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STRATEGIES FOR MAINTAINING COMPLIANCE AMID CHANGING REGULATIONS

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Vehicle market trends

ADAS

- Global ADAS market is projected to reach €98B by 2030 at a CAGR of 14%
- 50% of vehicles on sale today offer SAE L2 automation
- Average cost of an ADAS bundle is €1784 (~5.4% of the total cost of the car)

ELECTRIFICATION

- EV car sales have increased by 35% YoY from 2022-2023
- EVs account for 18% of all cars sold in 2023
- 25% of new car registrations in the EU are EVs

REGULATIONS

Standards are evolving quickly as regulators rush to keep up with the trends

- Euro 7
- EU General Safety Regulation (GSR)
- UNECE DCAS
- AI Act
- NCAP

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Evolving standards from multiple regulatory bodies require flexibility in vehicle development

ELECTRIFICATION REQUIREMENTS

Regional EV quotas, ICE bans

ENVIRONMENTAL STANDARDS

Exhaust limits, particle emissions, reporting requirements

ONBOARD MONITORING

Vehicle-specific and population reporting

SAFETY SYSTEM IMPLEMENTATION AND REPORTING

Feature mandates, performance requirements, incident reporting

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Trends & evolving regulations present challenges for manufacturers

ADAS

- Safety in all conditions
- Software security and complexity
- Regional variations in roads and regulations

EVs

- Range prediction
- Battery health
- Charging infrastructure

REGULATIONS

- Short timeframe for development
- Stricter reporting requirements
- Non-compliance leads to brand damage, fines, lawsuits

Manufacturers must speed up development and validation processes to maintain compliance

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OEMs need a flexible platform with five key features that accelerate validation

EDGE ANALYTICS

Process as much data as possible at the edge

EVENT-BASED DATA COLLECTION

Collect and store relevant data in ways that simplify search

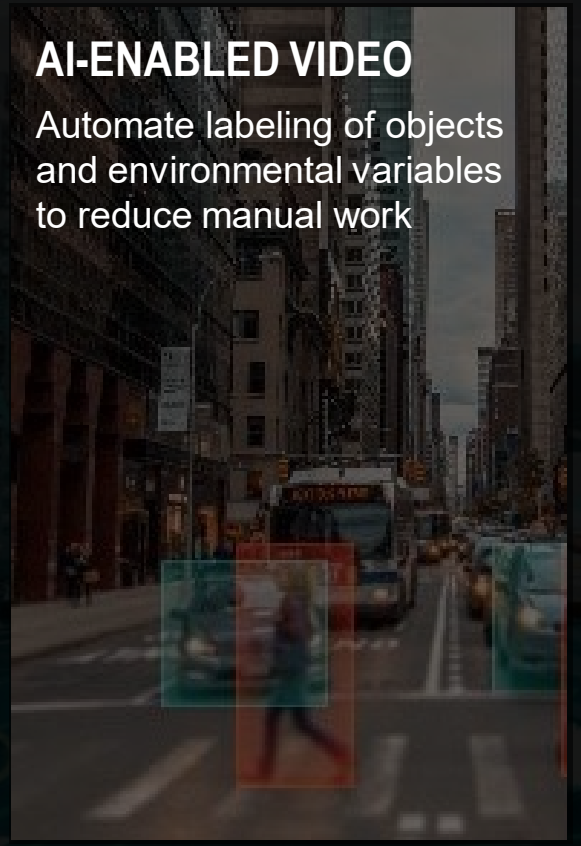
IMMEDIATE OTA UPDATES

Immediately change the data collection strategy to adapt to changing conditions



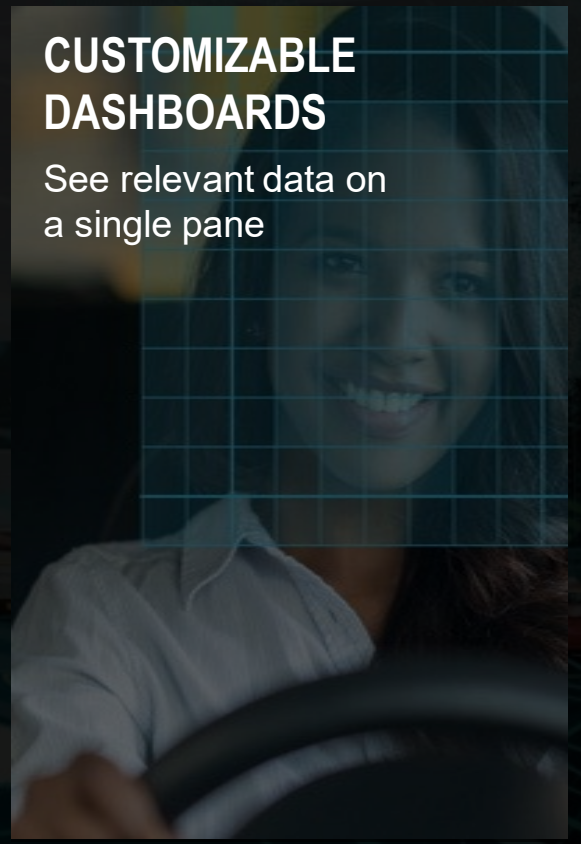
AI-ENABLED VIDEO

Automate labeling of objects and environmental variables to reduce manual work



CUSTOMIZABLE DASHBOARDS

See relevant data on a single pane



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Key feature 1:

Edge analytics

REDUCES LATENCY

Minimizes time to insights

ENABLES ONBOARD MONITORING

Supports challenger and champion models, streamlines validation of OBM systems

PROVIDES REAL-TIME FEEDBACK

Immediately alerts engineers about issues, speeding up troubleshooting

FUNCTIONS IN ALL LOCATIONS

Works in remote areas without cellular or Wi-Fi connections



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Key feature 2:

Event-based data collection

PREVENTS DATA OVERLOAD

Enables engineers to easily find relevant data

PROVIDES ALERTS

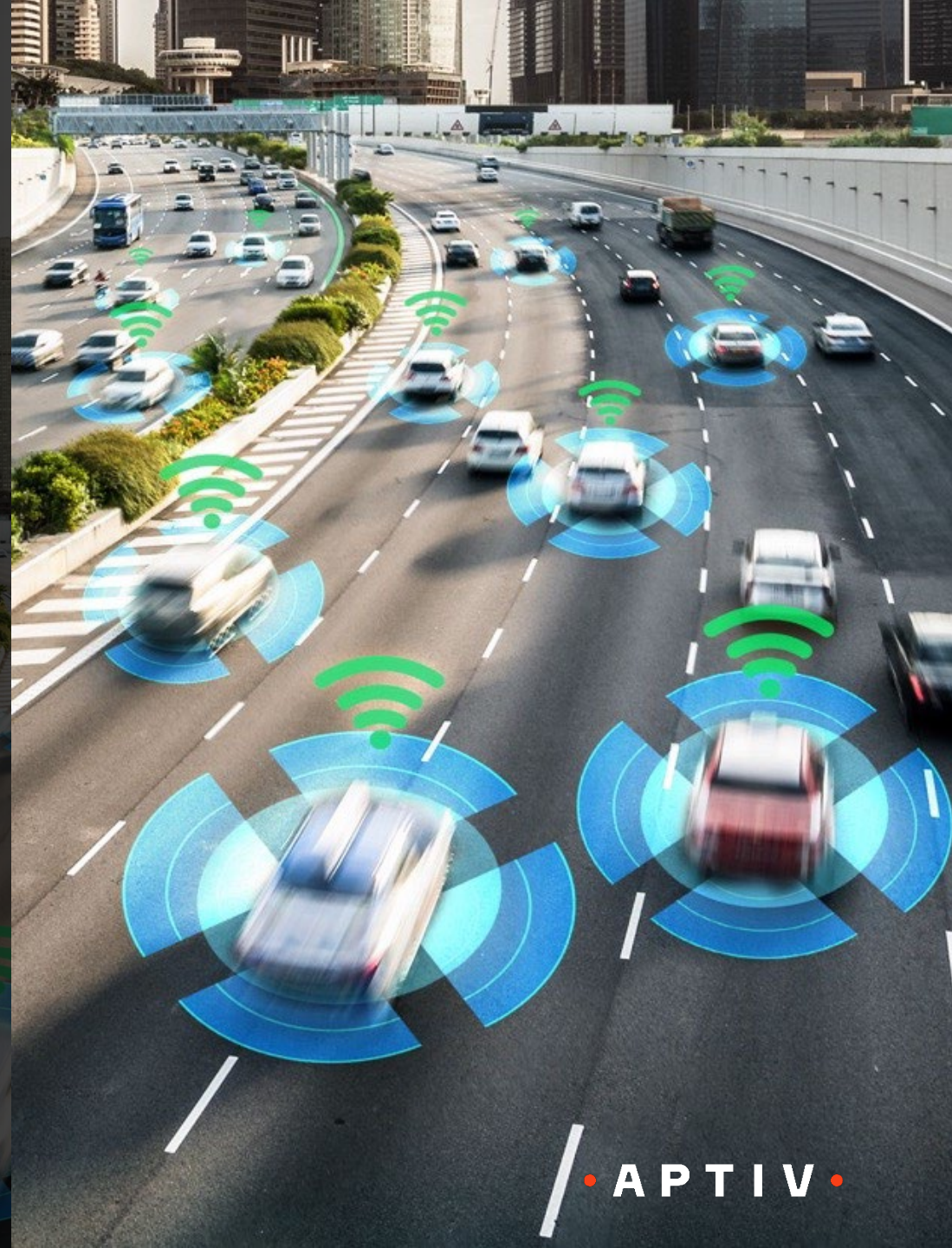
Immediately informs the team about events related to compliance

MINIMIZES COSTS

Save money by transmitting and storing only the relevant data

ALLOWS FLEXIBILITY

Adapts as compliance requirements change



Key feature 3:

Immediate OTA updates

ENABLES REMOTE MANAGEMENT

Allows changes without the cost and hassle of traveling to the vehicle

SPEEDS UP VALIDATION

Gives teams the ability to change their data collection if issues emerge

PROVIDES FLEXIBILITY

Facilitates compliance with evolving regulations



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Key feature 4:

AI-enabled video

STREAMLINES TROUBLESHOOTING

Speeds up validation of perception systems and other features required for compliance

REDUCES MANUAL WORK

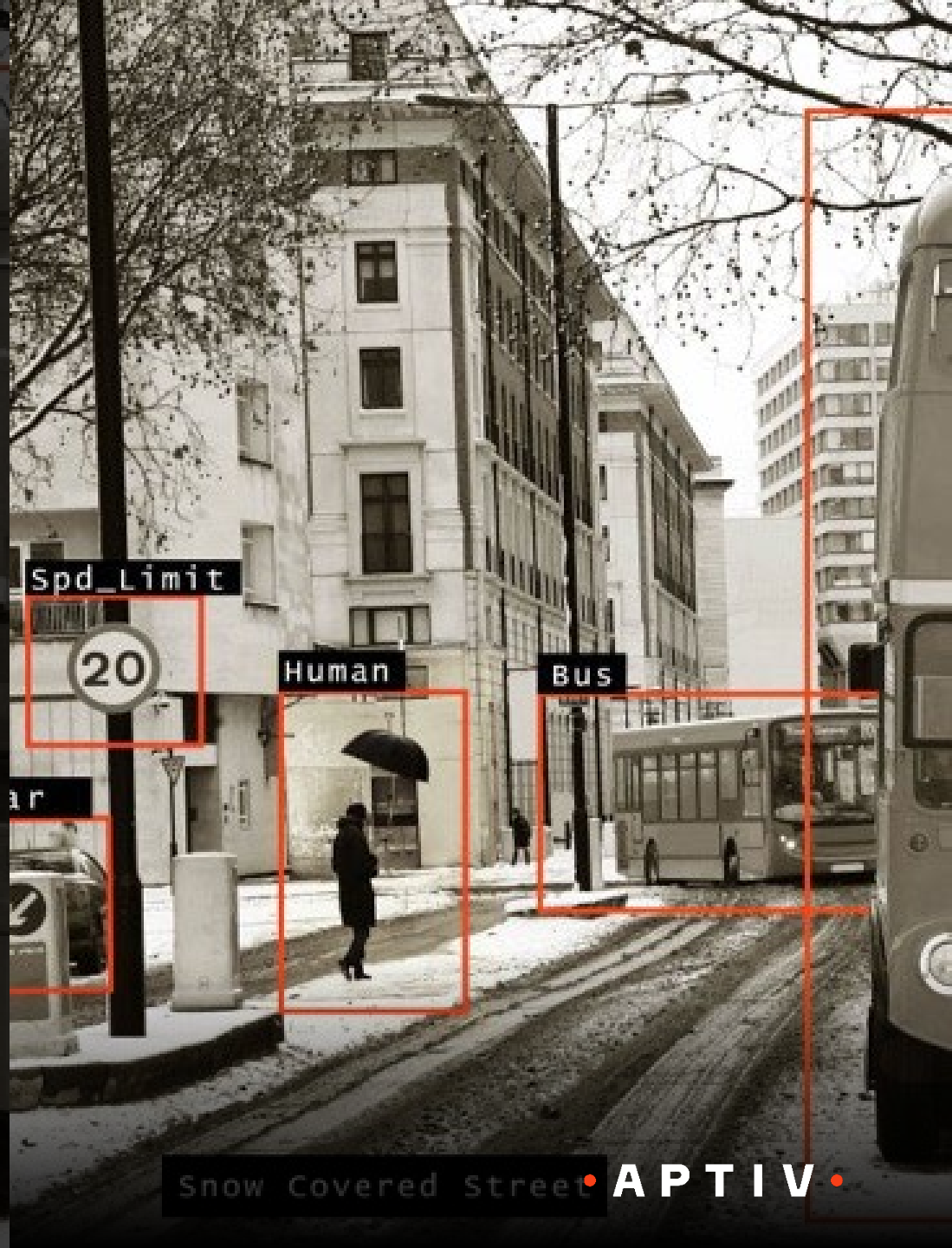
Eliminates the need for teams to manually label ground-monitoring video

BLURS SENSITIVE CONTENT

Conceals license plates and faces to comply with privacy regulations

PROVIDES CONSISTENCY

Ensures that all objects and environmental variables are labeled in the same way



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Customizable dashboards

Test Summary

Conditions

Features

Audio tags

PROVIDES A SINGLE-PANE OVERVIEW

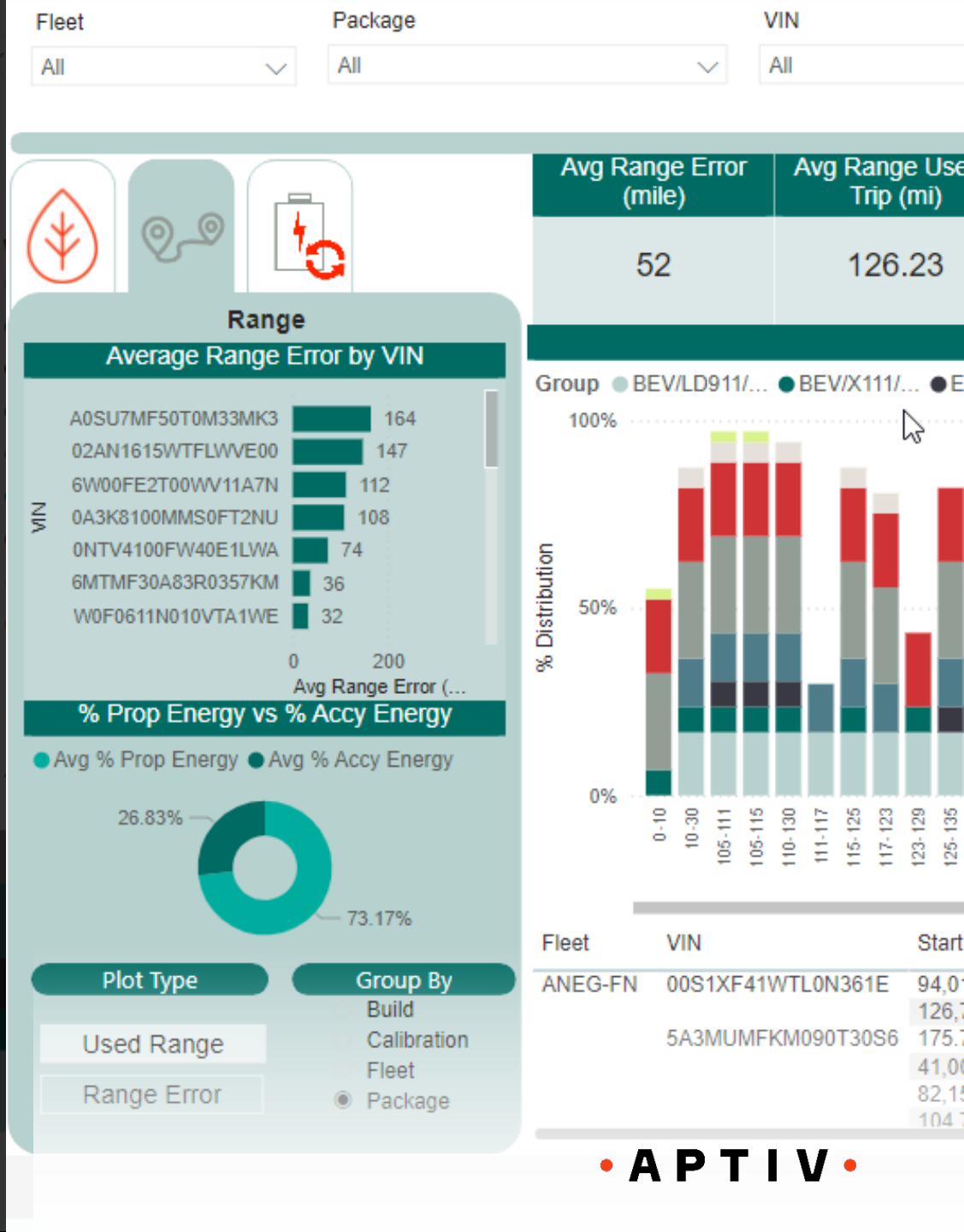
Allows you to see the big picture and drill down into details

SUPPORTS ROOT-CAUSE ANALYSIS

Identifies widespread issues and speeds up troubleshooting

ADAPTS TO CHANGING NEEDS

Allows teams to focus on KPIs that are useful for them and adapt as necessary



To view demo video, visit

https://files.aptivcs.com/ComplianceDemo.mp4

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