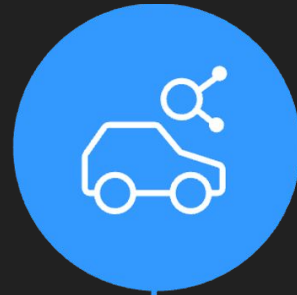




VALERANN

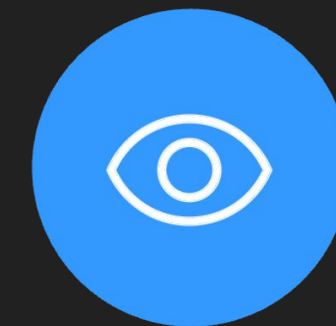


HARNESSING THE POWER OF **AI** FOR ROAD SAFETY



VALERANN'S VISION

**Use data to create the biggest improvement
in road safety since the seat belt.**



IDENTIFY

Incidents

RESPOND

Sooner

REDUCE

Accidents



WE ARE DEALING WITH AN OVERWHELMING AMOUNT OF DATA



1M

Vehicle Counts



50M

Object Detected



10M

Vehicle data points



1K

Mentions



50K

Weather data points



100 s

Phone Calls

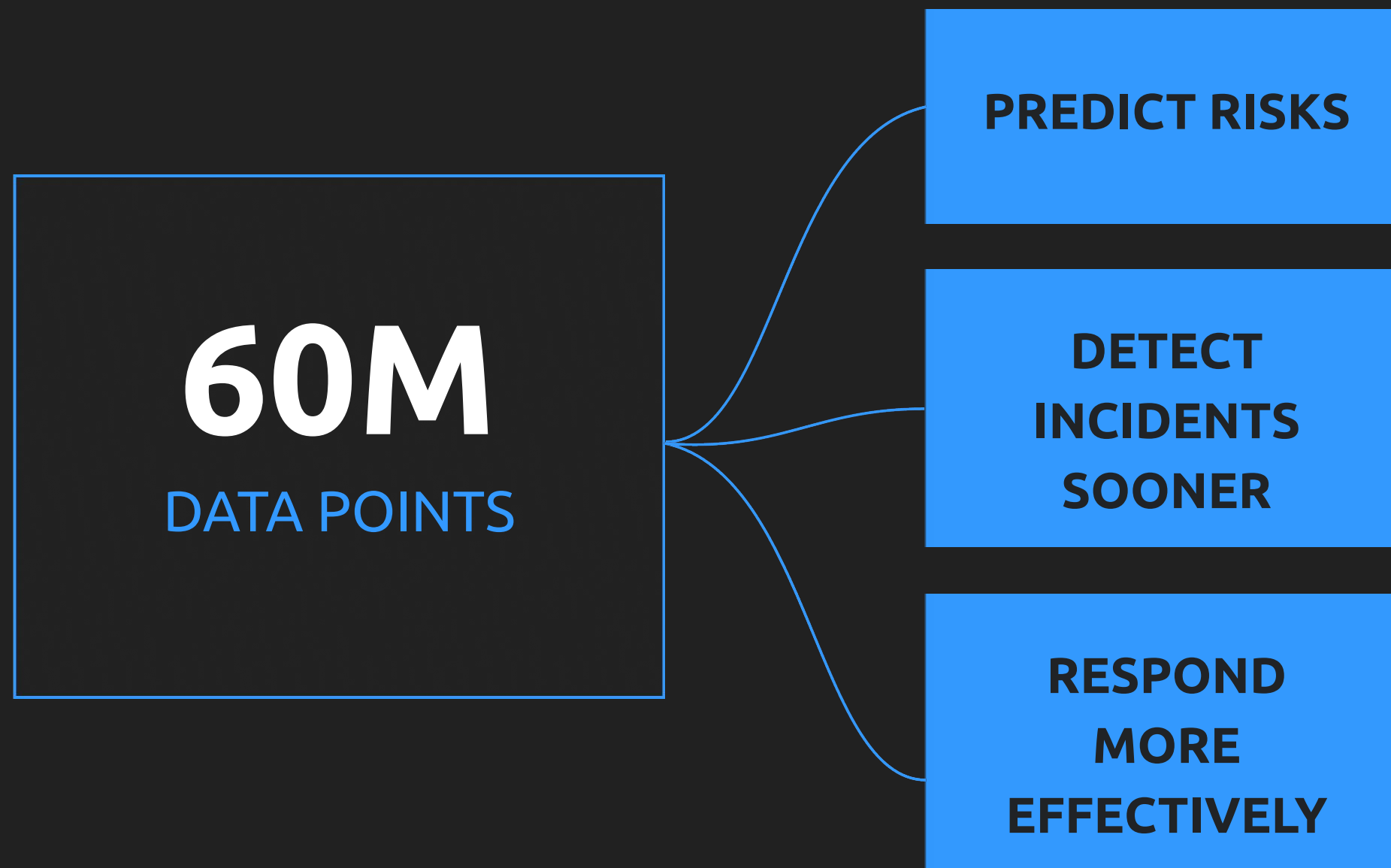


3K

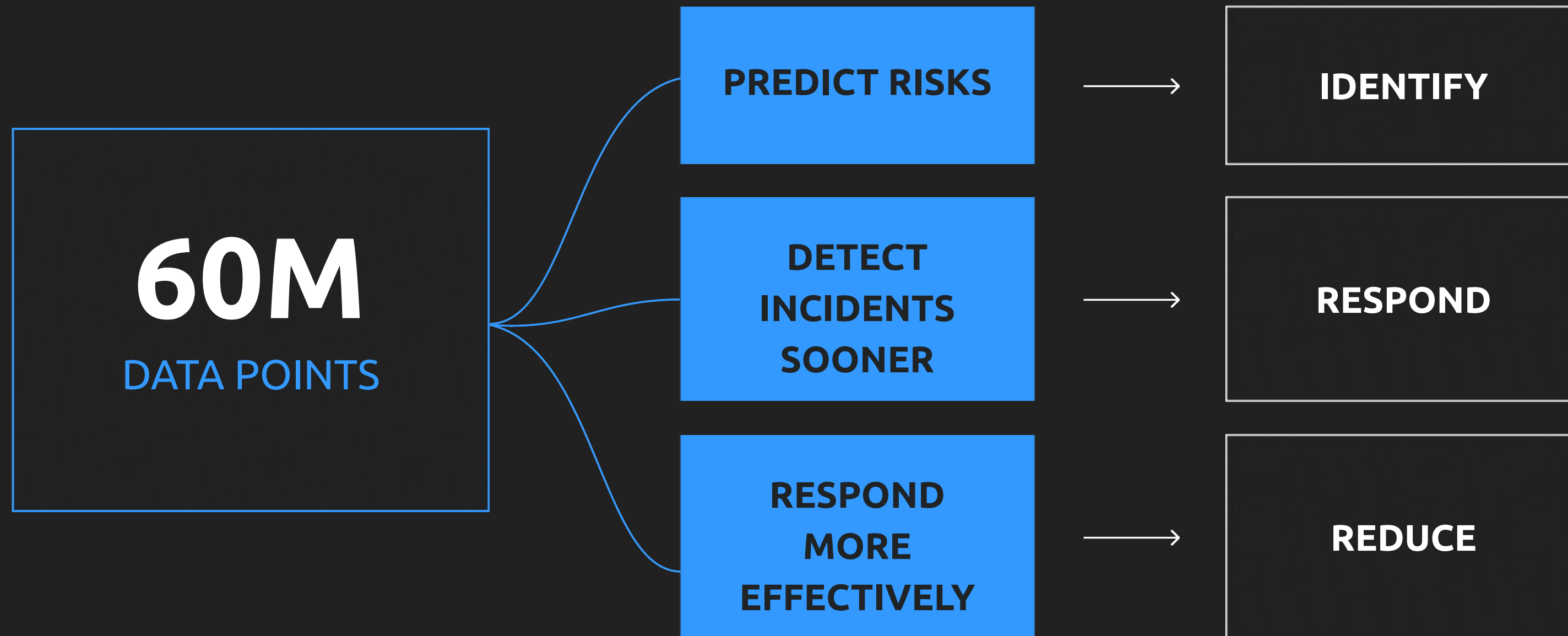
Traffic-related events

That's where AI comes in

AI - connecting the dots



AI - connecting the dots



Hundreds of risk factors

- Sun Glare
- Ice
- Rain
- Wind

- Time Of Day
- Time Of Week

- % Heavy Vehicles
- Speed
- Traffic Flow

- Paved Shoulder - Left
- Roadside Object - Left
- Roadside Distance - Left
- Crash Barrier - Left

- Median
- Central Barrier
- Center Line Rumble Strips
- Grade

- Sight Distance
- Slope
- Curvature
- Quality Of Curve

- Lane Width
- Number Of Lanes
- Road Condition
- Friction Coefficient

- Paved Shoulder - Right
- Roadside Object - Right
- Roadside Distance - Right
- Crash Barrier - Right

Speed Control

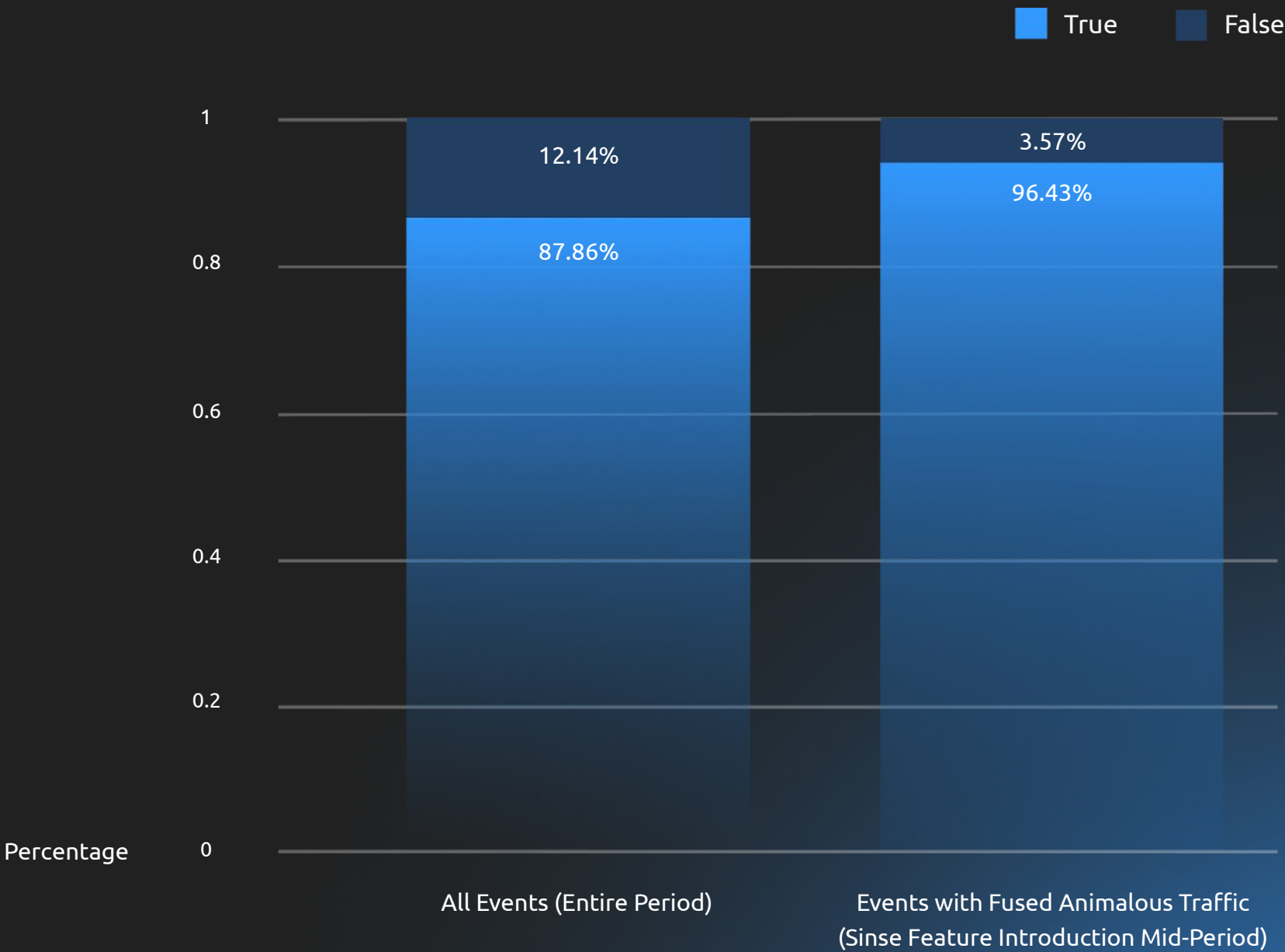
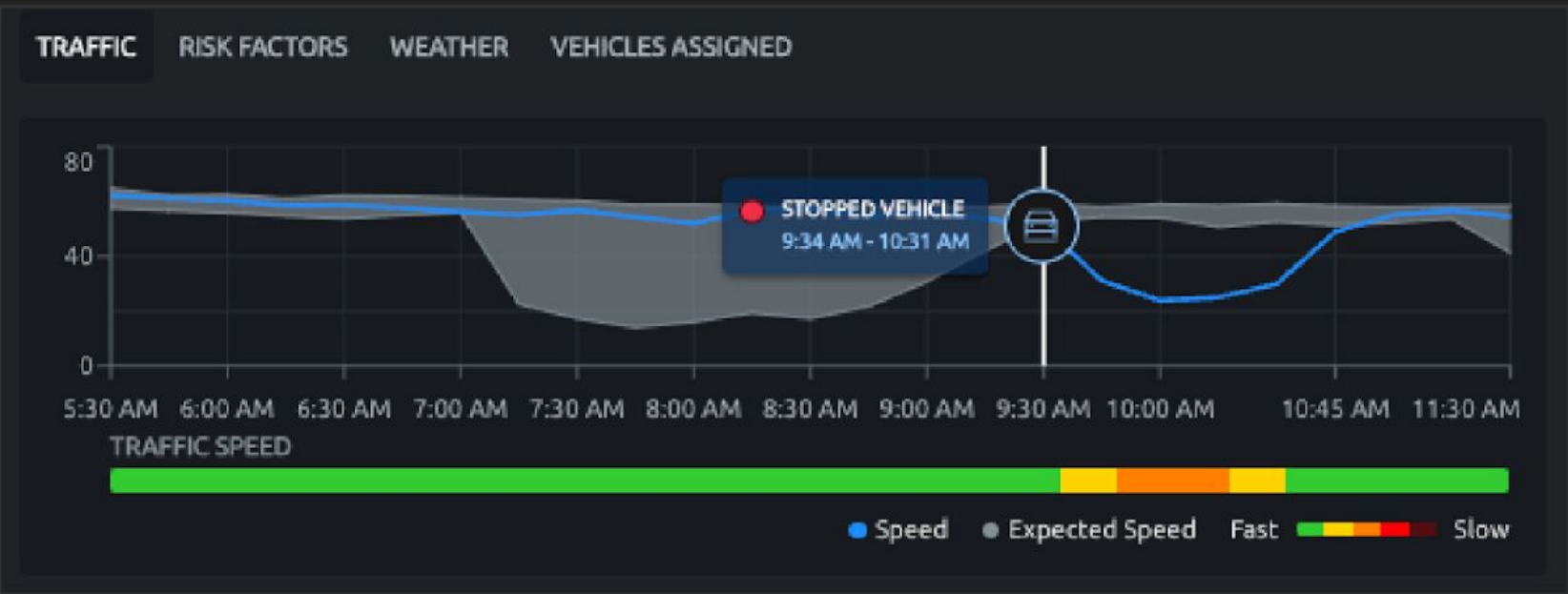
- Street Lights
- Edge Of Carriageway
- Rumble Strip
- Parking Area
- Service Area
- Pedestrian Fencing

Detecting anomalies with historical traffic flow



AI detects anomalous traffic patterns

And uses it to enhance trust in incident prediction >96%



Sifting through data (a client example)



854,000

alerts



+10,000

alerts / day

—



0,3%

accuracy

ALERT FATIGUE

LONG RESPONSE TIME

60M
DATA POINTS

12 DIFFERENT
SYSTEMS

5,000 ALERTS

852,000

0,3%

DEDUPLICATION

VISION

CAV

ITS/IOT

CROWD
SOURCE

102,000

41%

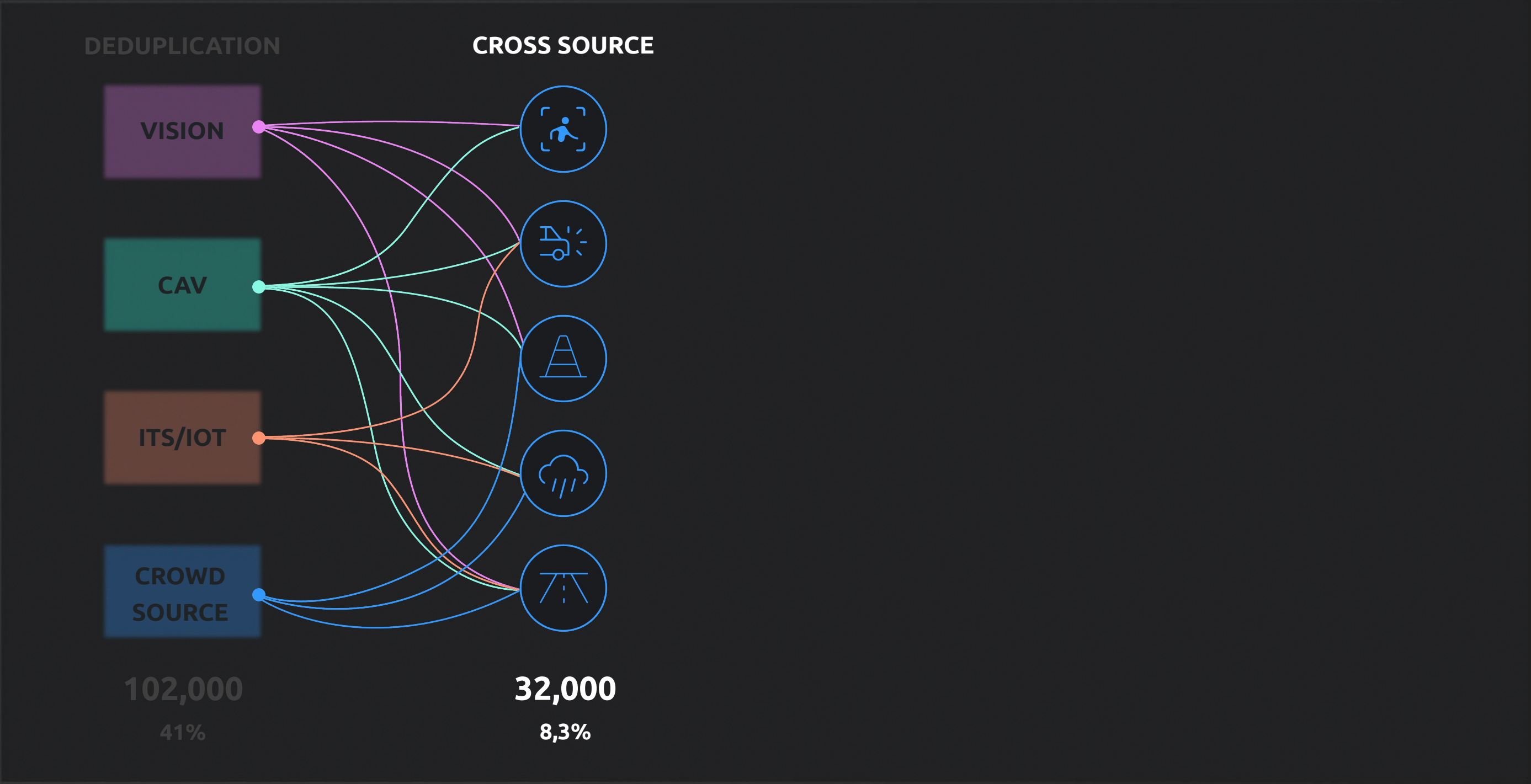
ALERT FATIGUE
LONG RESPONSE TIME

60M
DATA POINTS

12 DIFFERENT
SYSTEMS

5,000 ALERTS

852,000
0,3%



ALERT FATIGUE

LONG RESPONSE TIME

60M
DATA POINTS

12 DIFFERENT
SYSTEMS

5,000 ALERTS

852,000

0,3%

DEDUPLICATION

VISION

CAV

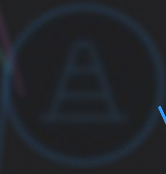
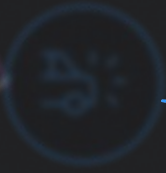
ITS/IOT

CROWD
SOURCE

102,000

41%

CROSS SOURCE



32,000

8,3%

CROSS TYPE

Person getting
out of a
broken-down
vehicle

Accident with a
5-minute journey
delay in the rain

19,900

13,7%

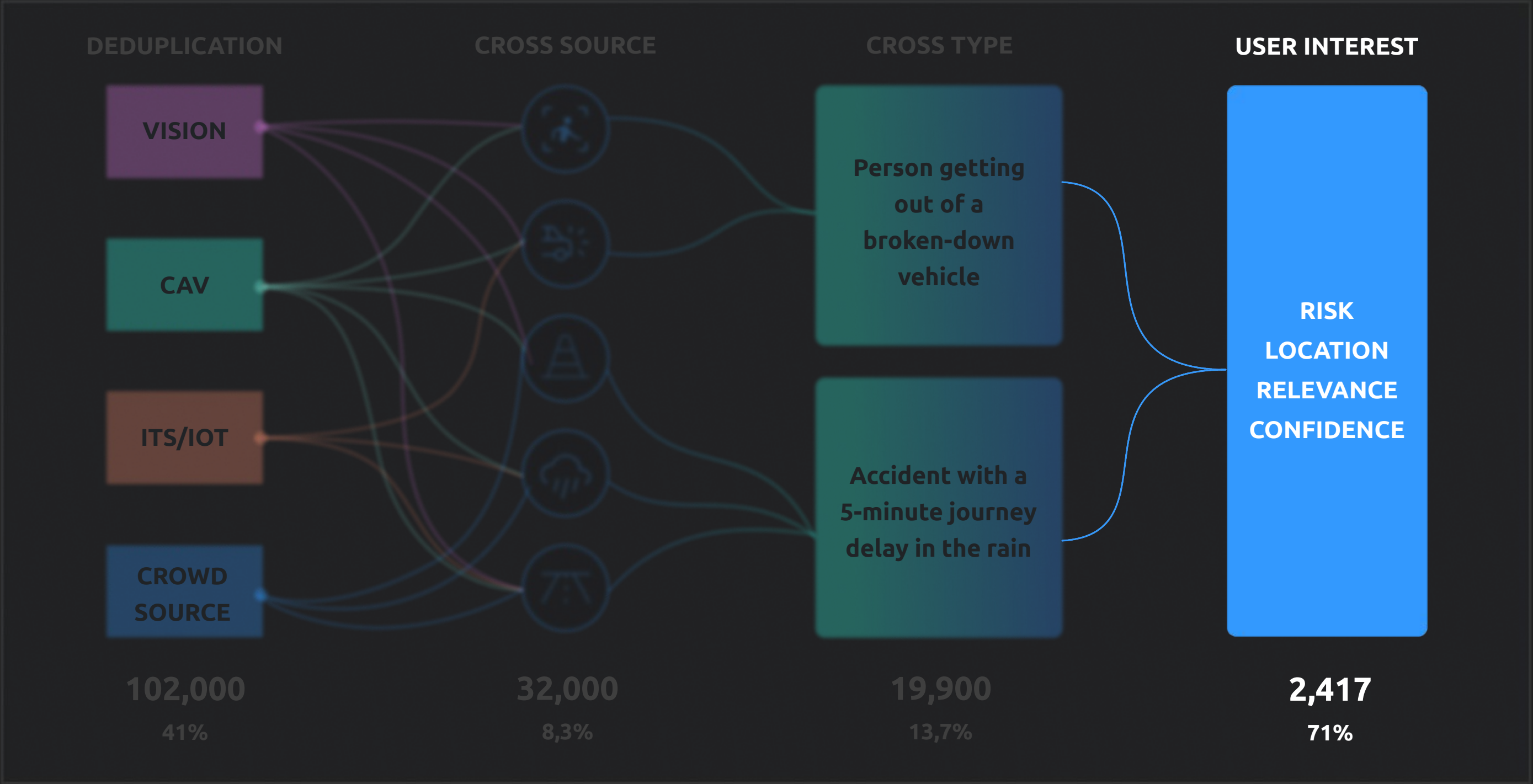
ALERT FATIGUE
LONG RESPONSE TIME

60M
DATA POINTS

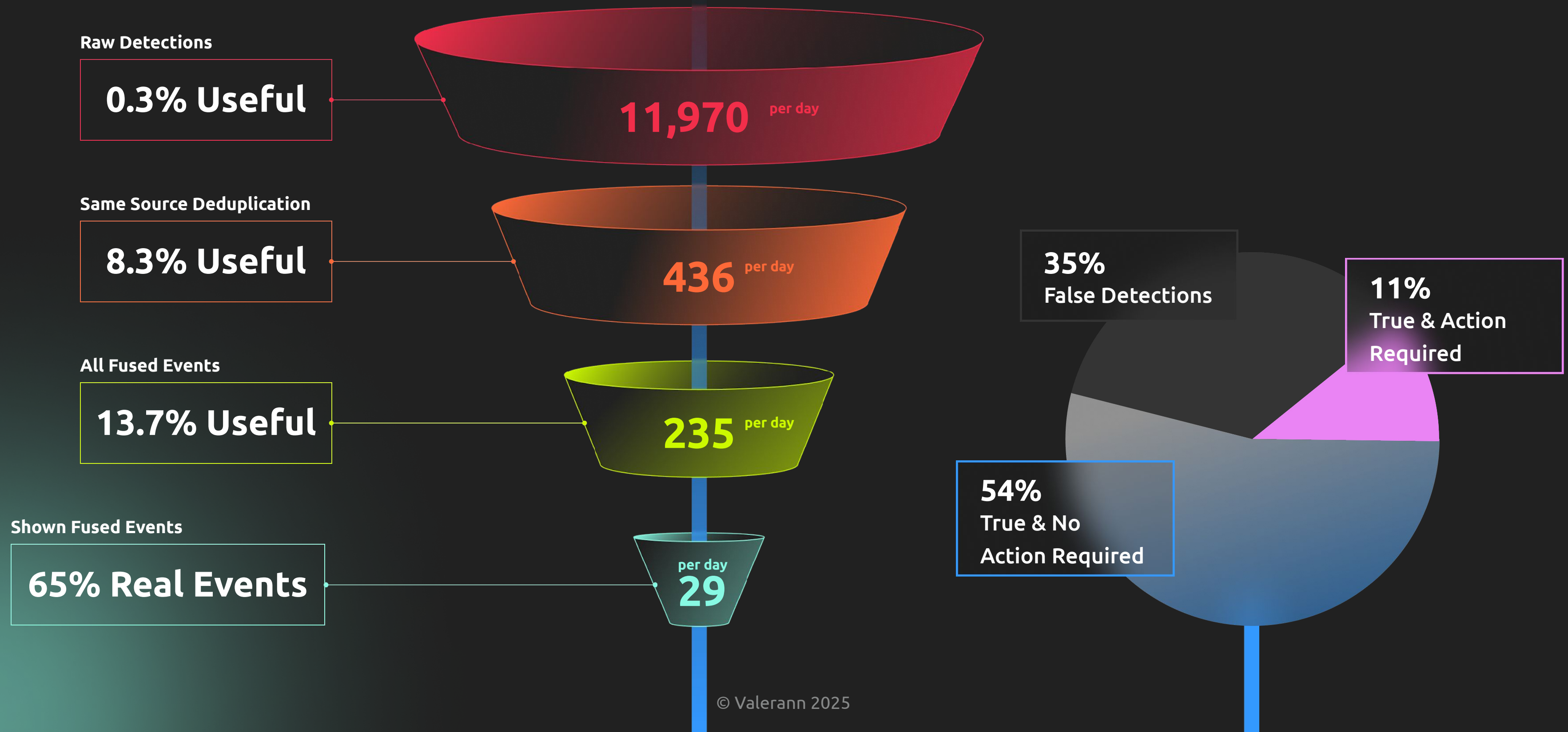
12 DIFFERENT
SYSTEMS

5,000 ALERTS

852,000
0,3%



Reducing data-related noise to provide actionable alerts



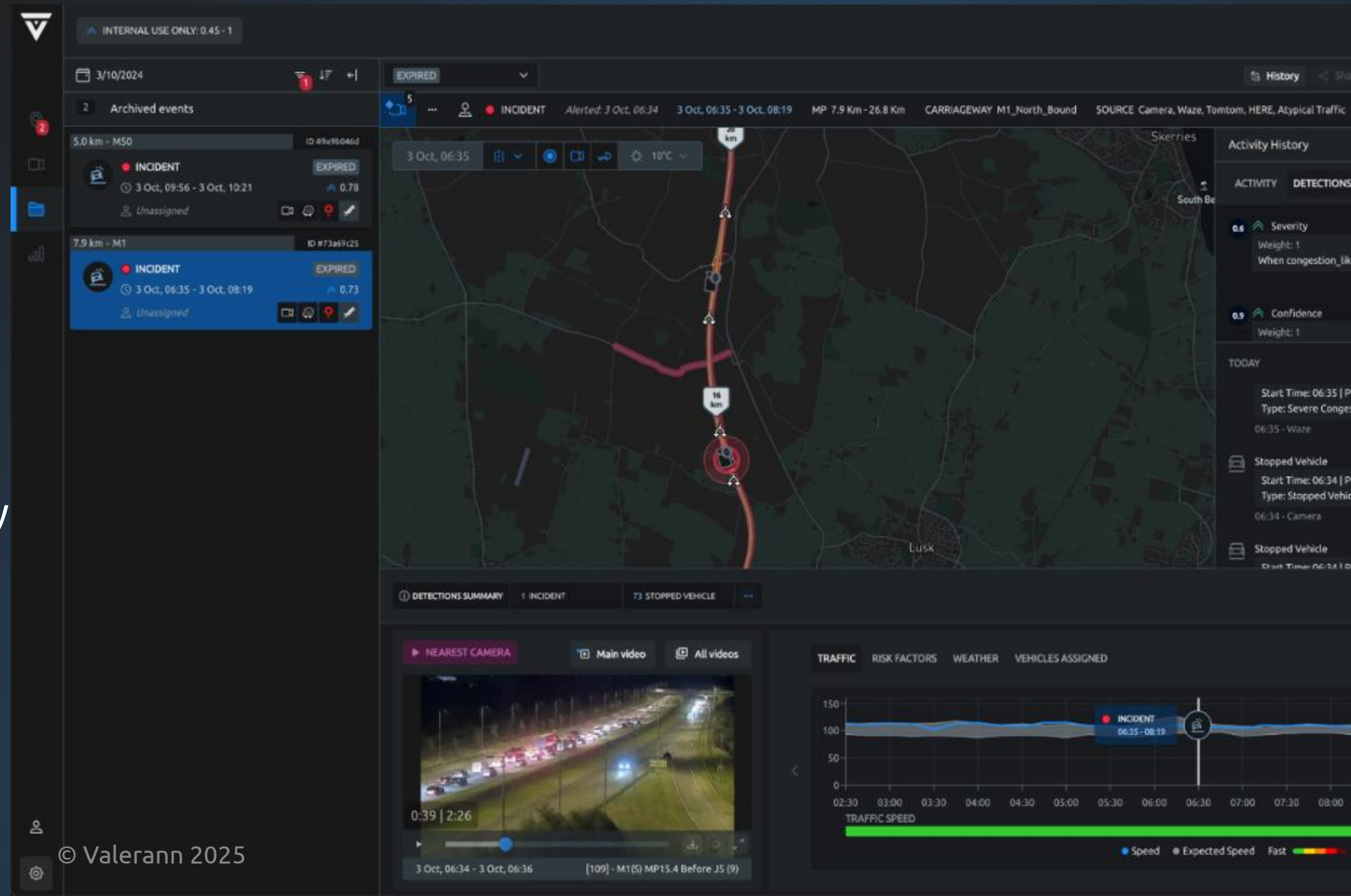
Detecting incidents through Data Fusion

Multiple vehicle collision

- 134 individual detections alerts from 5 different sources

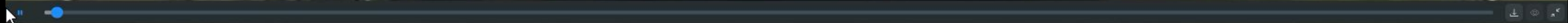
LbV analyzed and fused them into 1 event
Alerted user within 1 minute of collision occurrence

Without fusion, there would have been too many 'data-related' alerts to manage





0:01 | 2:26



Detecting incidents through Data Fusion

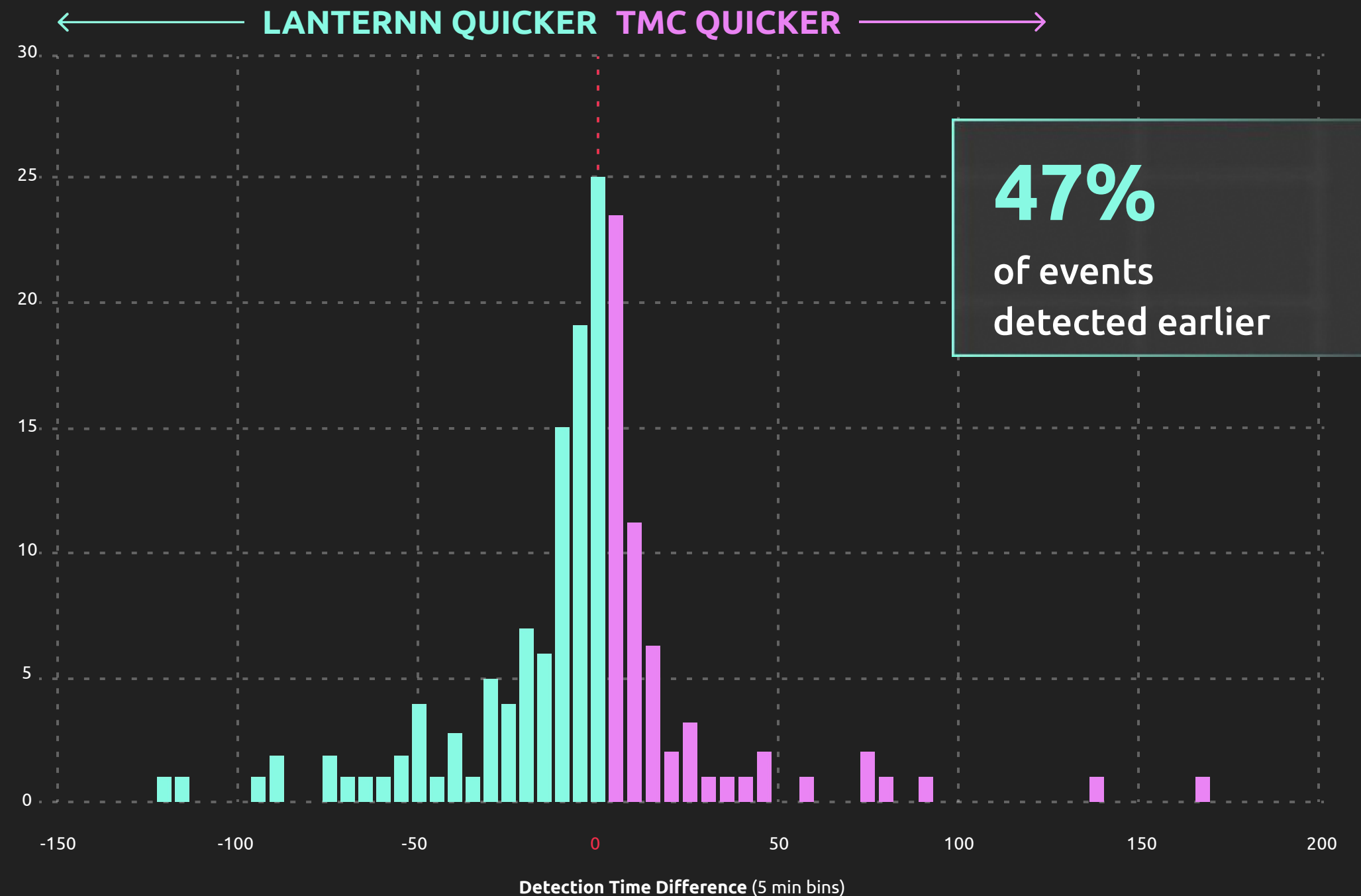
- 10:34** Stopped vehicle - machine vision
- 10:35** Pedestrian on the road - machine vision
- 10:38** Congestion - Waze
- 10:40** Severe congestion - HERE
- 10:45** Pedestrian on the road - Waze
- 10:50** Unexpected congestion - loops
- 10:58** Stopped vehicle - Waze
- 11:08** Pedestrian on the road - Machine Vision



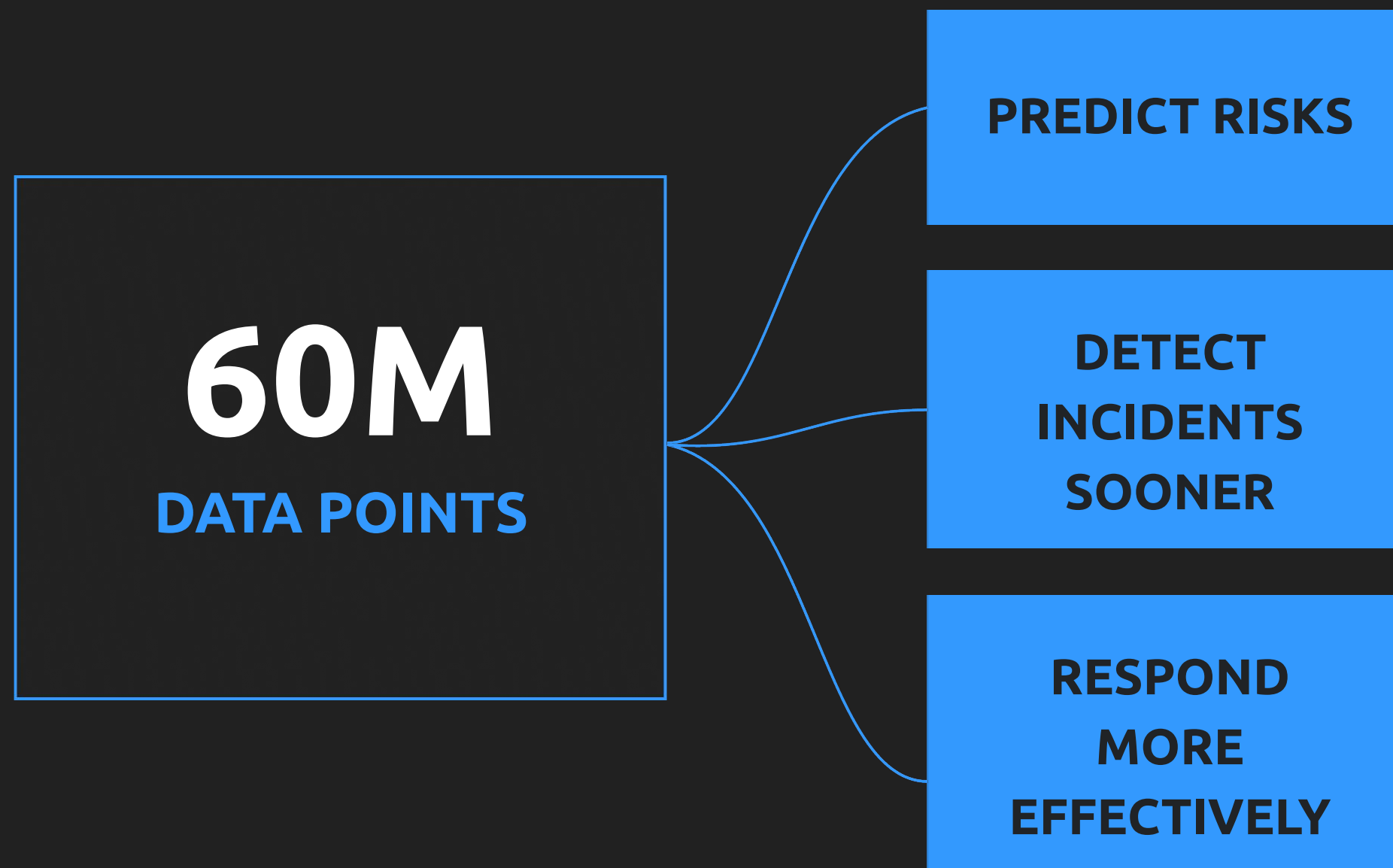
Relevant actionable information identified quicker

- 47% of events were found faster using data fusion (road section 1)
- 65% of events were found faster (road section 2)

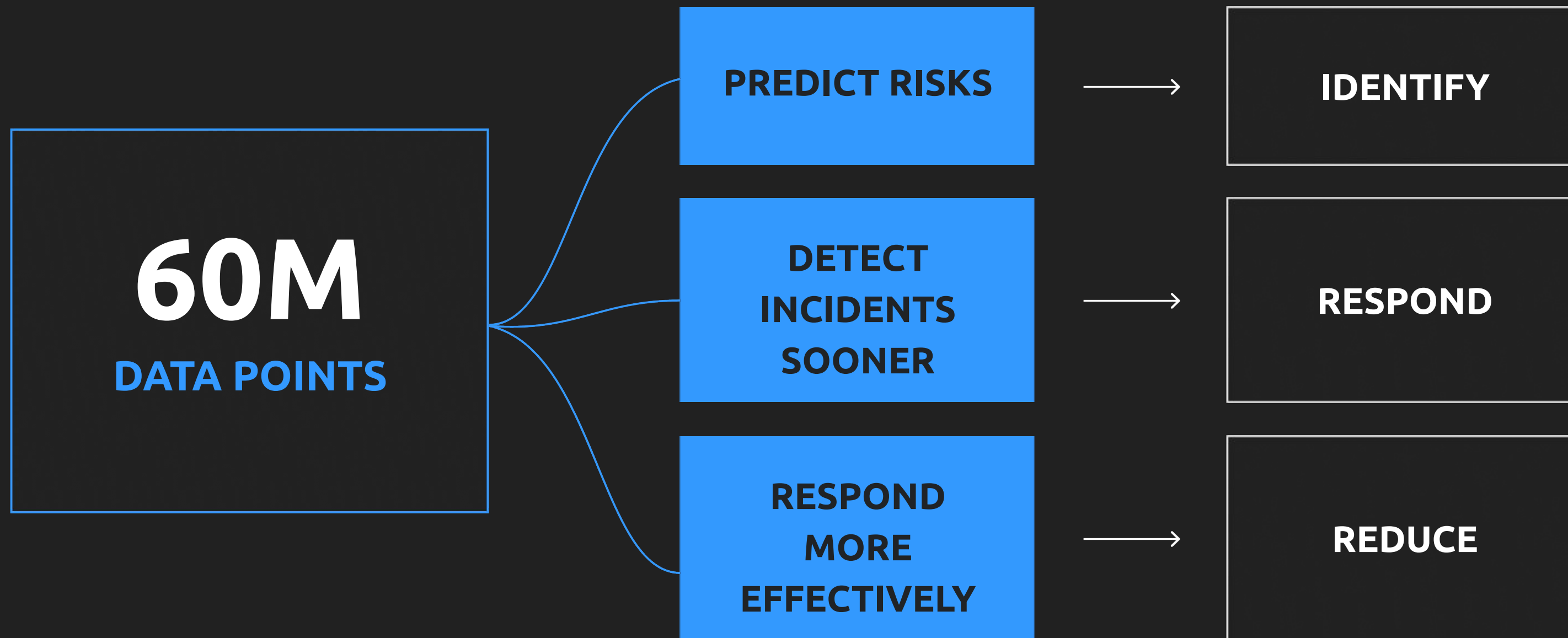
- 25 minutes improvement on average for events when detected earlier by Lanternn (road section 1)
- 35 minutes improvement (road section 2)



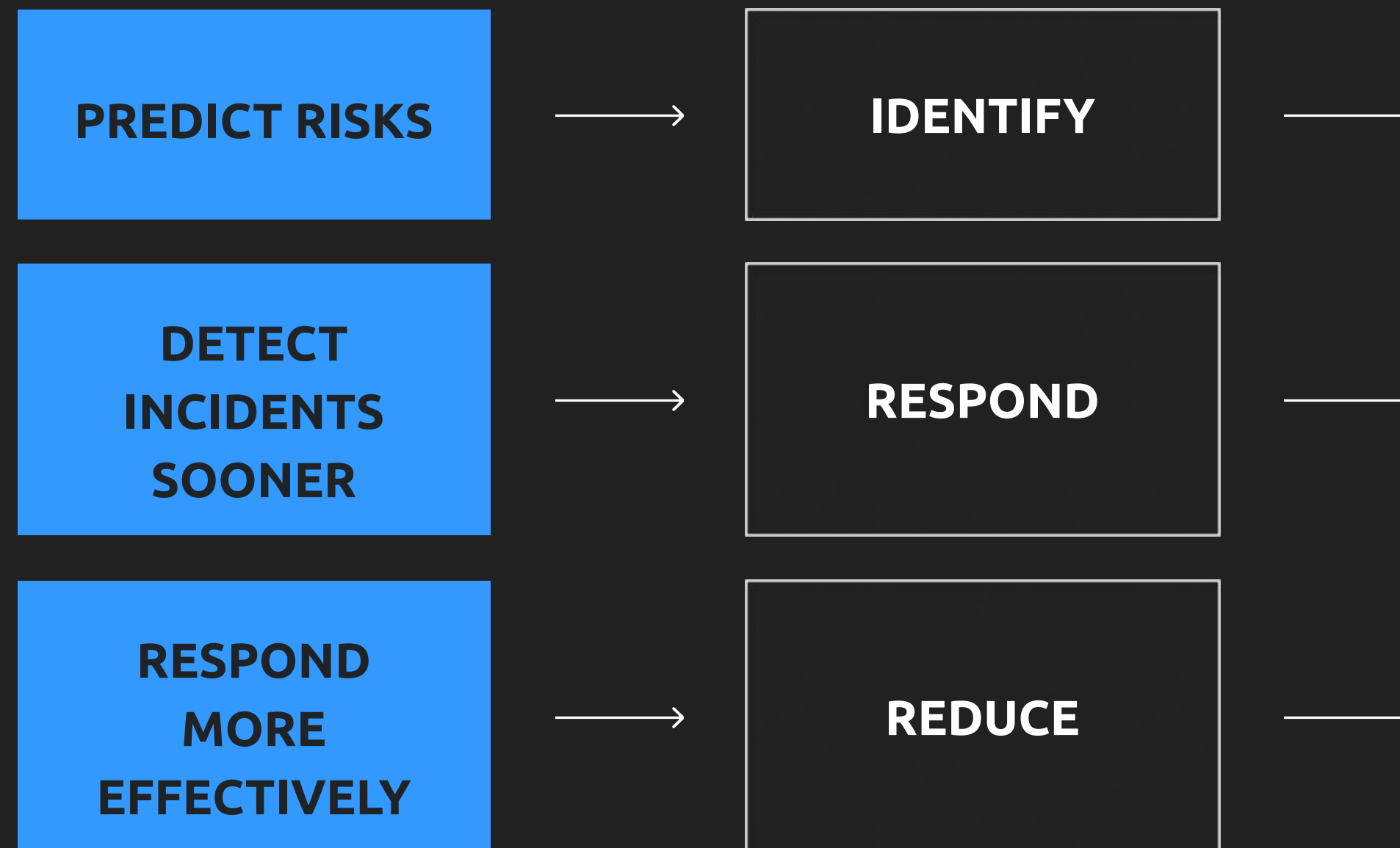
AI - connecting the dots



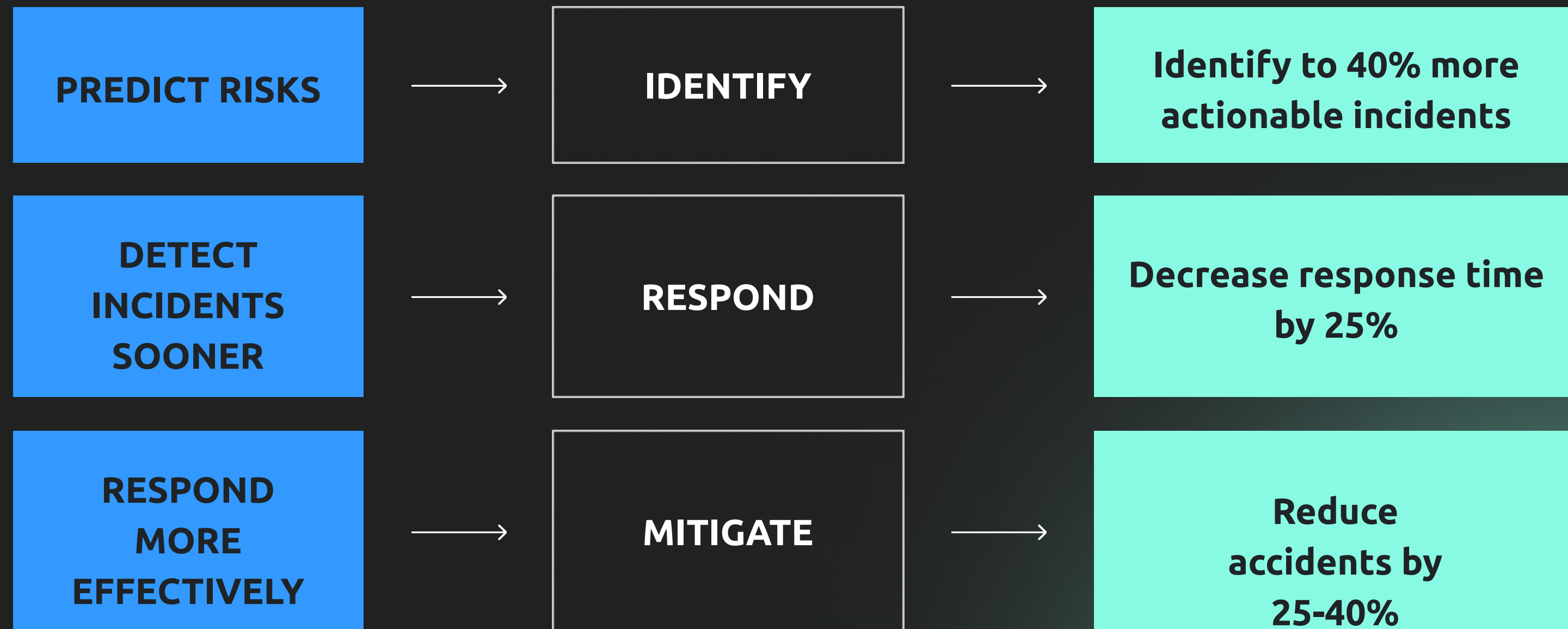
AI - connecting the dots



AI - connecting the dots



AI - connecting the dots





VALERANN

THANK

POWERED BY DATA. DRIVEN BY INSIGHT.

YOU!

John Fagan

CRO

813-245-7721

john.fagan@valerann.com