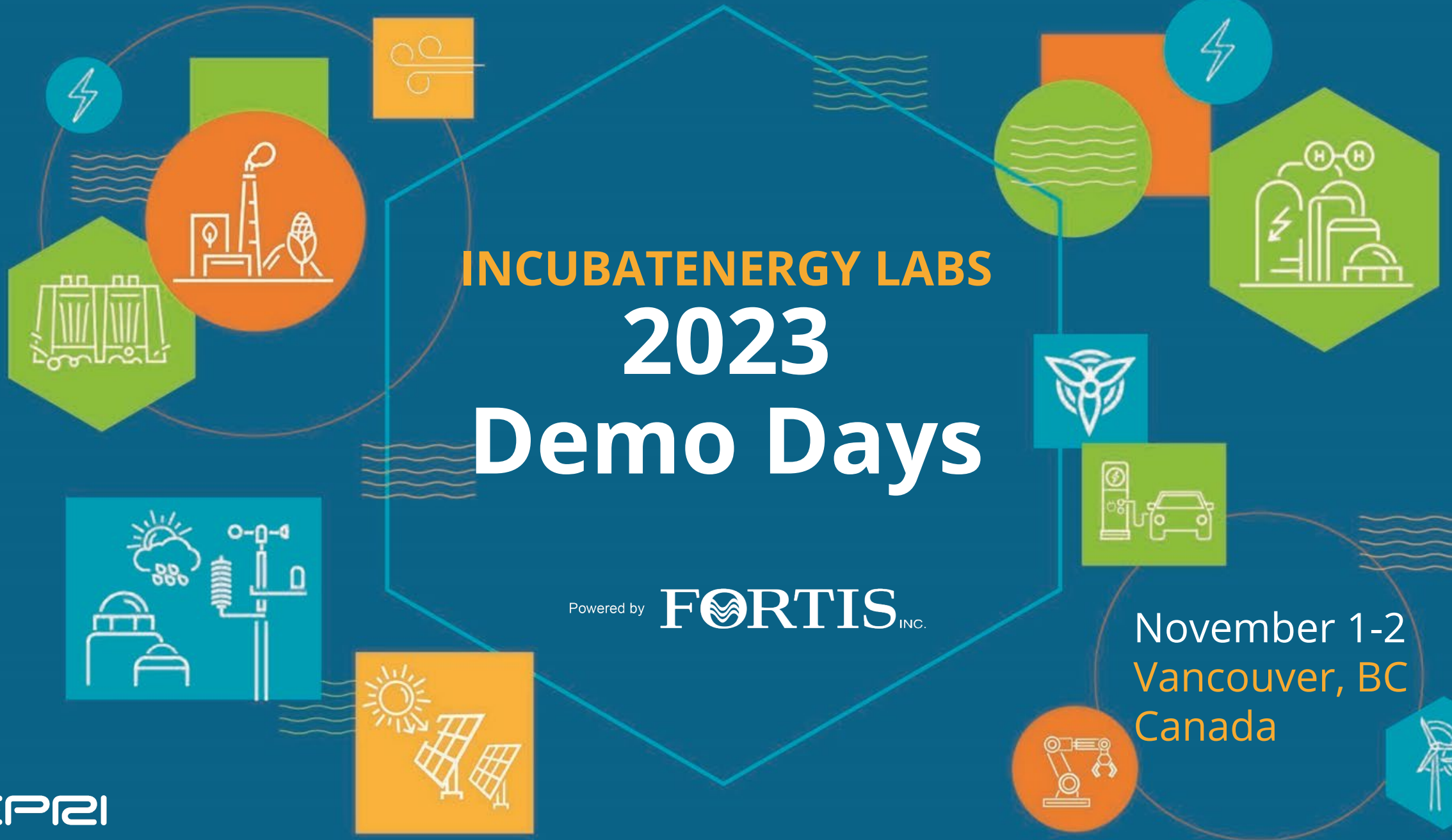
INCUBATENERGY LABS
2023
Demo Days
Powered by FORTIS INC.
November 1-2
Vancouver, BC
Canada
EPRI

The Problem

Downtime, failures and wildfires cost utilities a lot money. And utilities can't predict what and when equipment will fail.

High Cost

Time consuming

Lack of Data

CRWN

Using sound t**predict**
failures on the **most remote**
lines **before** they happen.

ENERGY PROVIDERS

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The Pilot

Can electrical discharge give insights into **predicting failures** and **prioritizing maintenance**?

Pilot Overview

To show that CRWN can detect, categorize and localize different types of electrical discharge (outside of just corona), in real time without an operator.

1 Month Deployment (&still collecting!) in 4 different sites

5 Categories- No Activity, Low Corona, Medium Corona, **Tracking**&**Arcing**

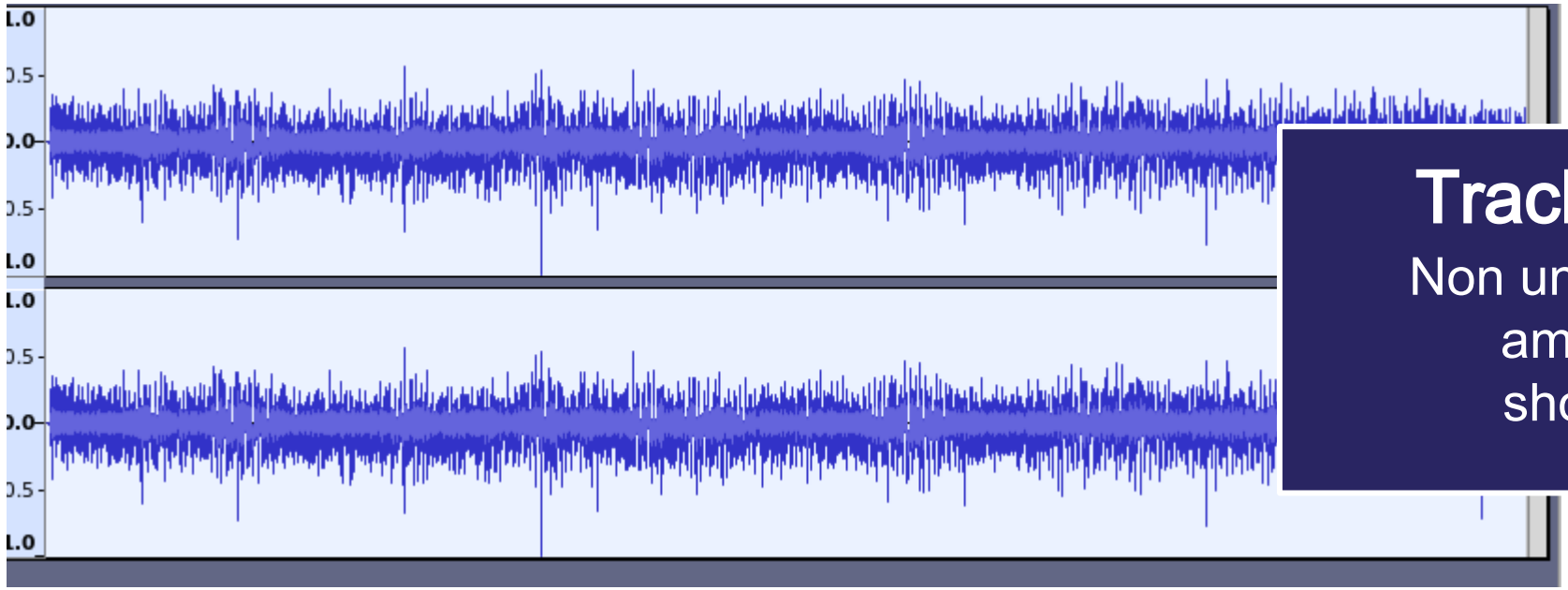
10 devices, 63kV, 138kV, 230 kV Tx lines

Ultrasound data and AI/ML, **real time detection**

Key Findings - Issue identification

We can detect:

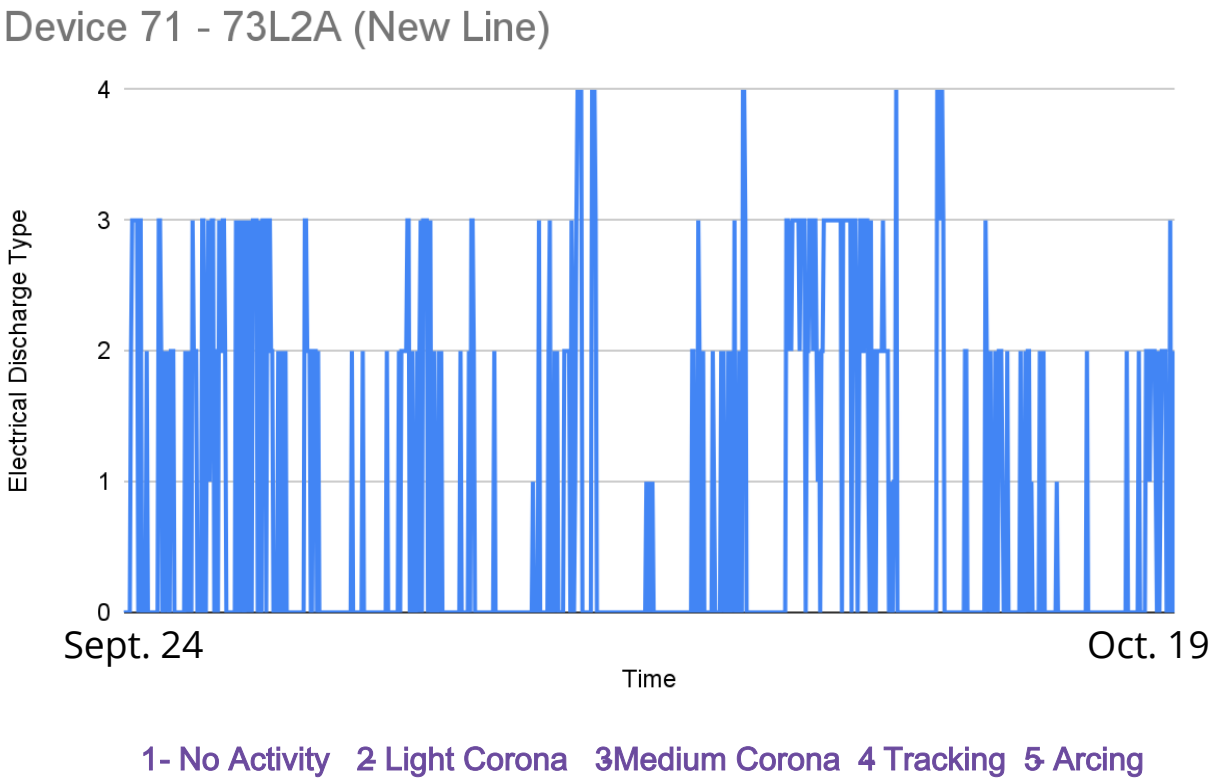
- **Arcing** with Ultrasound
- **Tracking** in the field with Ultrasound
- Distribution of Partial Discharge Type **different** from **one location to the next.**



Tracking in Field

Non uniform, varying in amplitude and short duration

Key Findings - Data Over Time



Over a one month period with 10 devices feeding live:

- Electrical Discharge **changes** throughout the day, as expected
- Tracking **does not exist** without characteristic Corona Activity
- Tracking and Arcing events happen **much less often** than Corona activity, a expected

CRWN.ai
Tells you what's
happening on the line,
you don't have to guess.

Expected vs Reality

73L2A

Brand New Line

230kV

Expectation

Low Activity

Reality

~30% of time Medium-High Activity

Expected vs Data Reality

72L183
Corroded Insulator
230 kV

Expectation
High Activity

Reality

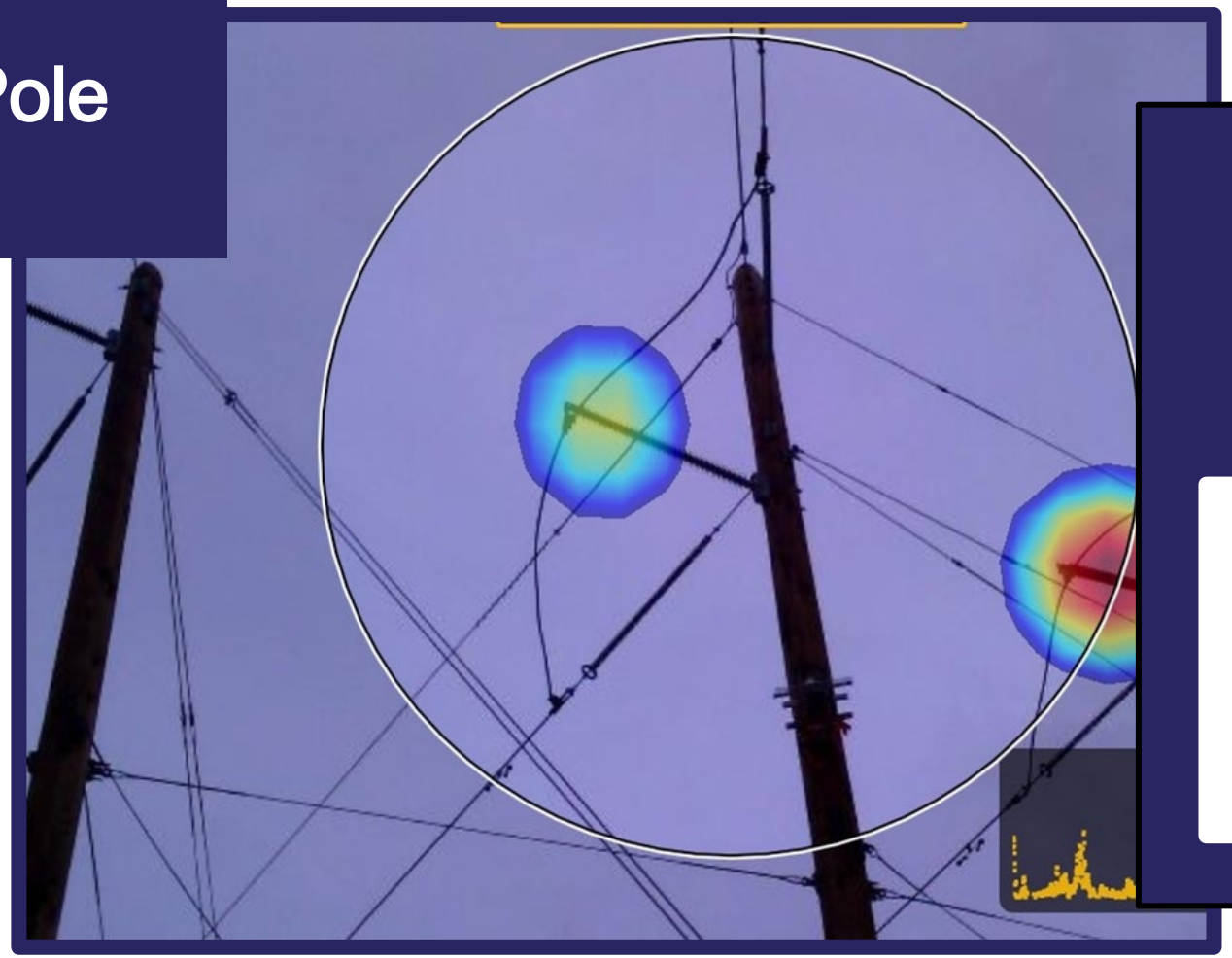
95% of time
No-Low Activity

Expected vs Data Reality

73L22

Control Pole

138 kV



Expectation

Unknown

Reality

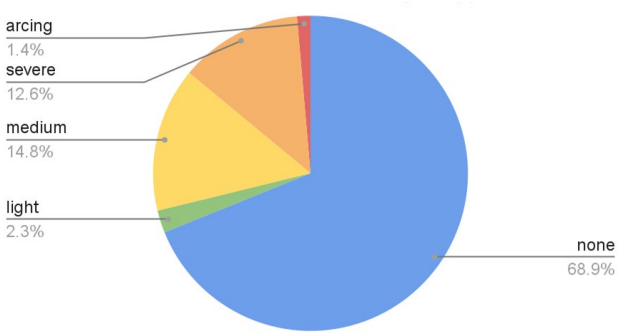
~70% of time Medium to High Activity

Key Questions

72L2A
Brand New Line

Some severe activity

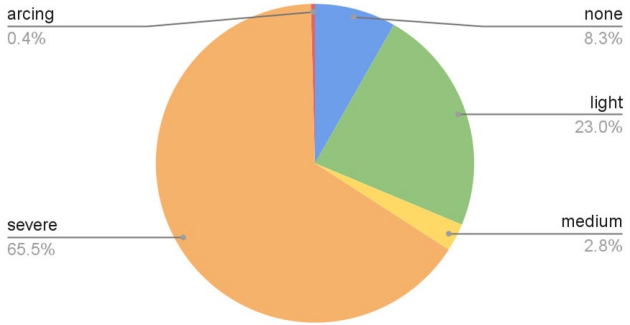
Expected: Low Activity
Reality: 28.8% Medium-High Activity



73L22
Control Pole

A lot of Activity

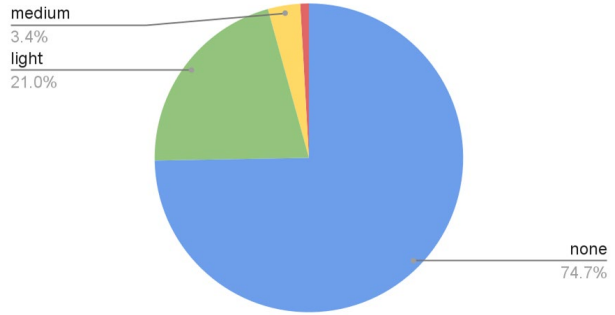
Expected: Unknown
Reality: 68.7% Medium-High Activity



72L183
Corroded Insulator

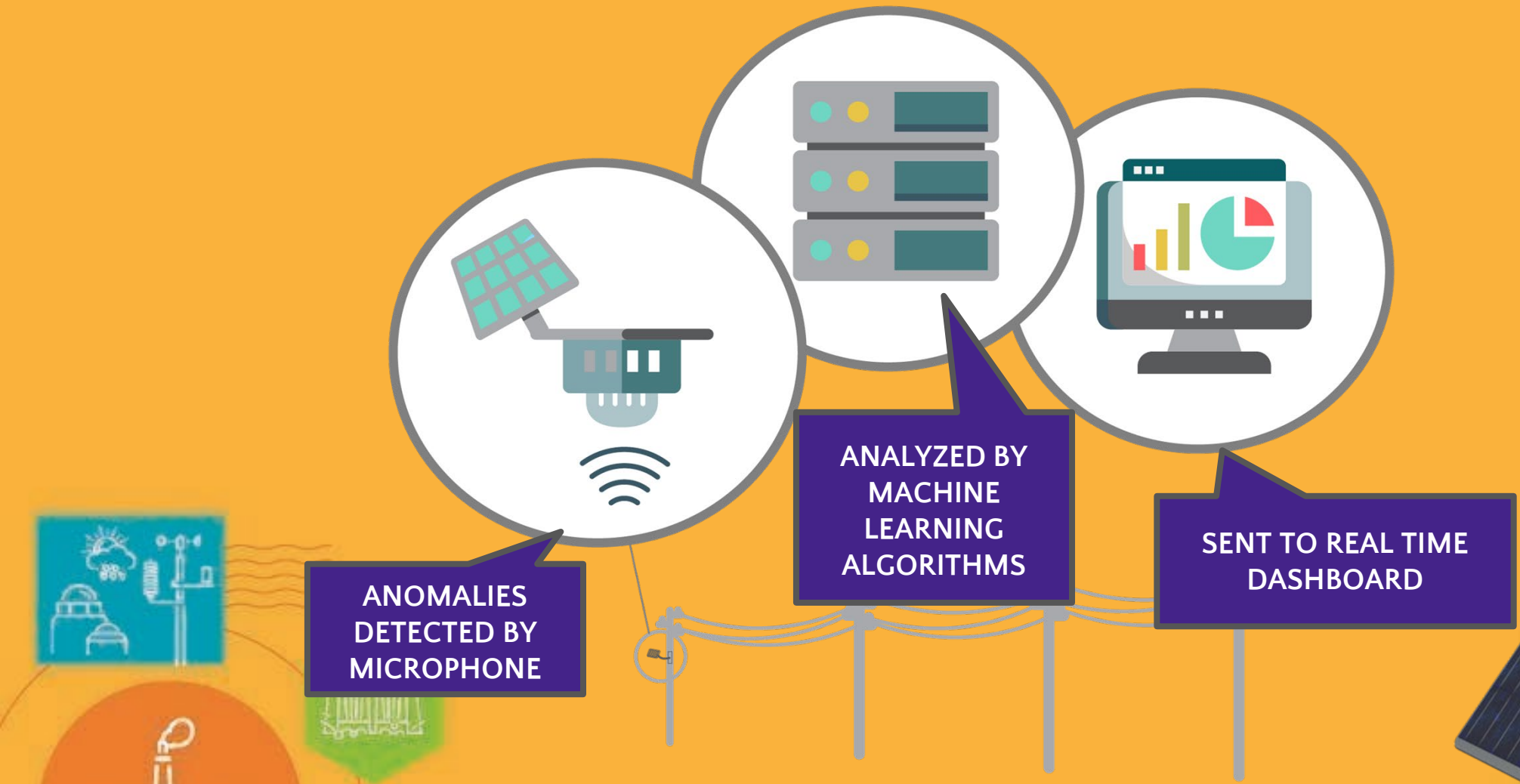
Limited Activity

Expected: High Activity
Reality: 4.3% Medium - High Activity



CRWN can automatically detect, categorize and lo**Corona**,
Arcing & **Tracking** in real time.

CRWN Technology



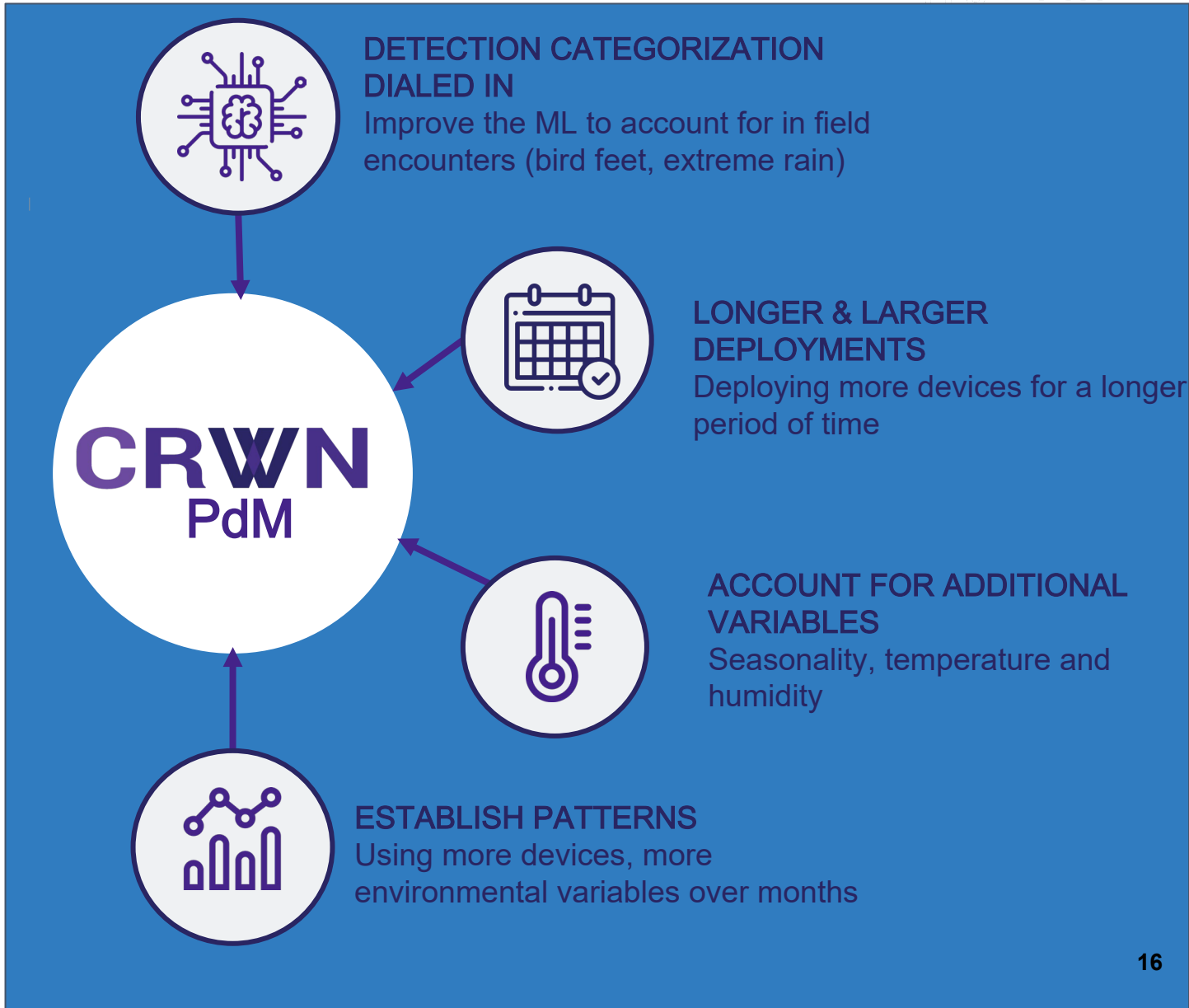
What's Next

We know CRWN can tell you **what** is happening on your lines.

Next we want to help Utilities understand **why** they are happening.

What's Next- Helping Utilities Understand Why.

Using CRWN's **defect categorization** and **Predictive Maintenance (PdM) algorithms** deployed across critical Transmission lines will allow Utilities to **increase efficiency, better mitigate risks** and **increase uptime** for the end customer.



Our Team

Come see us at our table!
We’re looking for early adopters.

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brittany.nicol@crwn.ai