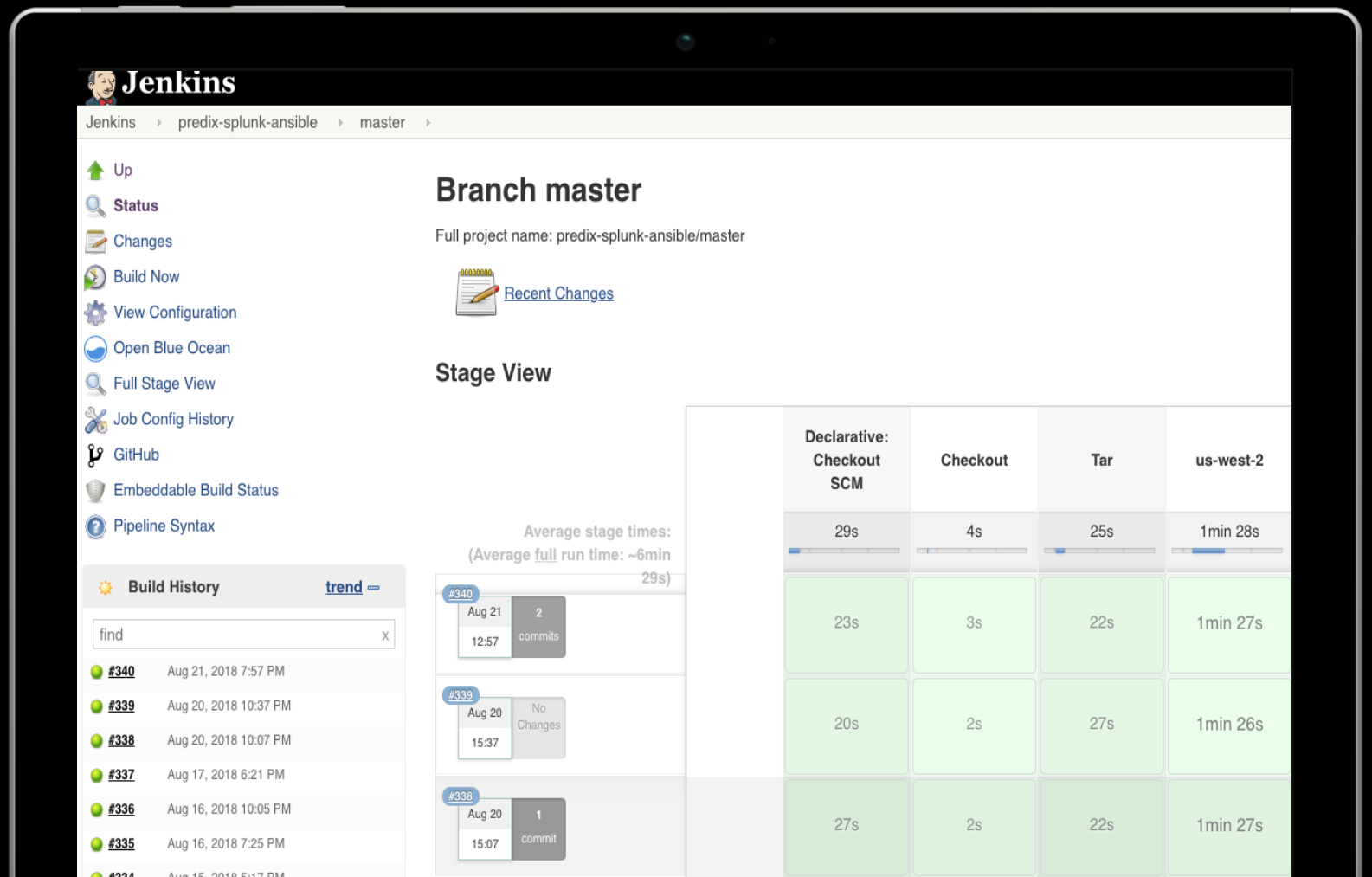
Unless it looks and feels familiar, it's scary



- Treat everything as code: infra, app config, app deploy, automation, content
- Build highly reusable code: no snowflakes
- Open access to github and wiki

Foster DevSecOps Culture

Unless it looks and feels familiar, it's scary



- Use the same CI/CD pipeline
- Leverage as many common services as possible
- Achieved 30 minute full prod deploy

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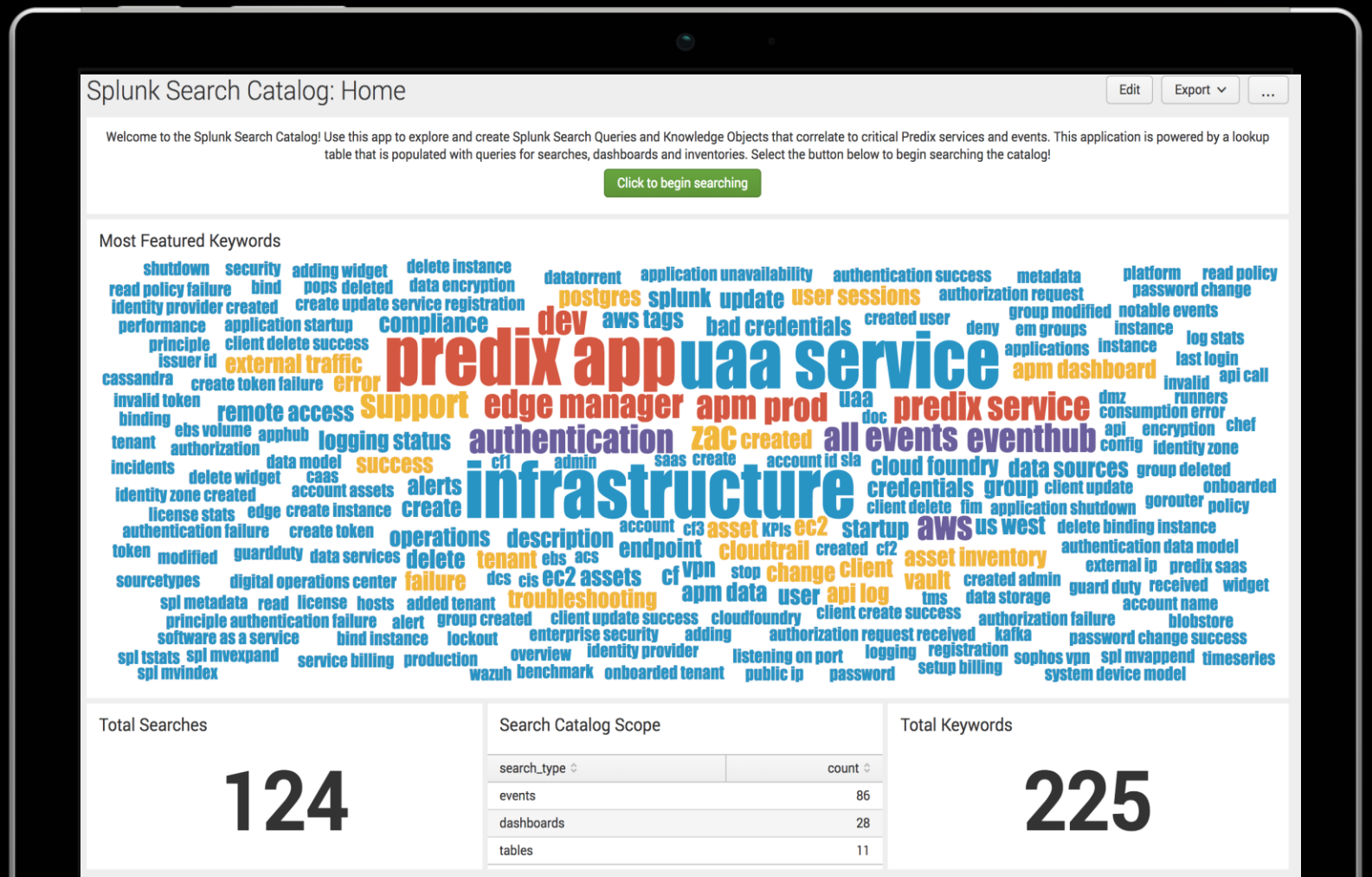
Agility by default

You're one PR away



- Internal community contributions welcome
- Teams can create their own apps
- Or contribute to a platform app we built
- Anyone can make a pull request

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Tomorrow

What's Next?

When we have table stakes covered

All the data in one place

Cyber

SIEM integration

Endpoint protection

DevOps + Support

Platform and Service Monitoring

Troubleshooting

Problem Discovery

IT Operations

Rapidly resolve RCAs

Safe ad-hoc searches

Beyond Preventative

True business insights

Drive Operational Excellence

Predictive Analysis

Proactive Operations

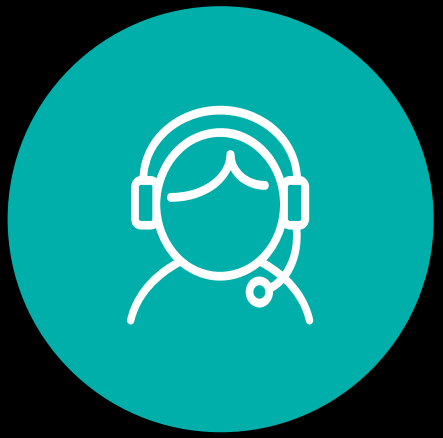
Runbook automation

Broad Correlation

Continuous Performance Testing

Transaction Tracing

Cost to Serve



Predix Customer Sat

Deep Business Insights

Tie Business Catalog to Operations

System of Record

Key Takeaways

You already know how

1. Automate
2. Cultivate Culture
3. Evangelize