2017 APTA Rail Conference

Technology and Safety in the Rail Industry.

Peter M. Bartek
Vice President
Protran Technology

PROTRAN
TECHNOLOGY
A Harsco Rail Company

Track Workers & First Responders:

SECURE.

With a system as simple as just two devices.

Personal Alert Device

Wayside Unit

See what WMATA, SACRT, and Denver are doing to keep track workers and first responders safe.

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Newest Safety Technology for Track Worker Safety

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CPUC, NTSB, FRA and FTA Approvals and recommendations

Track Worker Fatalities

- 2017 4 + Worker Fatalities - Jan - March
- 2016 14 + Worker Fatalities
- 2015 21 + Worker Fatalities
- 2014 15 + Worker Fatalities

54 Workers Killed from 2014 - 2017

124 Workers killed since 2009

On Track Equipment Collisions

- 2017 – Approximately 75
- 2016 – Approximately 106
- 2015 – Approximately 182
- 2014 – Approximately 145

Most are not reported

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1. THE PROBLEM

- Track Worker Fatalities
- On Track Equipment Collisions

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Key Human Factors

- 12 top preconditions to unsafe acts
  - Fatigue
  - Stress
  - Complacency
  - Communication
  - Awareness
  - Distraction
  - Lack of knowledge
  - Teamwork
  - Lack of resources
  - Pressure
  - Lack of assertiveness
  - Norms

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2. THE CAUSE

- Safety Risks
  - Single Point Failures
  - Track Inspectors, Walkers, Lone Worker
  - Adjacent Track

- Human Factors
  - Dirty Dozen
  - 300 +

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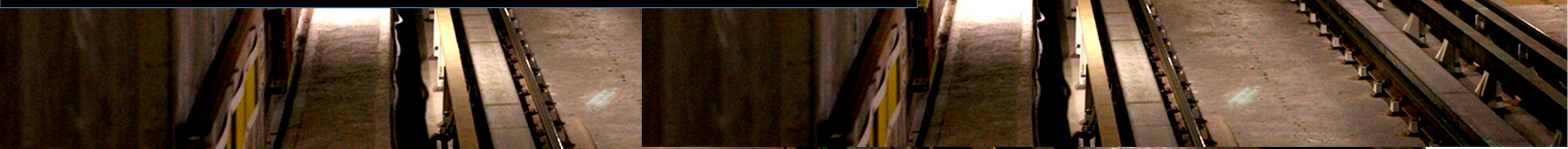
3. REGULATORY RESPONSE

- NTSB – R-08-04
- NTSB – R-08-05
- NTSB – R-08-06
- NTSB – R-13-39
- NTSB – R-13-40
- FRA – 17-14
- CPUC – GO 175
- FRA CFR Part 214 Revisions



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Technology that adds **“WARNING” AND “REDUNDANCIES”**
will mitigate the 12 top preconditions to unsafe acts

What is better
Advance Warning?
OR
Redundant Signal Protection?

It depends on the Agencies Standard Operating Procedures

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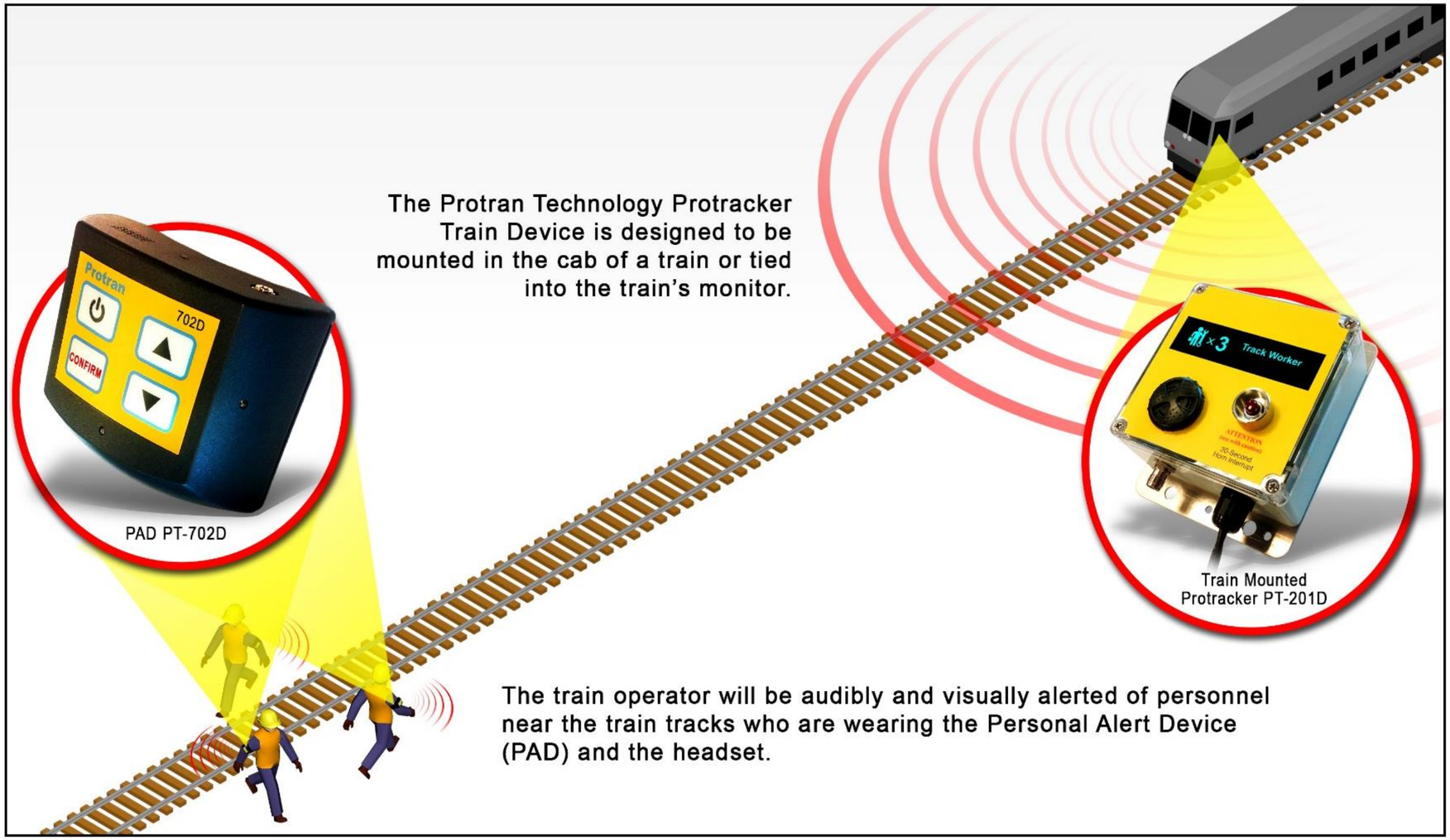

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The train operator will be audibly and visually alerted of personnel near the train tracks who are wearing the Personal Alert Device (PAD)

PAD PT-704

UNCONFIRMED

Ranging Train Mounted Protracker PT-206

09/30/16 HIND

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Collision Avoidance

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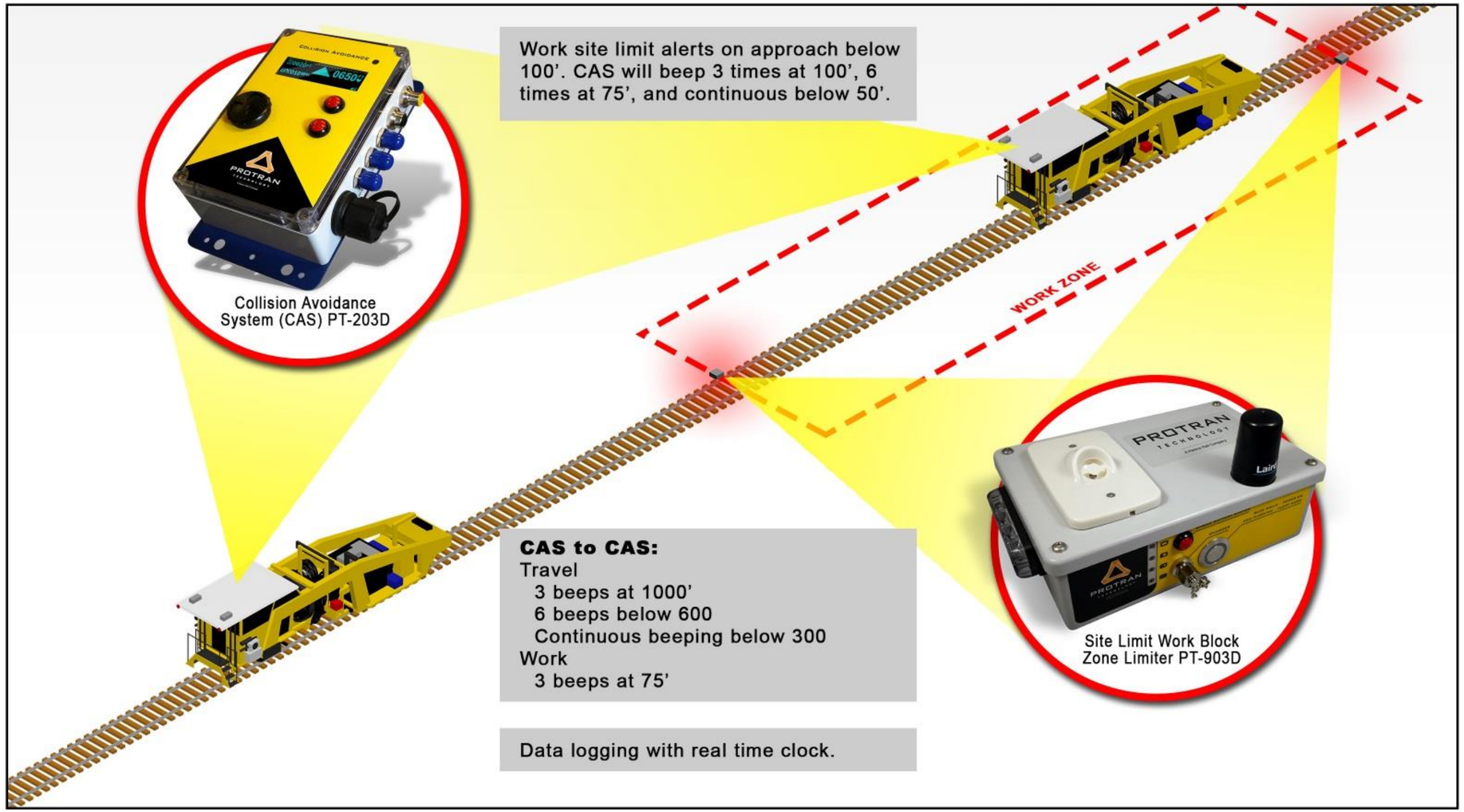

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Real Time Location Awareness

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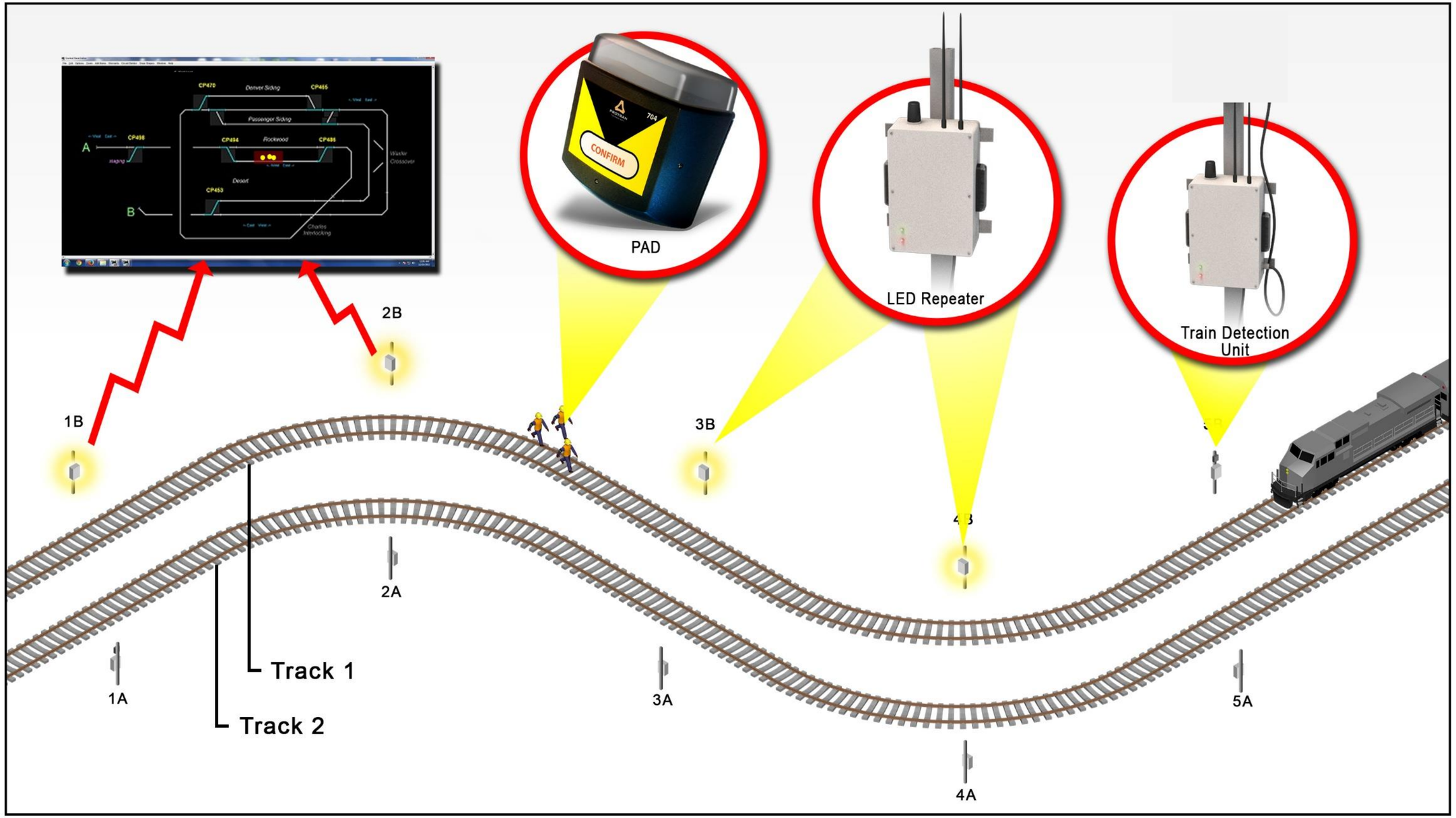

WMATA

03/15/17 HIND

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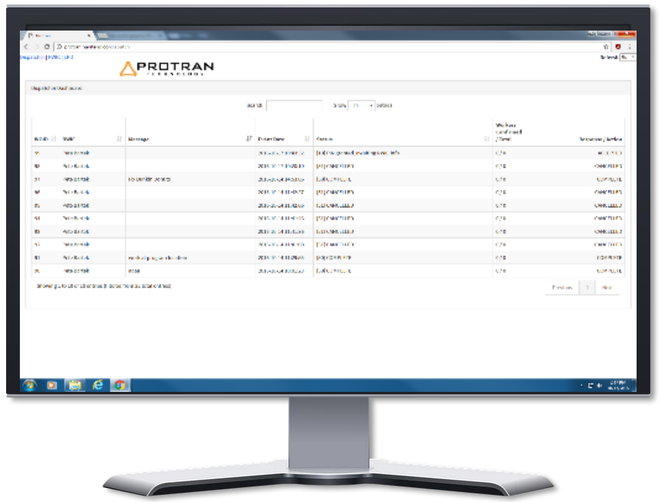
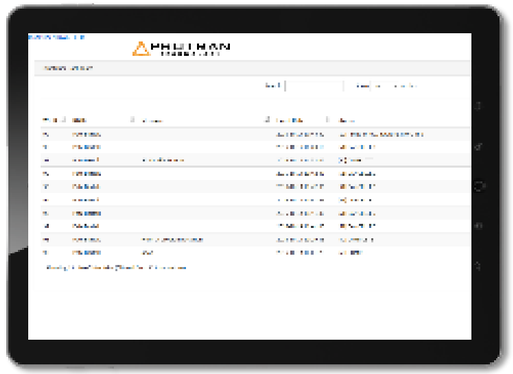
Enhanced Employee Protection
Redundant Signal Protection





Warning and Confirmations when Working Blocks are Applied and Removed

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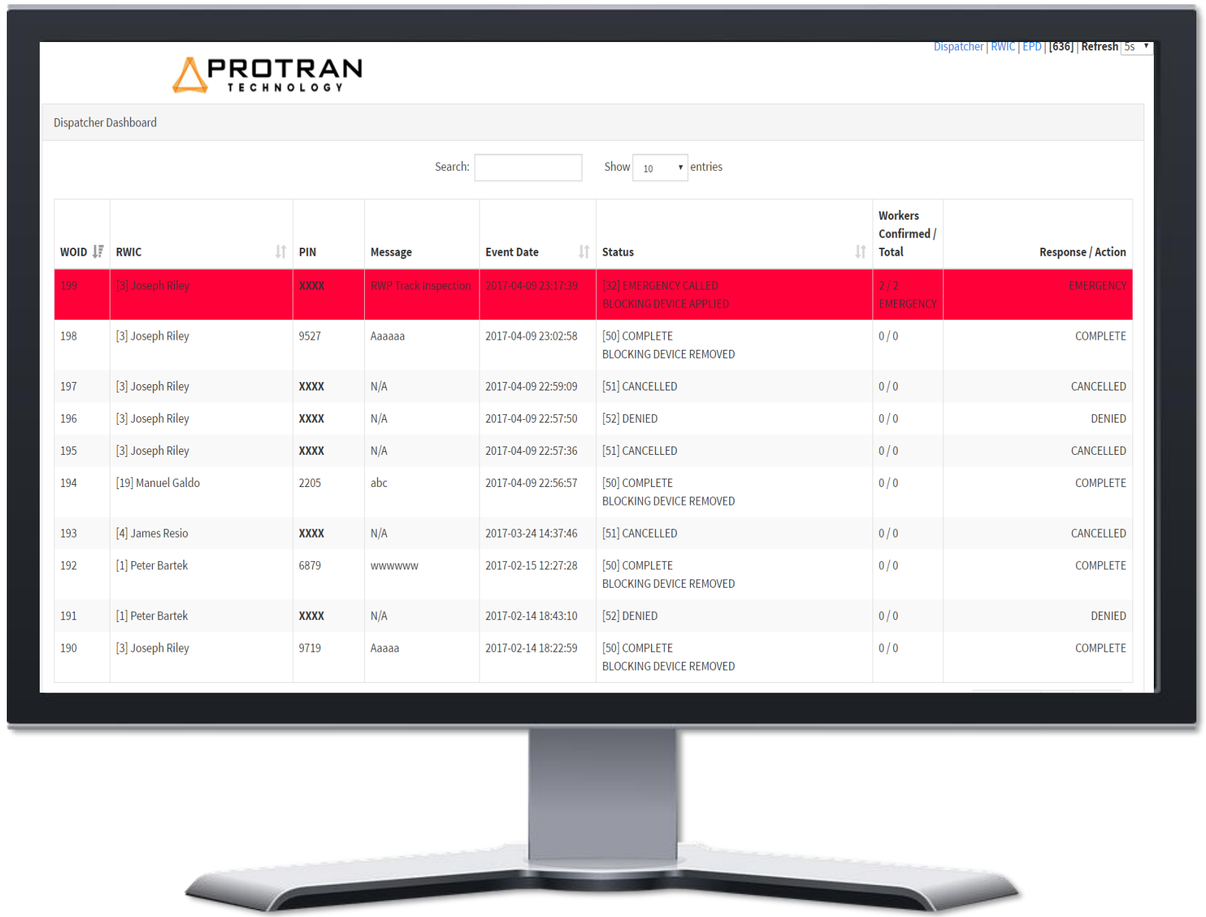

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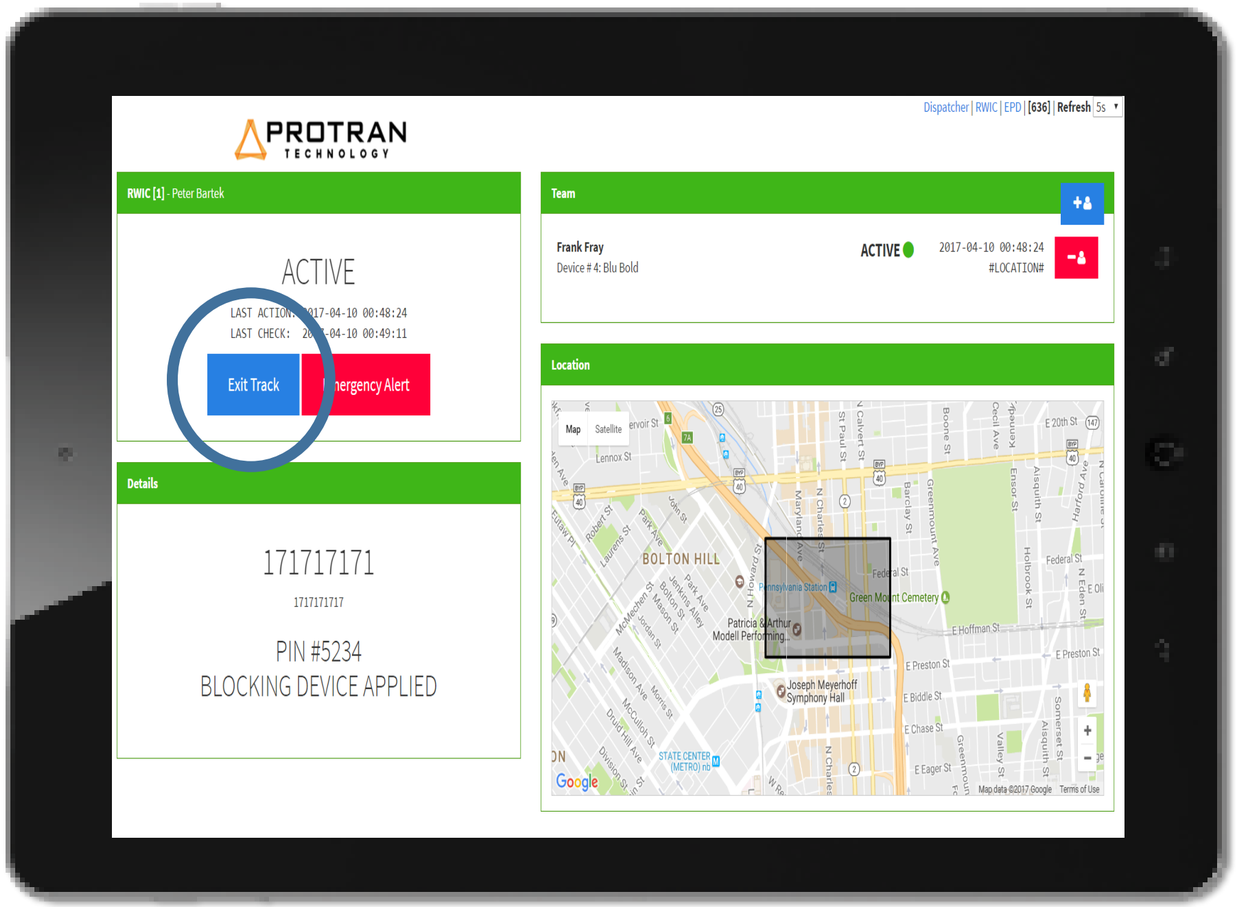

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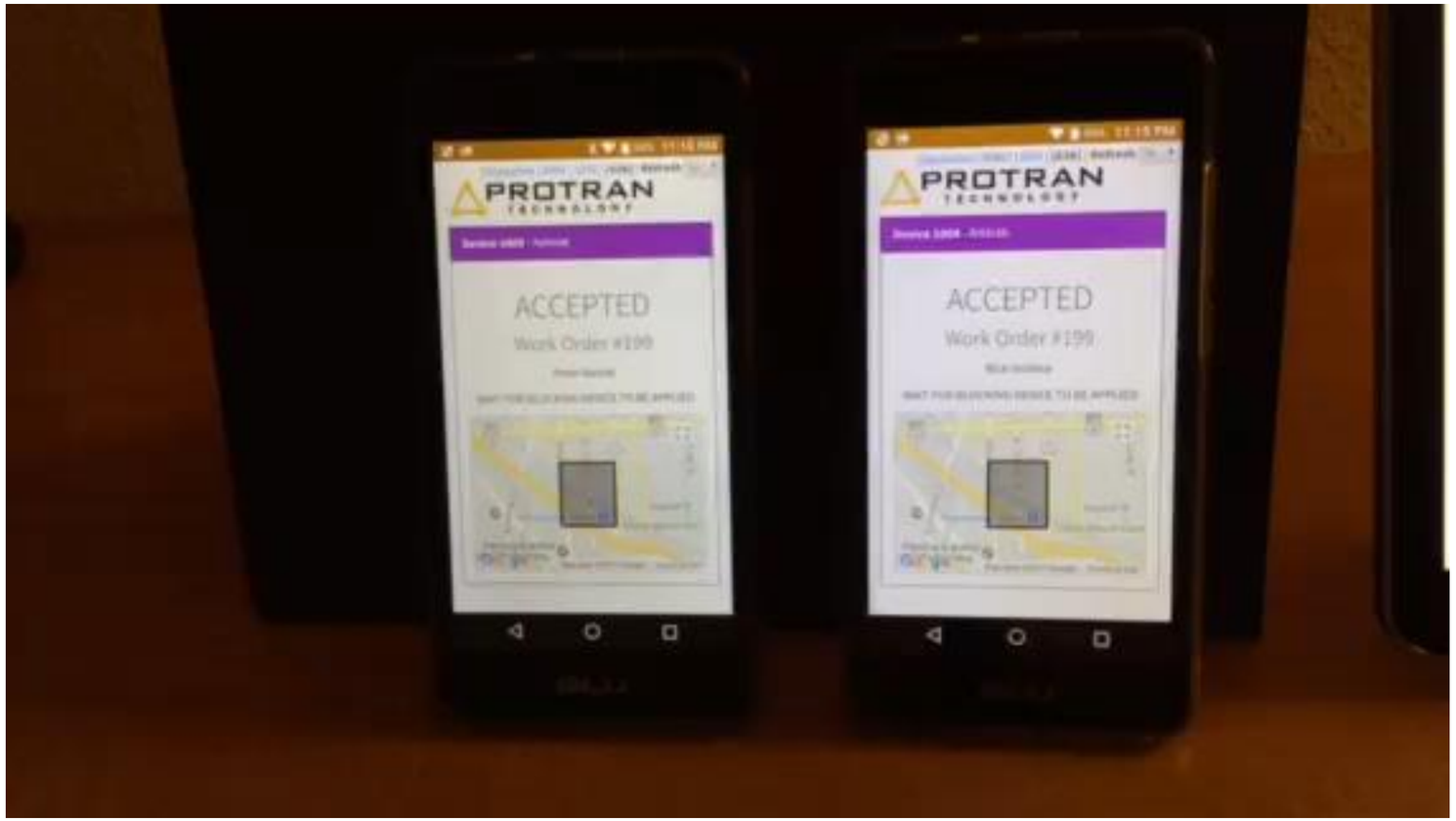

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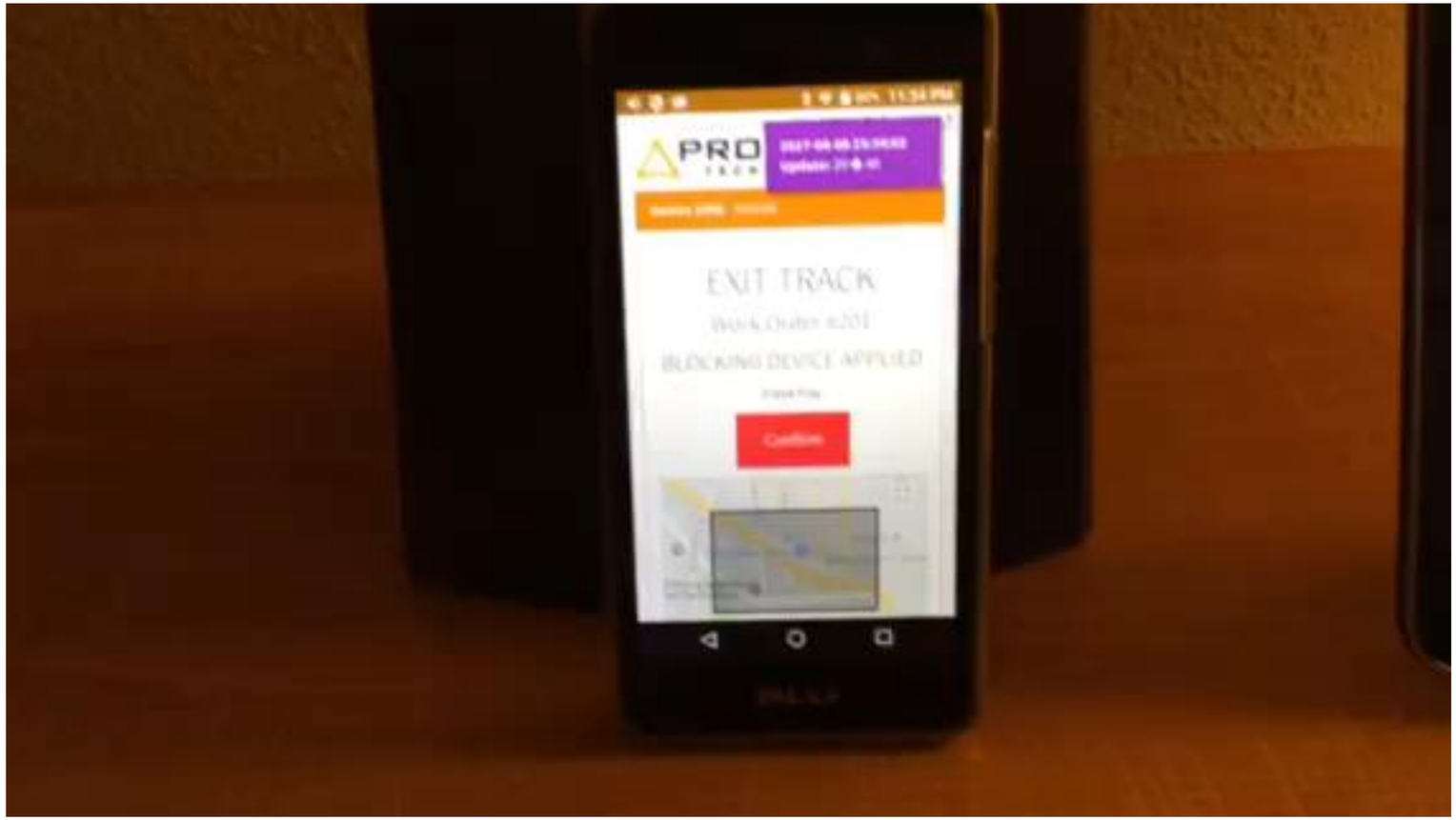

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Current Results

NTSB R-08-04, R-13-39 and R-13-40

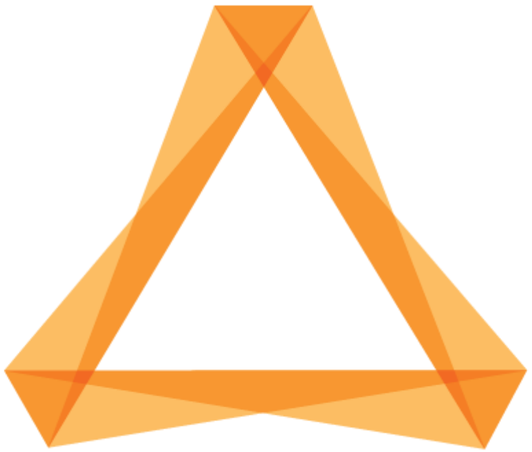
WARNING SYSTEMS RESULTS:
- ADD to Existing SOP as Secondary WARNING
- Over 6,000 Systems in Operation
- Over 8 Years of Revenue Service
- DATA Logging for Training and Investigation

=

ZERO CLOSE CALLS

ZERO FATALITIES

Thank you



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