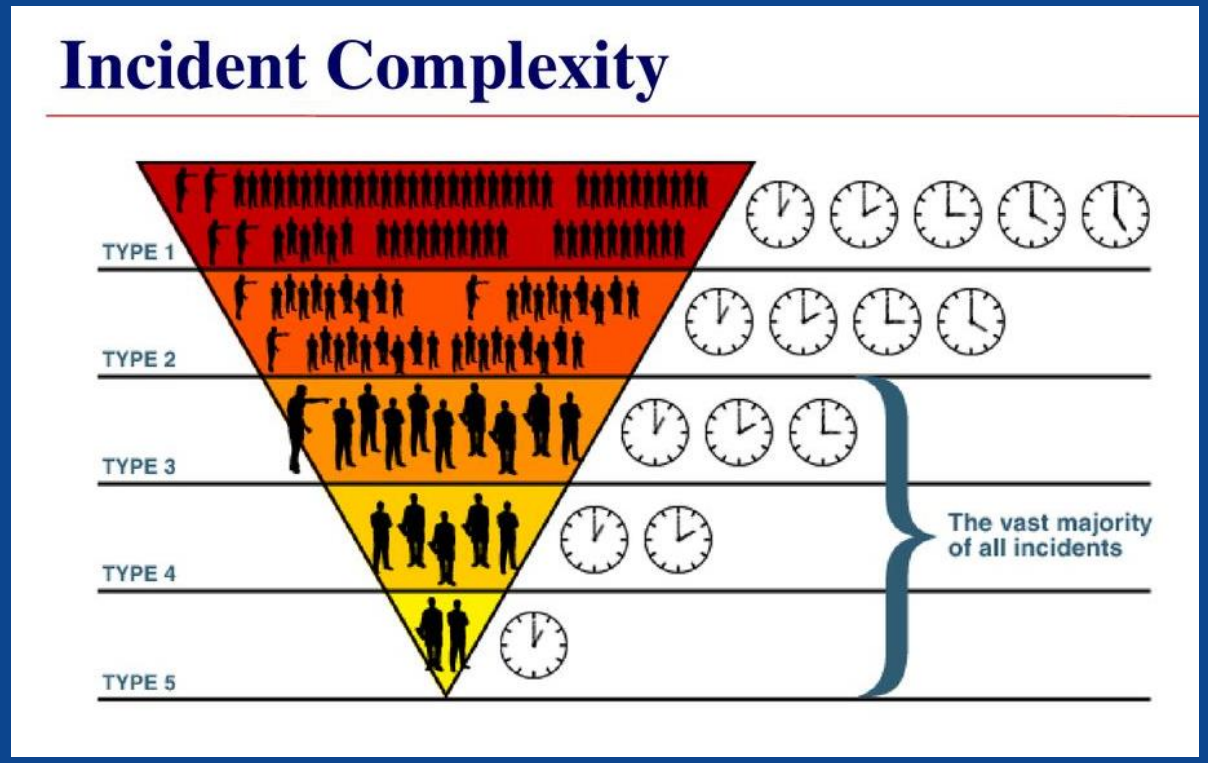
WUI Fires in Oregon

Complexity & Response



Changing the Way You See the Grid.

Gridware


tZERO
Gridware.


tZERO


tZERO

Conductor Clash

Animal Contact

Vegetation Contact

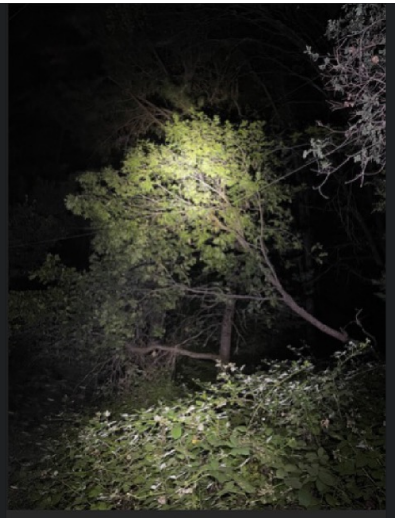
Severe Weather

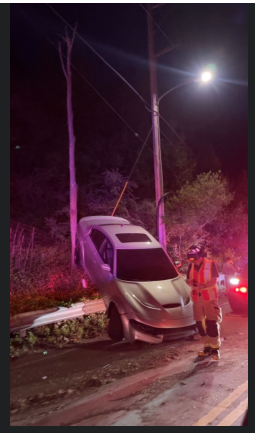
Compromised Pole

Asset Overload

Line Break

Gridware



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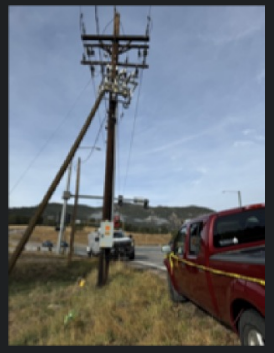

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Hazard Awareness Delay

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Immediate Detection.

Precise Location.

Detailed Identification.

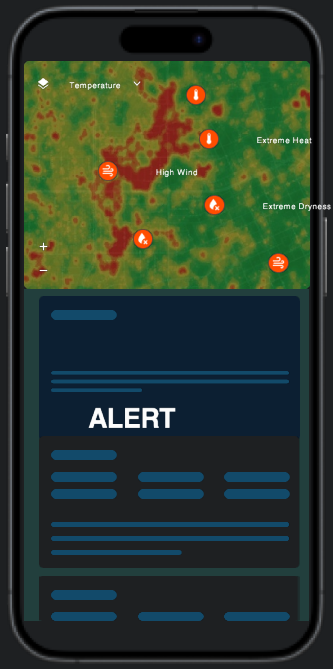
Always Active.

Even During Outages.

Gridware.

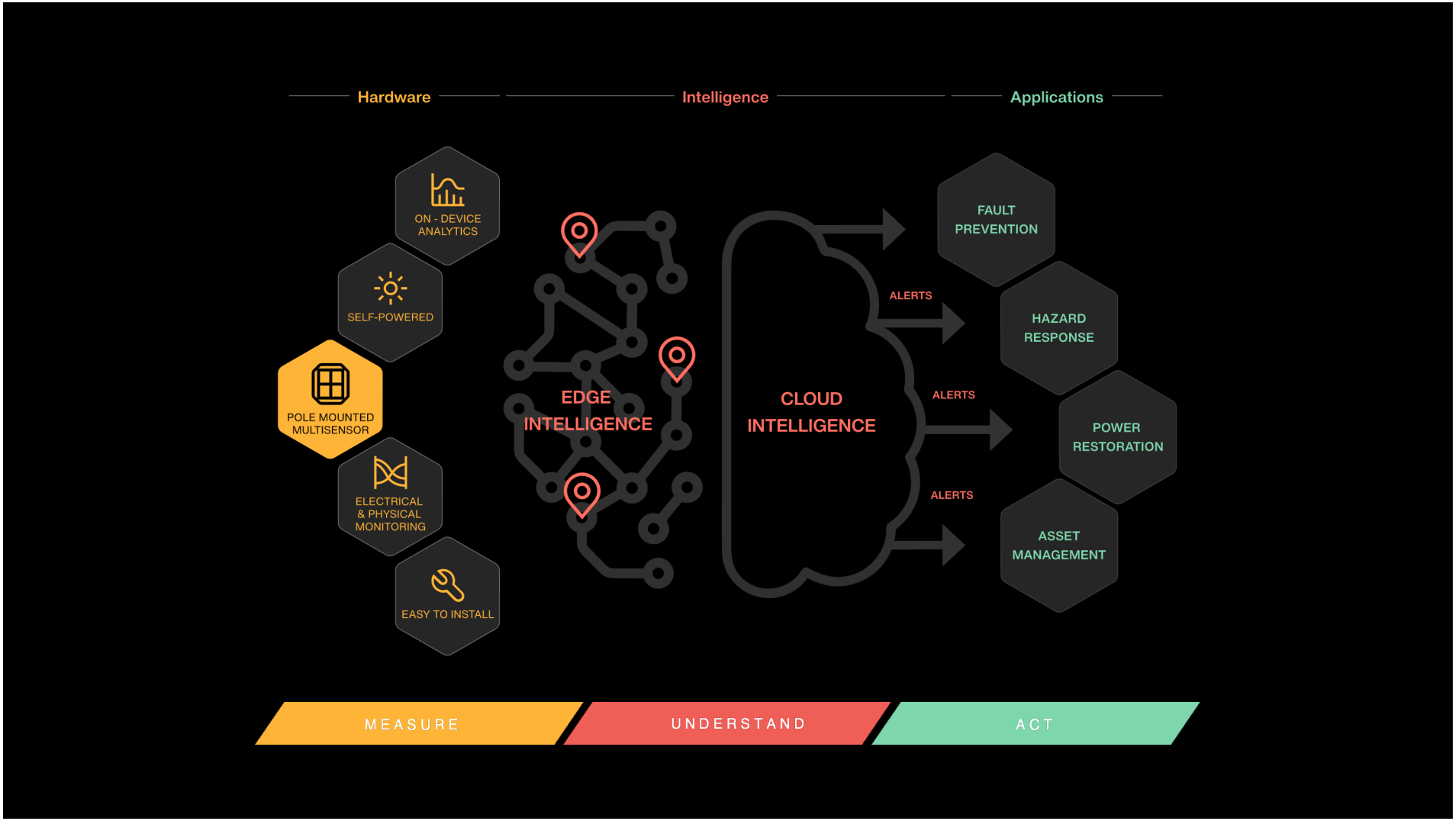

MEASURE
Gridware

UNDERSTAND



Gridware


ACT
Gridware


Hardware
Intelligence
Applications
ON - DEVICE ANALYTICS
SELF-POWERED
POLE MOUNTED MULTISENSOR
ELECTRICAL & PHYSICAL MONITORING
EASY TO INSTALL
EDGE INTELLIGENCE
CLOUD INTELLIGENCE
ALERTS
ALERTS
ALERTS
FAULT PREVENTION
HAZARD RESPONSE
POWER RESTORATION
ASSET MANAGEMENT
MEASURE
UNDERSTAND
ACT

THIS IS

Active Grid Response.

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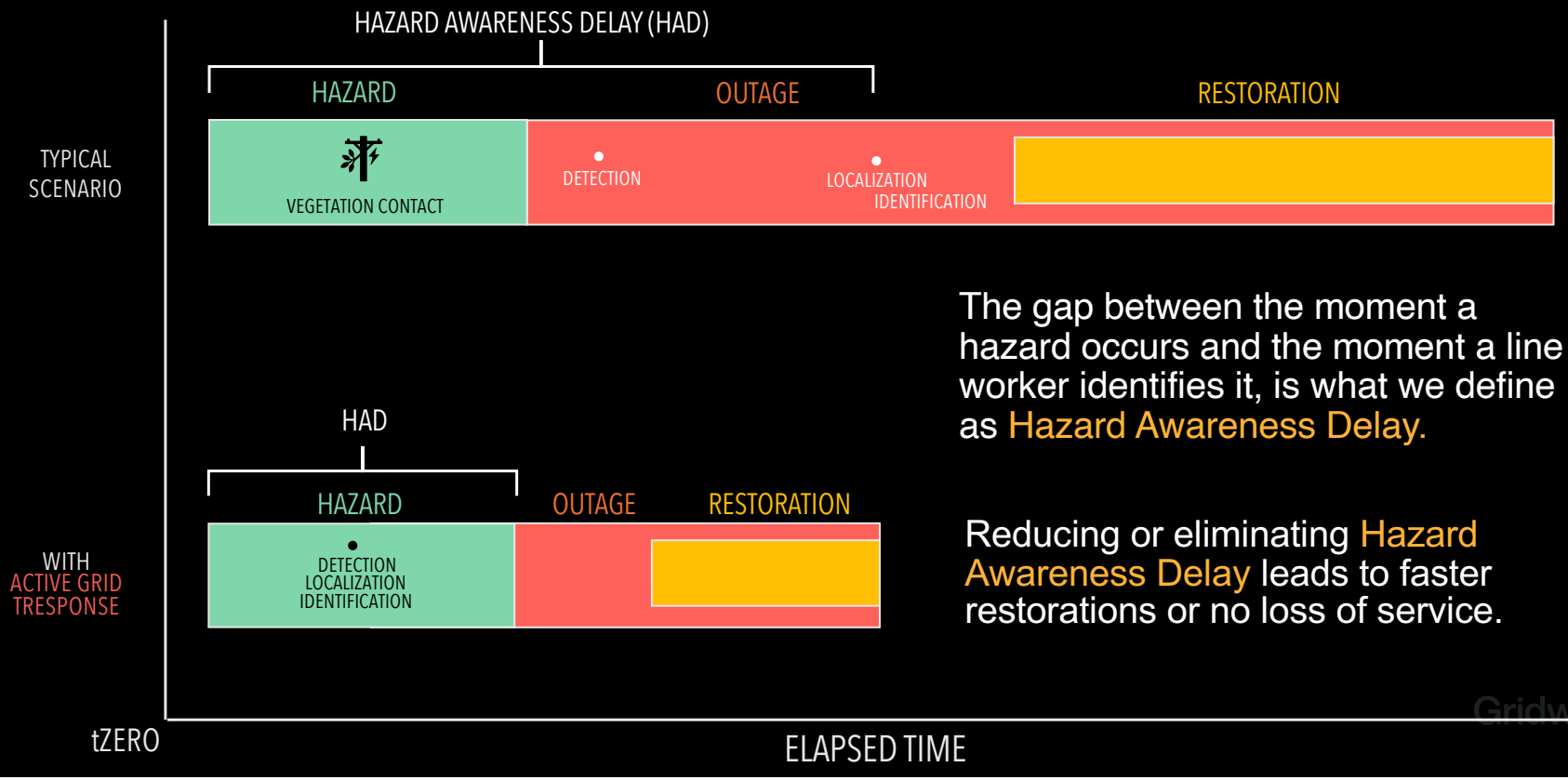
And it will change how we see the grid.

Gridware

Eliminating Hazard Awareness Delay.



The gap between the moment a hazard occurs and the moment a line worker identifies it, is what we define as Hazard Awareness Delay.

Reducing or eliminating Hazard Awareness Delay leads to faster restorations or no loss of service.

Safety & Ignition Risk.

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Ignition Test.

Gridware's ARC (Live Test Facility)

Vegetation Combustion Test:

- Over 2 mins before combustion and flashover arcing
- 100mA fault current during initial stages of combustion

Research has shown (EDM):

- Green wood is a poor conductor
- Dry (dead) wood is a very poor conductor
- Carbon or wood char is a good conductor
- Rain speeds up the fault, but does not make a difference between fault or no-fault
- Carbonization leads to low-impedance

Combustion times vary leaving time to respond

Tree on Covered Conductor.

07/05/24 @ 8:41:07p

Report

Date: 12/13/24 at 07:32:55 PT

Status: Emergent event, energized line

Alert: On 12/13/2024 at 07:32:55 US/Pacific a Gridscope device on Pole XXXXX experienced a vibration indicative of vegetation impacting primary distribution lines. A safety hazard may be present. Lines remain energized.

Date: 12/13/24 at 08:47:46 PT

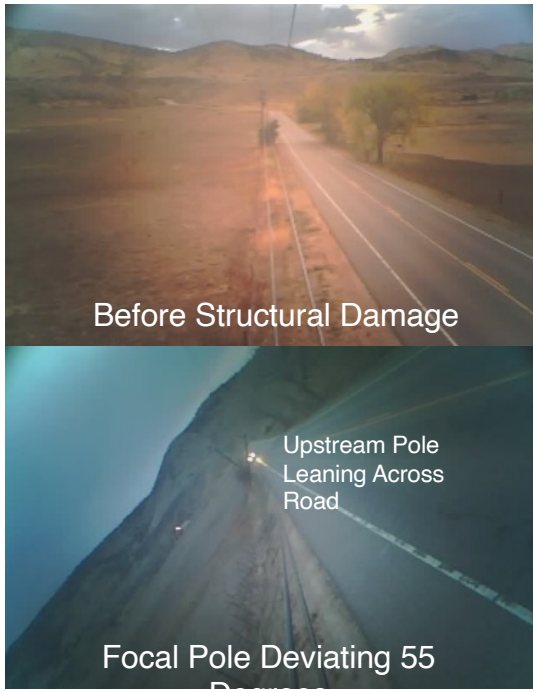
Status: Resolved

Utility Response: Event entered into system as a “hazard tag” with no associated outage. Crew arrived on site, de-energized, removed tree before it could do damage.

Re-energization occurred 1 hour 15 minutes after impact.

Wind-Driven Pole Structural Damage.

3/17/25 @ 6:30p



During a red flag warning **wind gusts in excess of 45 mph** causing multiple adjacent poles to structurally fail, without making contact with the ground – **lines remained energized**.

Subsequent **fire spread modeling** on this ignition point had this impacting

3200 ACRES

360 STRUCTURES

Tree on Line - HIF.

07/05/24 @ 8:41:07p

Tree falls and hangs on energized lines leading to a high impedance fault. EPSS enabled on circuit without a protective function initiated.

“When he arrived onsite, he saw a branch had fallen and was burning on our lines – and said if this had not been reported or dispatched it would have surely caused a forest fire.”

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Bird Phase-To-Phase Causes Ignition.

9/6/24 @ 12:19p

> “This would have been a major fire today, if we didn’t get that alert!”

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Resilience & Situational Awareness.

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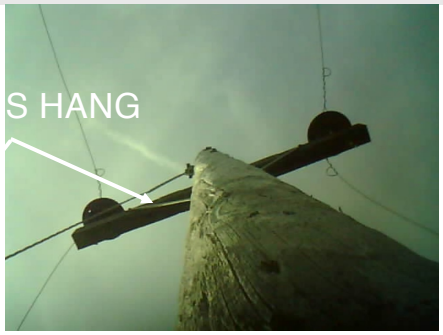
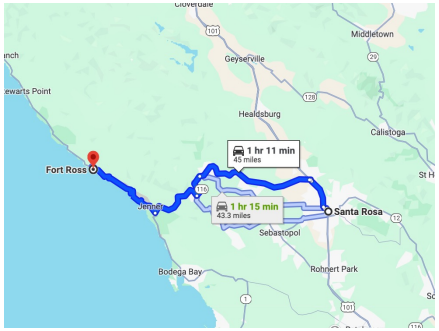
Tree Takes Down Lines.

1/06/24 @ 11:48a





Crew was dispatched without T-man, saving at least 1hr 11min.

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Trees Down 14 Lines in 24 Hours.

02/04/24

Full visibility even though lines were deenergized

X=Tree strikes

Gridware

Thank you!

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https://resources.gridware.io/cou-tools

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