Peace of mind

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Evolution to A Mobility-Centered Society

DENSO will contribute to the evolution of mobility

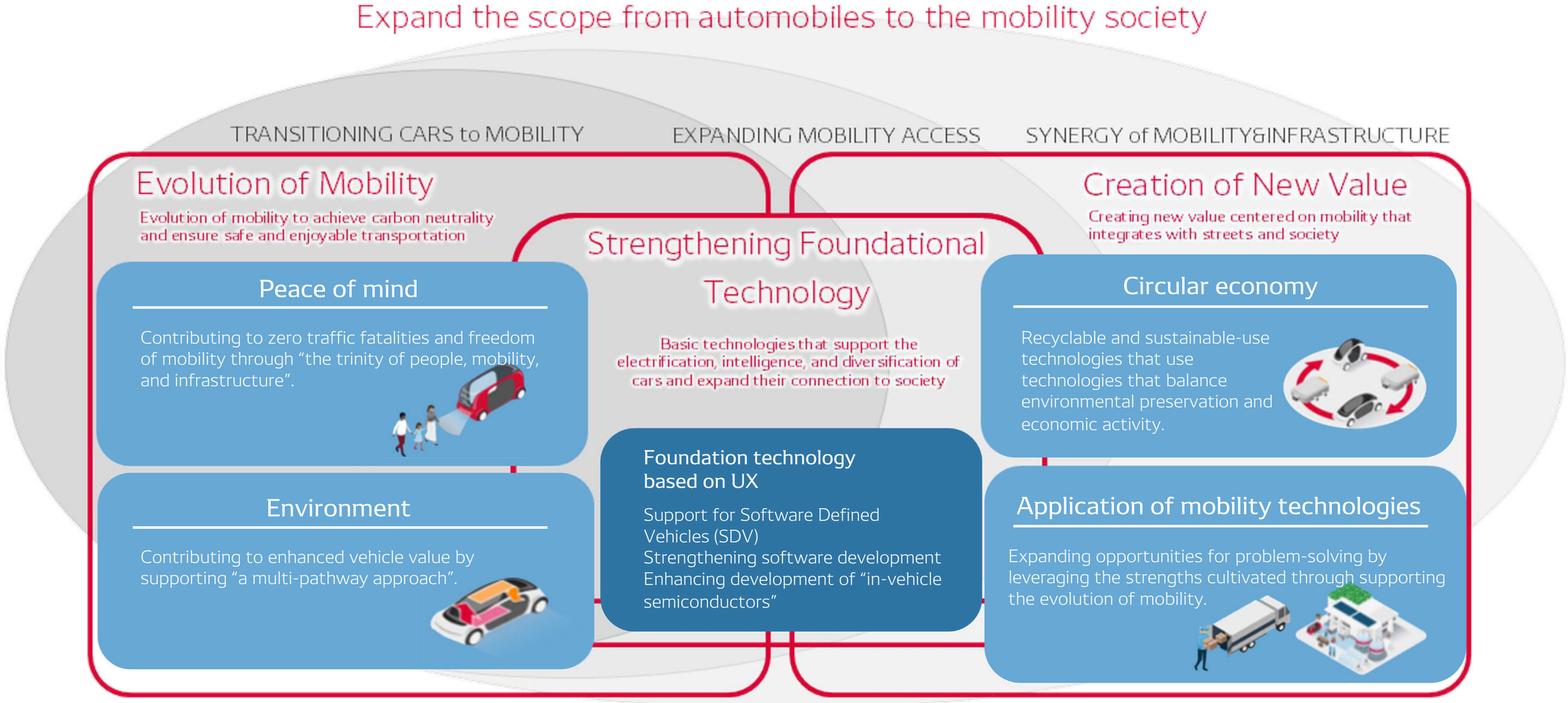
Highlights

- Continuing to create new value toward the realization of an earth-friendly society where everyone can feel safe and happy.
- Contributing to the evolution of mobility that realizes the peace of mind and enjoyment of mobility.

Configuration

Continuing to create new value toward the realization of an earth-friendly society where everyone can feel safe and happy

Maximize value in the areas of “environment” and “security”
Expand the scope from automobiles to the mobility society



Result

- DENSO is accelerating the realization of a ZERO-Accident Society through a tightly integrated approach that connects “People,” “Mobility,” and “Infrastructure.”

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DENSO's Zero Vision

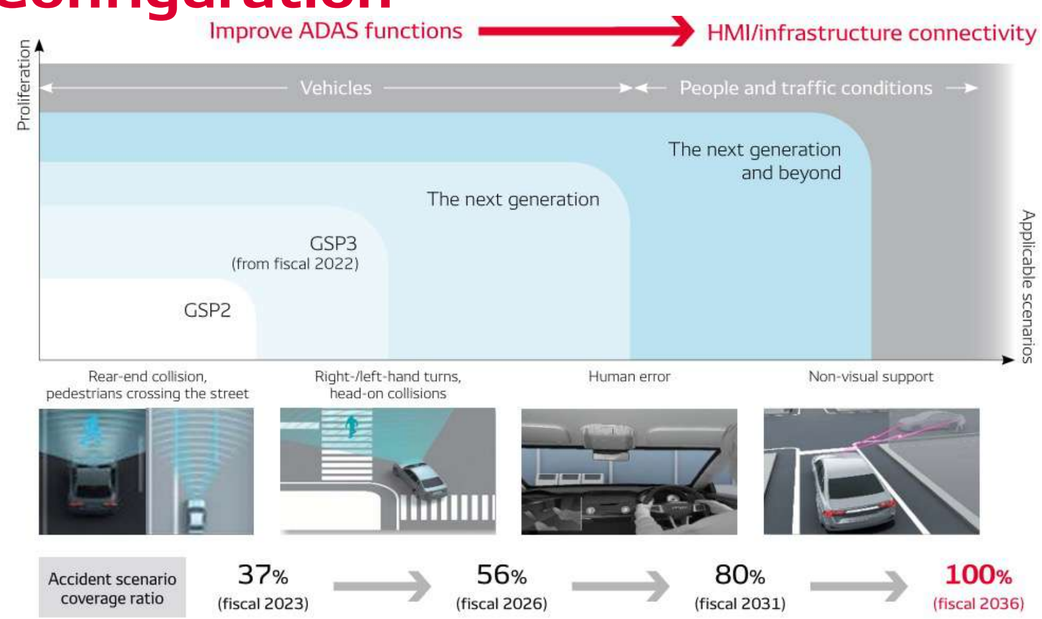
Time Is Of The Essence: Two Pronged Action

Booth Content

Highlights

•DENSO aims to be a central part of making transportation safe. DENSO is developing technology for automated driving (AD) and advanced driver assist systems (ADAS) to minimize and eventually eliminate crashes altogether.
•Though, DENSO understands that realizing this future may take time. Which is why we are taking steps, today, to improve emergency response. Roughly 2k deaths per year (~13%) might be prevented if response times were reduced by 7-10minutes.
•Saving time, saves lives on the path to achieving zero fatalities.

Configuration



- DENSO's is continuously improving our ADAS functionality to cover a greater percentage of total accident scenarios.
- DENSO hardware solutions (LiDAR, radar, camera) are capable of the high-performance sensing.
- DENSO is also rapidly building internal software development capability to update AD/ADAS systems.
- One example is our on-going improvement of human behavior prediction to warn drivers of potentially dangerous situations – with vehicles or pedestrians – before they occur.

- DENSO will offer intelligence that aids respondents in understanding:
  - precise location + collision severity
  - number of people involved
  - approach optimization (route + angle/positioning)
  - scene condition prediction
  - planned action for departing crash scene
  - en-route guidance on actions
- DENSO will blend vehicle + infrastructure data to improve coordination among responders (eg: ambulance, fire, police).
- Secondary crash prevention and overall transportation network utilization improvement.

Result

•DENSO is committed to reducing fatal collisions. We also recognize acting now can have a positive impact by offering accurate information to aid emergency response in saving critical time when it matters most.
•DENSO's solutions will reduce loss of life as we simultaneously move forward on the pathway to a zero collision future.

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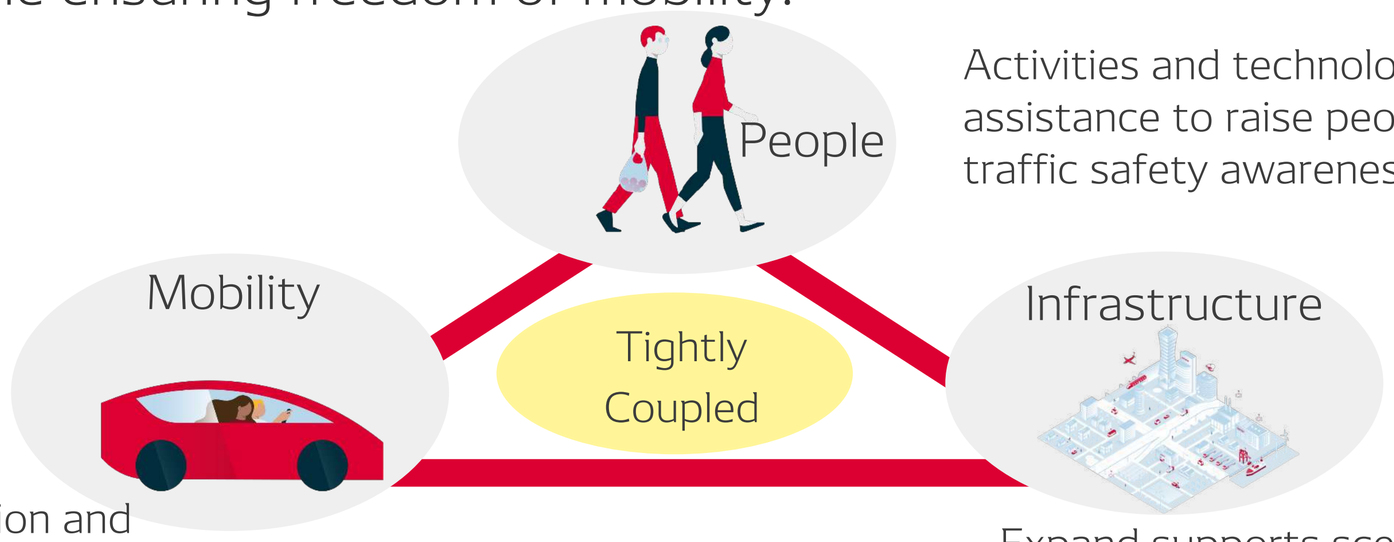
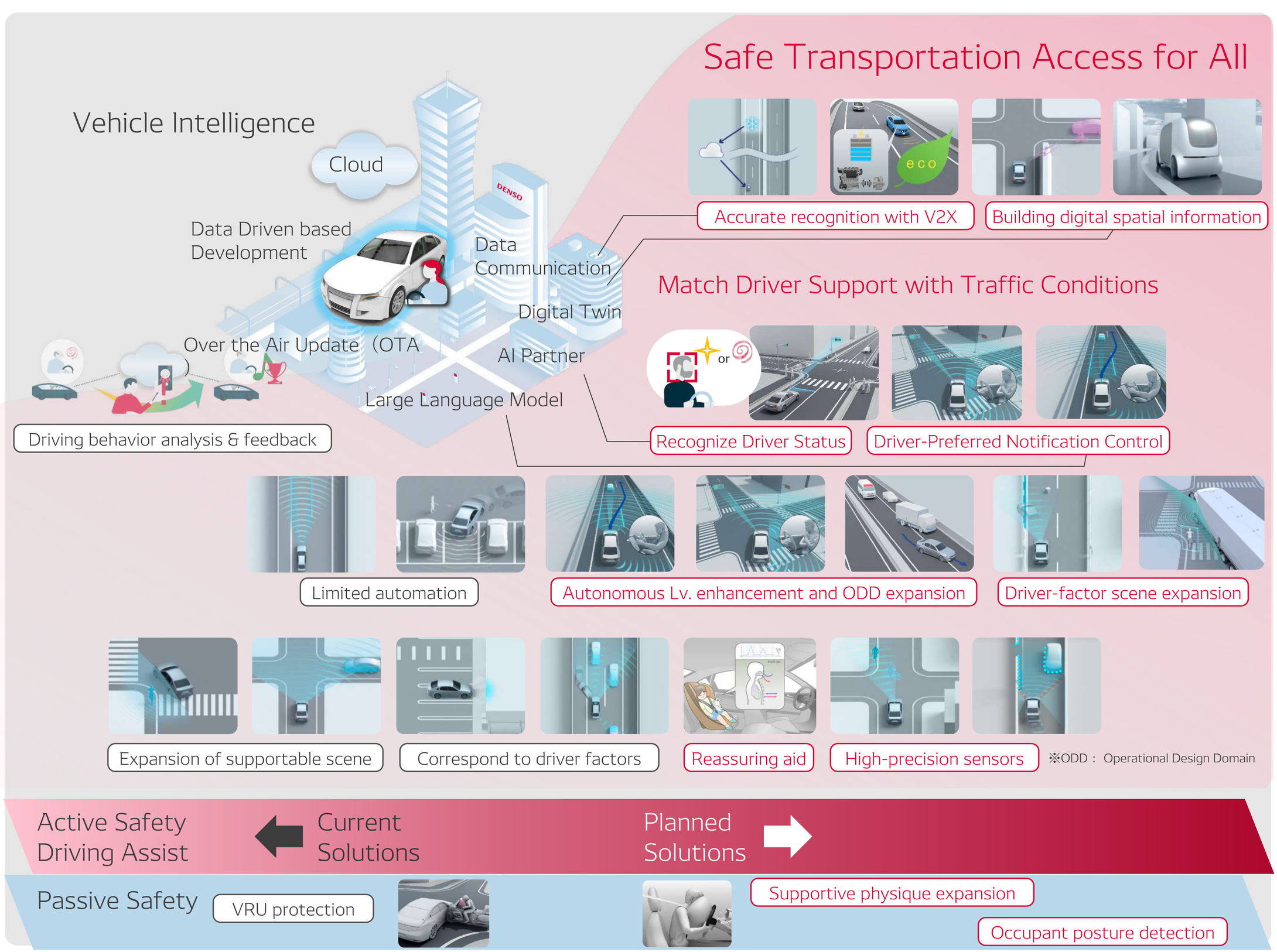
Towards Zero Traffic Accidents

Overview

- DENSO is committed to the aim of achieving zero traffic accidents. We seek answers to mobility challenges for People, Mobility, and Infrastructure. By collaborating with policymakers and industrial players, DENSO will tackle mobility challenges while ensuring freedom of mobility.



Approach



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Occupant Monitoring Solution

Highlights

-Multiple functions can be provided without extra hardware by leveraging the digital key module.

-Child presence detection can be achieved with a single module in 3rd row vehicles.

Technology

-By simply modifying the functionality via software, we can implement new solutions through installed hardware by sharing the digital key module.

-For example, child presence detection (*1 can be achieved with just a single module by using UWB (*2 Radar, which has high radio wave transmittance.

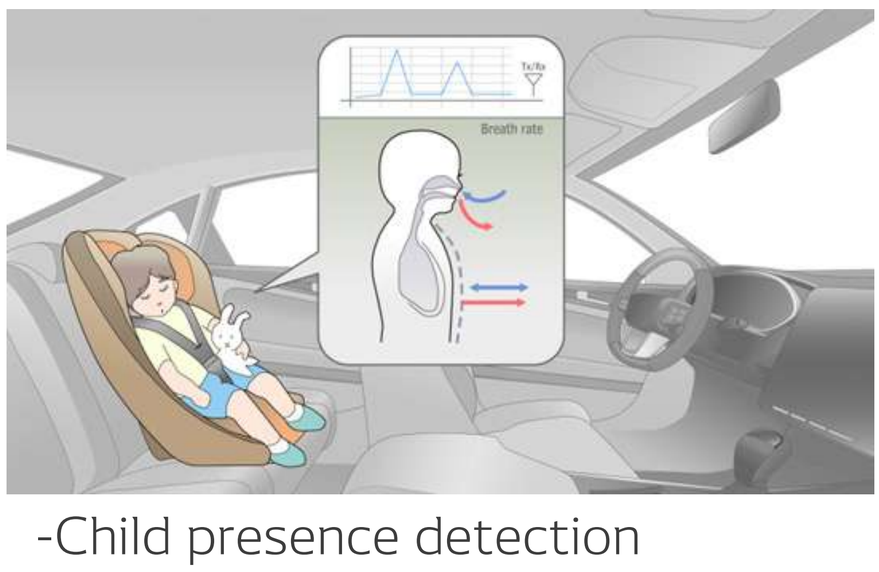
-Our robust algorithm development will ensure against false detections as well

(*1 Euro NCAP to add points for sensors that directly detect child presence in 2025)
(*2 UWB: Ultra Wide Band)

Feature

＜Offered function① : inside＞

Detects breathing and body movements from the body surface movement

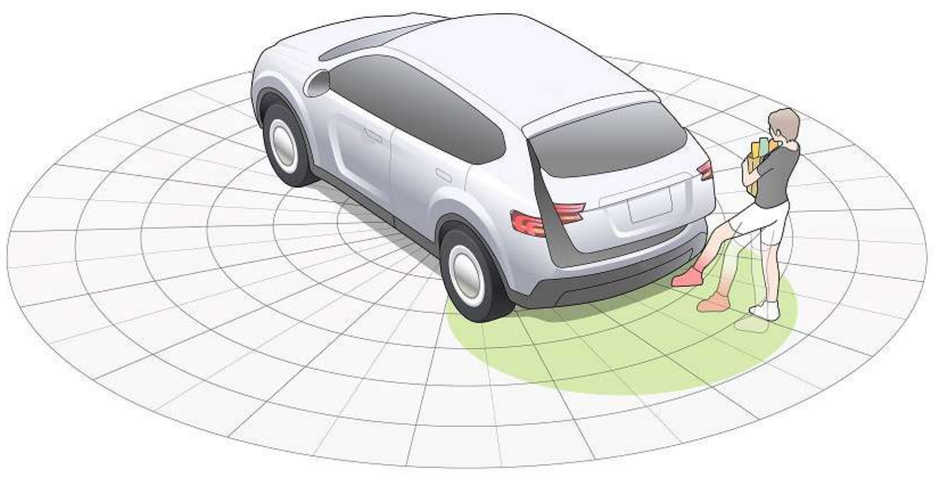


-Child presence detection

-Seat belt reminder

＜Offered function② : outside＞

Detects leg movements



-Kick sensor

Technical Challenges

-Remove external disturbances of vehicle
-Improve responsiveness
-Integrate with digital key

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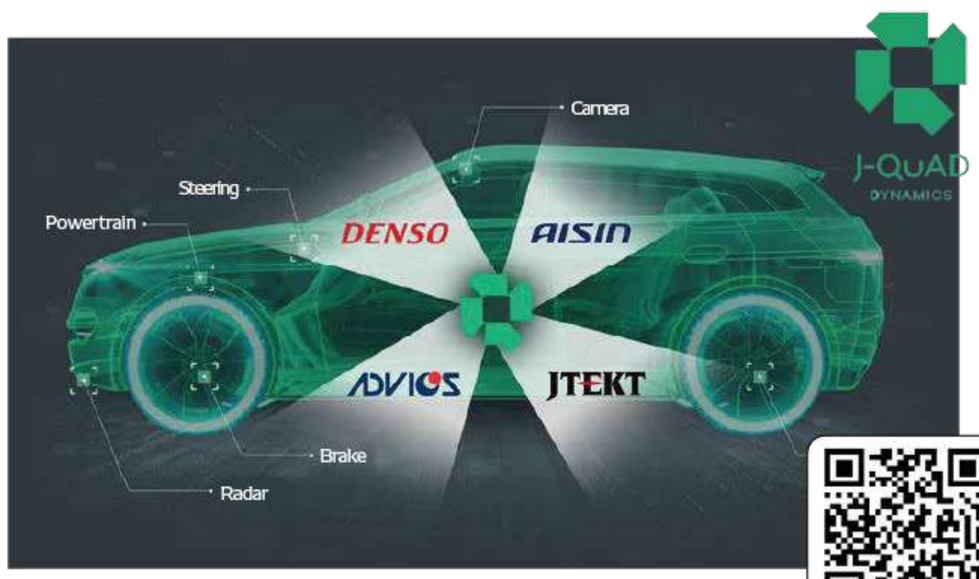
Next-Generation AI Model Development Environments

Overview

Utilizing the strengths of both J-QuAD and NTT DATA ARC, we will create development environments to support AD/ADAS, a field seeing increasing AI utilization.

- J-QuAD: Combining the strengths of four investing companies to create appealing apps
- NTT DATA ARC: Improving development efficiency and quality in the AI era with next-generation development environments



J-QuAD DYNAMICS Inc.
Development of integrated control software for autonomous driving, advanced driver assistance systems, automatic parking, and vehicle motion control

Link to company website

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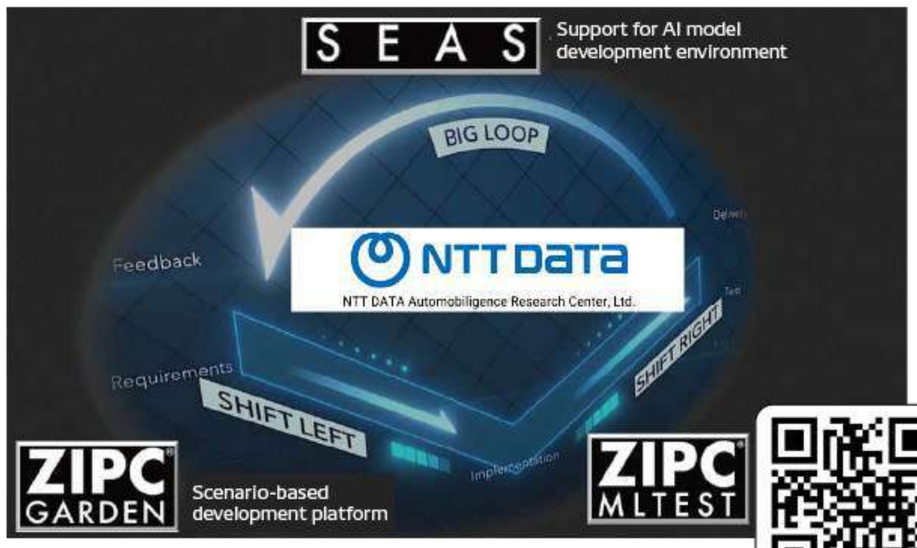
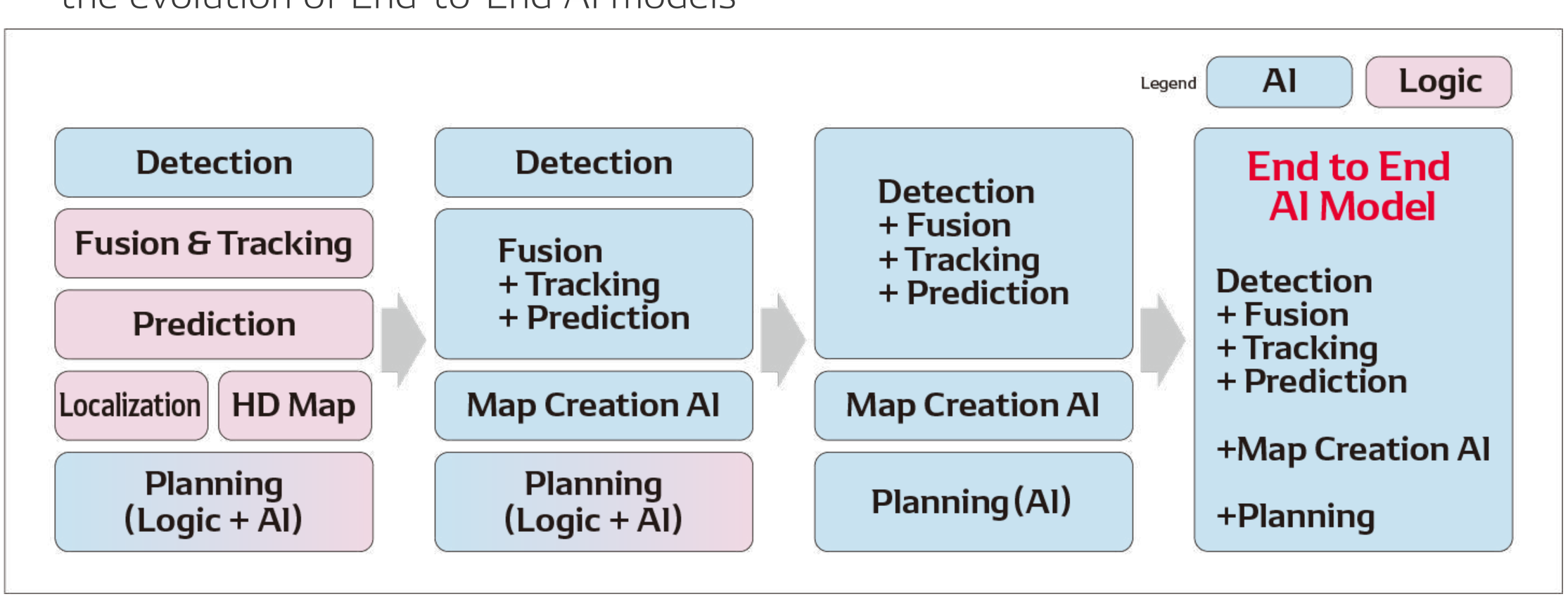


NTT DATA
Automobiligence Research Center,Ltd.
Model-Based Design (MBD), mathematical and AI solutions, and the development of tools for these technologies

Link to company website

Feature

- Next-generation AI model development environments capable of handling the evolution of End-to-End AI models



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Improving drivers' awareness by smartphones - yuriCargo

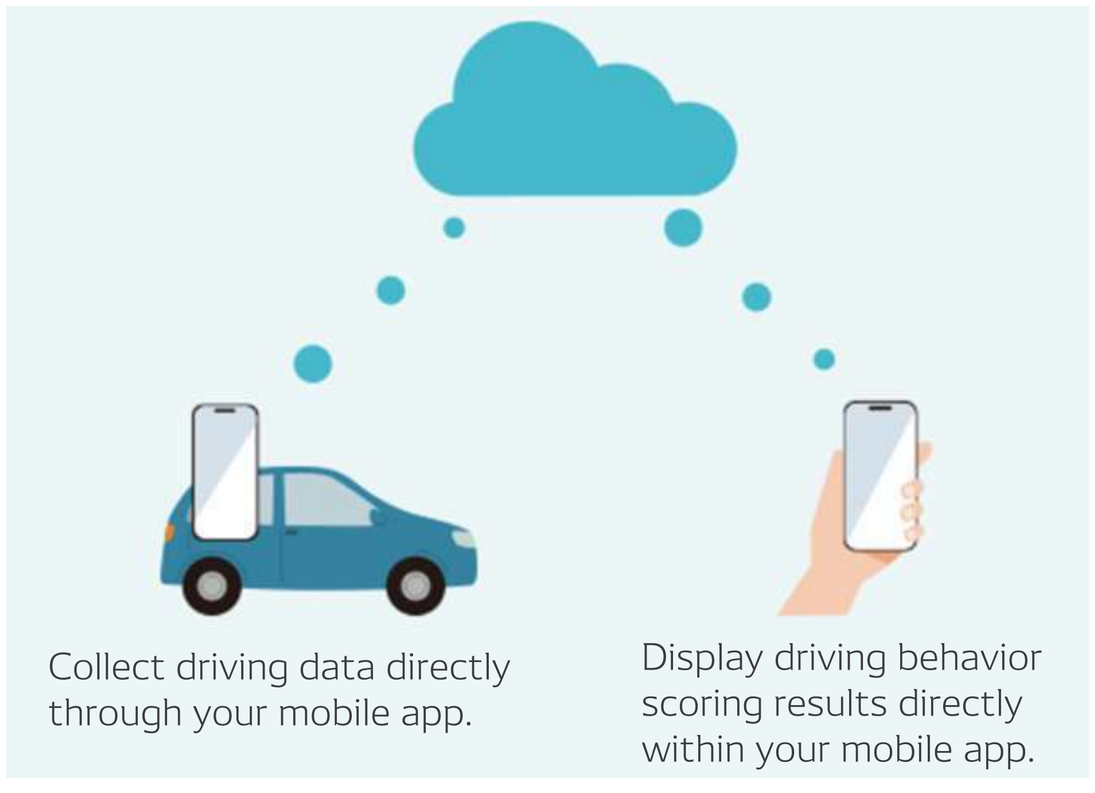
yuriCargo is a data-driven platform to change driving behavior.

Highlights

- Driving data collection and scoring are made possible using only the built-in sensors of smartphones, such as GPS and accelerometers — no additional hardware required.
- The user can just proceed with driving and the app automatically records driving data.

Feature

By integrating the yuriCargo SDK into your mobile app, you can seamlessly collect and utilize driving data to enhance user experience and safety.



Use cases

- Insurance companies can quickly launch Pay-How-You-Drive auto insurance by integrating the yuriCargo SDK into their own mobile apps.
- By promoting safer driving behavior, car leasing companies can reduce accident risks and effectively preserve the asset value of their leased vehicles.

Technical Challenges

- DENSO's system will also leverage AI to ensure that only the user's own driving data is identified and utilized.
- The app also optimizes smartphone battery consumption to ensure continual data collection.

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Dynamic Wireless Power Transfer System (DWPT)

Potential for Unlimited Range & Release from Static Charging

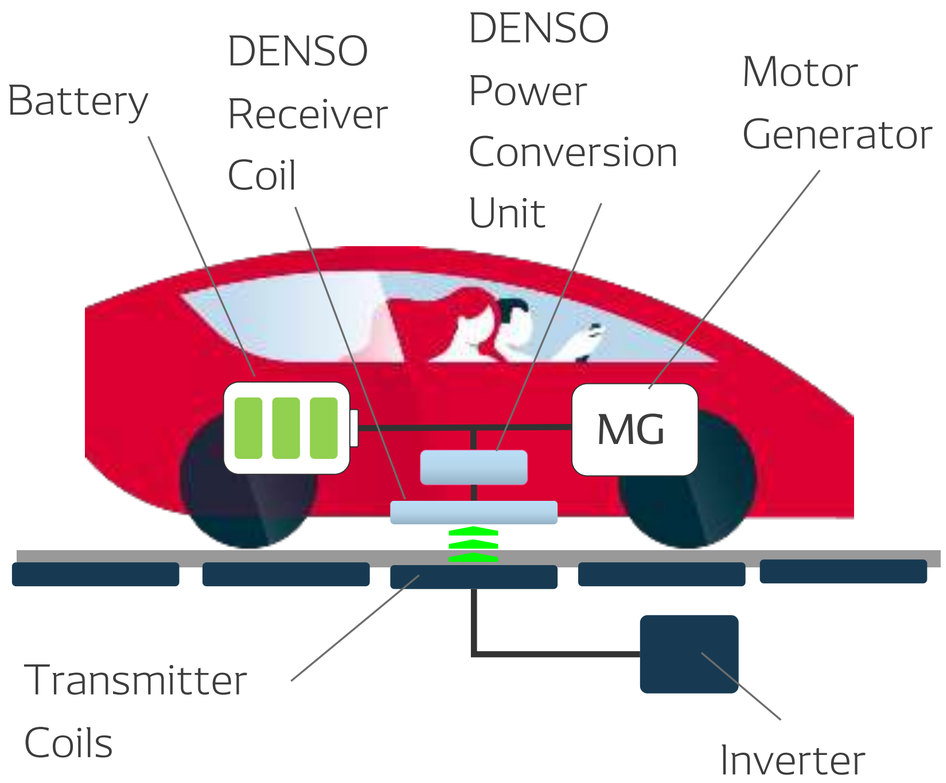
Overview

- DWPT uses transmitters beneath a road's surface to transfer power to a receiver in an equipped BEV while it travels on that road.
- DWPT can achieve an average power supply efficiency of up to 85% and an 80% reduction in battery capacity.
- DENSO has demonstrated that the full application of DWPT may facilitate achievement of unlimited range for a properly equipped BEV.
- By facilitating both greater EV adoption, and reduced battery size and materials usage, DWPT is one of the most effective means of achieving carbon neutrality.

Feature

DWPT System Overview

DENSO can supply technology and products for BEVs to achieve DWPT operation.

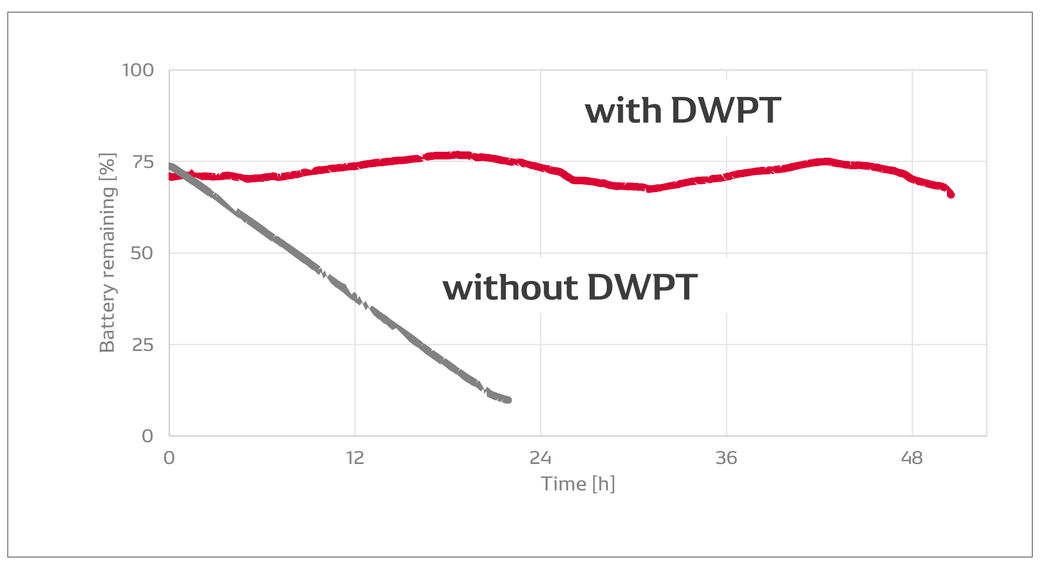


Comparison table of charging technologies

	Super-Fast Charging	Battery Swapping	DWPT
Stationary Charging Time	~15 minutes	~5 minutes	Practically 0
Power supply output	~350kW	-	20~70kW (per coil)
Power supply efficiency	70%	90%	85%
Battery capacity	1	1.4 (Including battery storage)	0.2
Production CO_2 Emissions	1	1.2	0.6
Running electricity cost	-	-	20% improvement (Vehicle weight reduction)
Infrastructure Scale of installation	Medium	Medium	Large

DENSO Test Track Demonstration

- DENSO constructed a test track, including 50m of road with transmitter coils.
- The DWPT equipped vehicle achieved 50 hours of continuous operation on the test track.
- This test demonstrated the full application of DWPT may facilitate achievement of unlimited range for a properly equipped BEV.



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LiDsEYE - DENSO LIDAR

High resolution and durability for all use cases

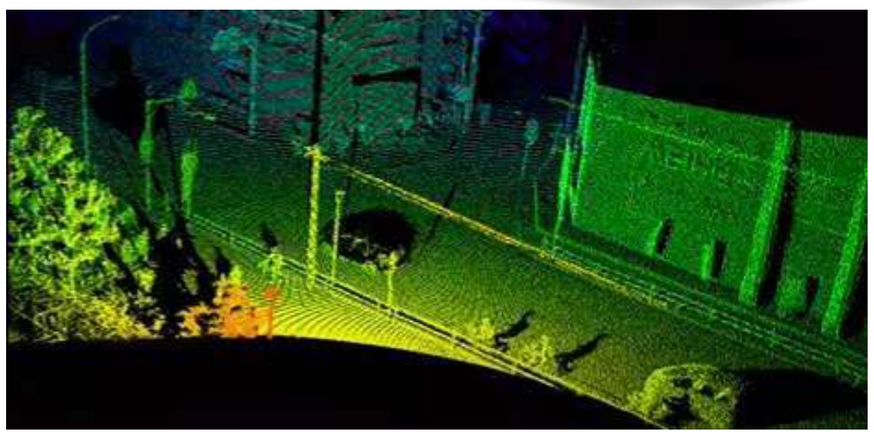
Highlights

- High uniform resolution across the entire field of view
- Unique environment flags to identify and filter for environment conditions such as rain, fog, exhaust gas, snow that typically make point cloud data difficult
- DENSO strong durability and reliability driven from our automotive experience

Configuration

- Line beam technology with almost 100% fill factor with optimized lens design to achieve premium optics for transmission of high fidelity light
- Newly developed detection IC for receiving light, translated by DENSO System on Chip
- Automotive grade robustness to survive harshest environments from infrastructure, construction and agriculture heavy duty equipment, and factories.

Robust design for heat dissipation and strength against outdoors

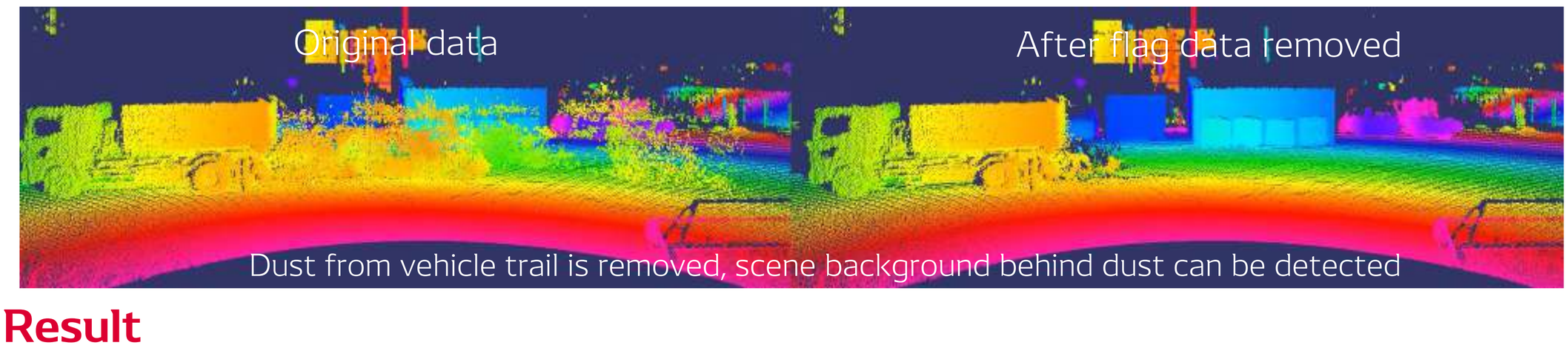


Specification for many use cases

Rich data enables strong perception for classification of vehicles, VRU's, trajectory prediction

Landmark ID for more difficult scenarios

Item	Specifications
Dimension	W169×H127×D96.7
Mass	1.68kg
Temperature	-30～70℃
Waterproof	IP67
Power	DC 9～32V, <30W
FOV	H120°×V30°
Resolution	H 0.15°×V 0.156°
Max Range	140m
Detection Distance	MIN; 61m @R10%、100klx MIN; 117m @R10%、 10klx
Frame Rate	10 fps
Comm	1000BASE-T1
Output	Distance, intensity, background light or flag info, diagnostics



Dust from vehicle trail is removed, scene background behind dust can be detected

Result

- Overseas applications using LiDsEYE have enabled VRU, zonal, and wrong way detection. Trajectory estimations may be possible.
- Unique filter systems enabled sight in environment or vehicle factors.
- Completion of durability testing with no failures and very little change in performance from new, over 43,800hrs including infrastructure and off highway heavy duty equipment settings.

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Local Area Monitoring Perimeter

Actionable Intelligence for First Responders

Highlights

- Real-time street-level awareness via edge-based spatiotemporal fusion
- Early alerts on injury severity and critical victims
- Aims to reduce time-to-treatment and improve survival outcomes in urban crashes

Configuration

LAMP Brings a Wide Area Situational Awareness to the Street Level

Local Area Monitoring Perimeter (LAMP)
LAMP is an edge-based system delivering street-level situational awareness through spatiotemporal fusion of multi-sensor data (e.g., EO cameras, LiDAR). Unlike cloud-only solutions, LAMP processes data locally for faster insights and lower latency. Its mission is to transform post-crash response by reducing the time from incident detection to lifesaving action.

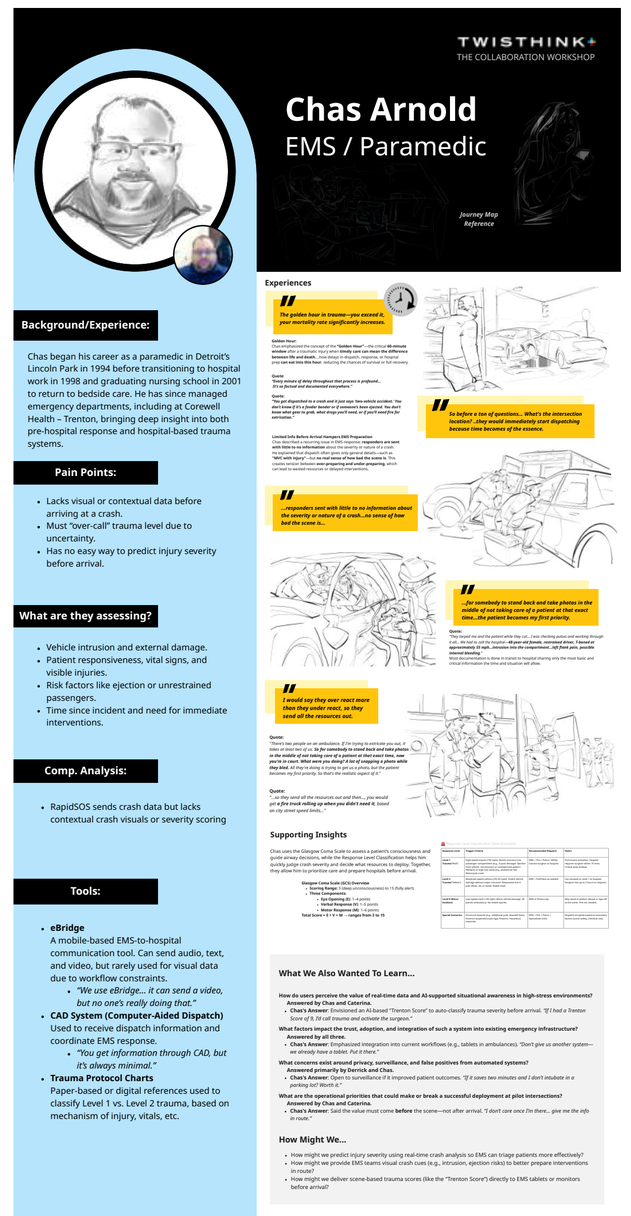
The Problem We Are Solving

Background Context

- 25% of U.S. traffic fatalities occur at intersections
- A 5-minute EMS delay increases fatality risk by 46%
- “The calls are never right.” — Officer Derrick Carroll
- ER teams often lack crash context or injury mechanism
- Current solutions are reactive, fragmented, and late

The Future We are Building

- Urban crashes demand faster, more precise awareness of injuries and hazards.
- Today’s systems lack real-time, on-scene intelligence for emergency response.
- LAMP seeks to close this gap and reduce time-to-treatment.

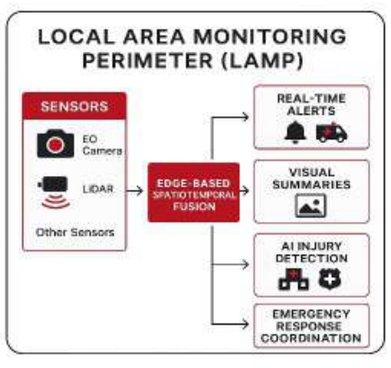


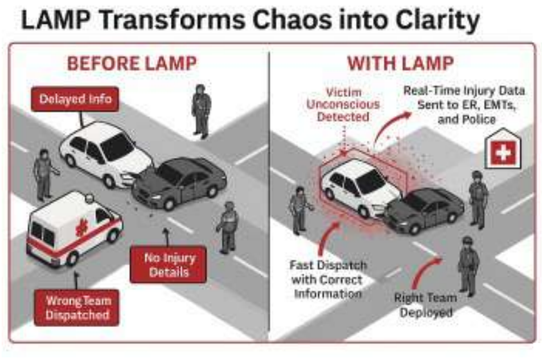
What LAMP Delivers

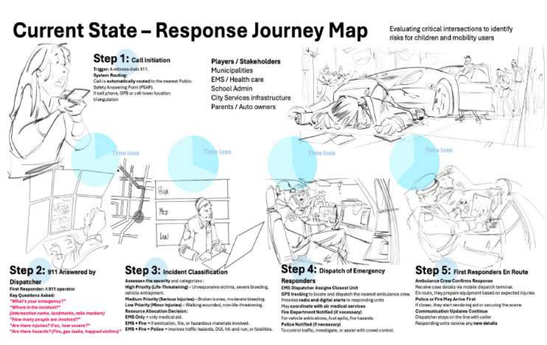
- Real-time street-level awareness through edge-based spatiotemporal fusion
- AI-driven detection of critical indicators (e.g. unconscious victims, bleeding, multiple casualties)
- Rapid delivery of incident snapshots and summaries before EMS dispatch
- Integration with existing emergency workflows to support — not replace — responders
- The goal: faster time-to-treatment and improved survival rates in urban crashes

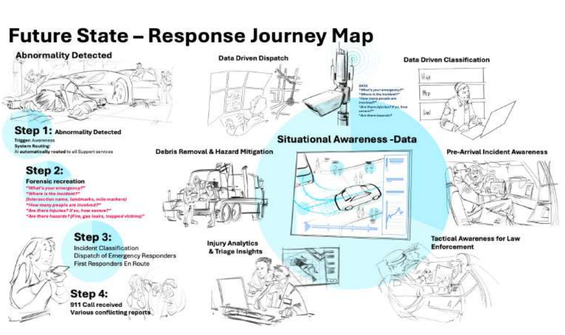
Voices from the Field

- “If I know there’s blood loss or loss of consciousness beforehand, I can prep the trauma room and blood products earlier.” — Caterina, ER Doctor
- “A reliable score would let me escalate to Level 1 trauma before arrival.” — Chas, EMS Coordinator/ER Nurse
- “If I could see what really happened, I’d send the right response team every time.” — Derrick, Police Lieutenant









Result

- Developing edge-based spatiotemporal fusion for urban awareness
- Training AI to detect critical injuries and scene severity
- Targeting faster response times and better crash outcomes

Peace of mind

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Federated Learning

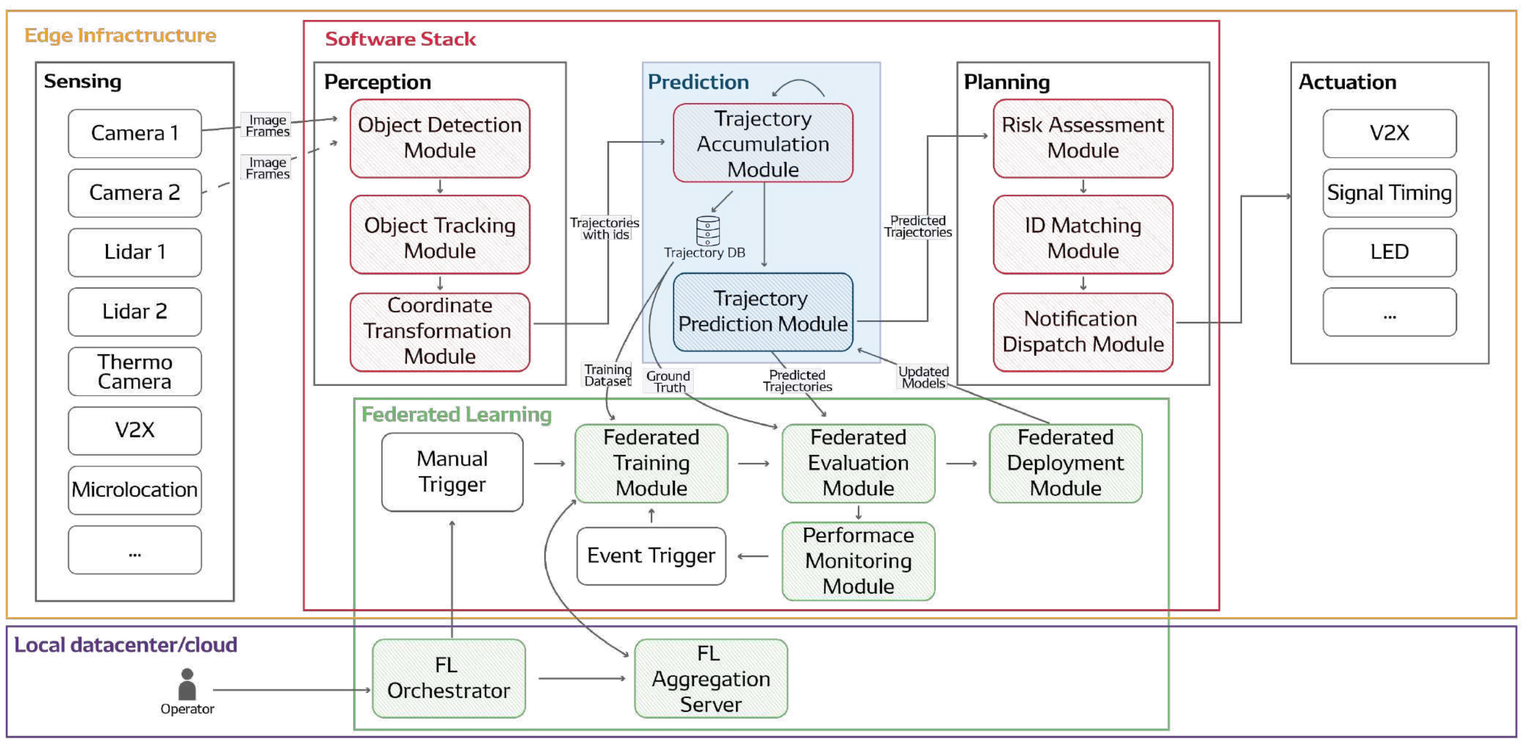
For Protecting Vulnerable Road Users

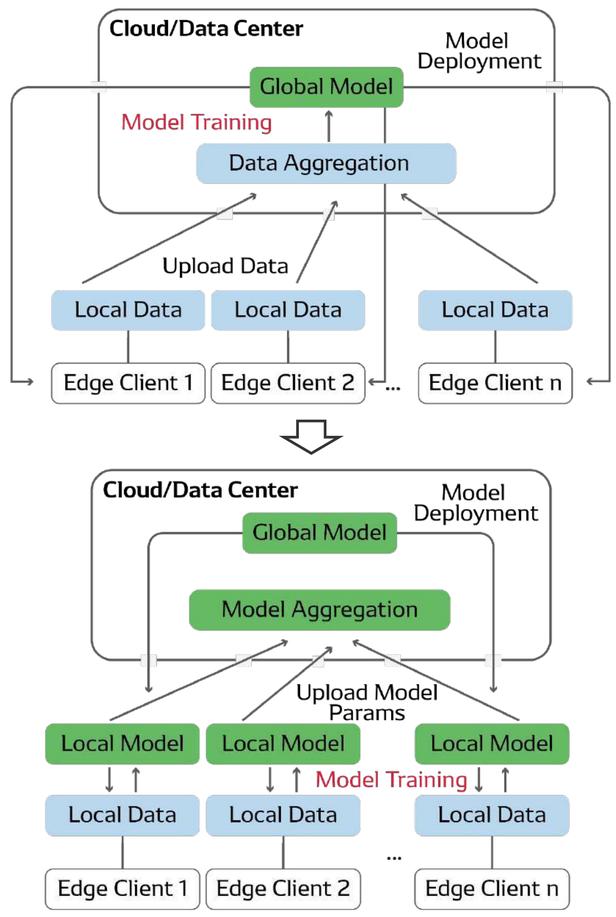
THE UNIVERSITY OF TENNESSEE CHATTANOOGA

Highlights

- We partnered with the University of Tennessee at Chattanooga to create a perception-prediction-planning system for roadside infrastructure. Our system uses personalized federated learning (FL) at its heart to deliver better performance, improved privacy, and lower costs.

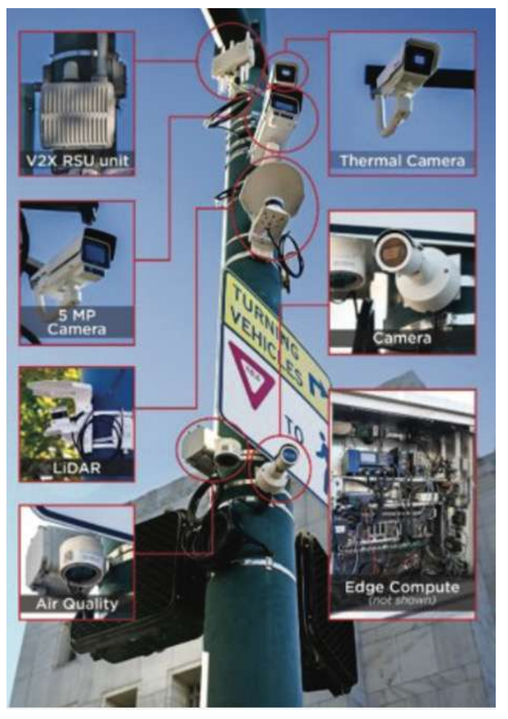
System Architecture





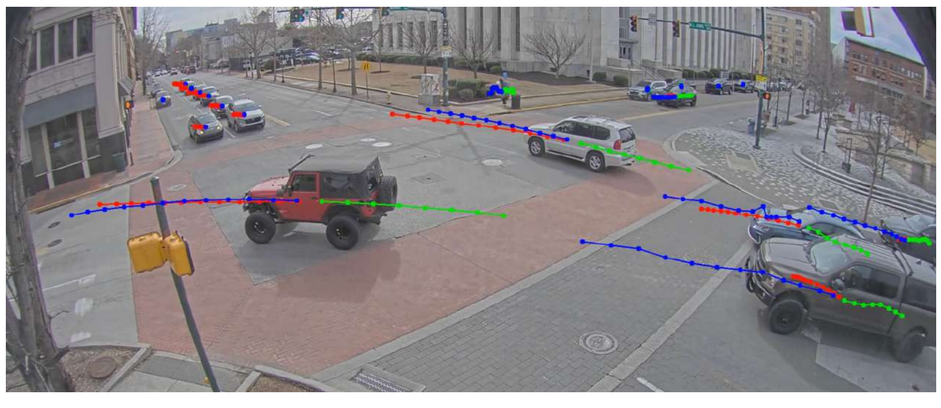
Testbed

- With its launch in Chattanooga, Tennessee, the Smart City Corridor introduced a powerful network of sensors, computing resources, and wireless technologies. It has since become a hub for cutting-edge Smart City research.



Result

- We evaluated our personalized models using real-world traffic data from four intersections along the Smart City Corridor, showing about a 10% improvement over centralized methods.
- We are developing advanced risk assessment methods to quantify potential collision threats and deliver early warnings to vulnerable road users (VRUs) and connected vehicles through DENSO Roadside Units (RSUs).



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MobiQ RSU and OBU V2X Solutions

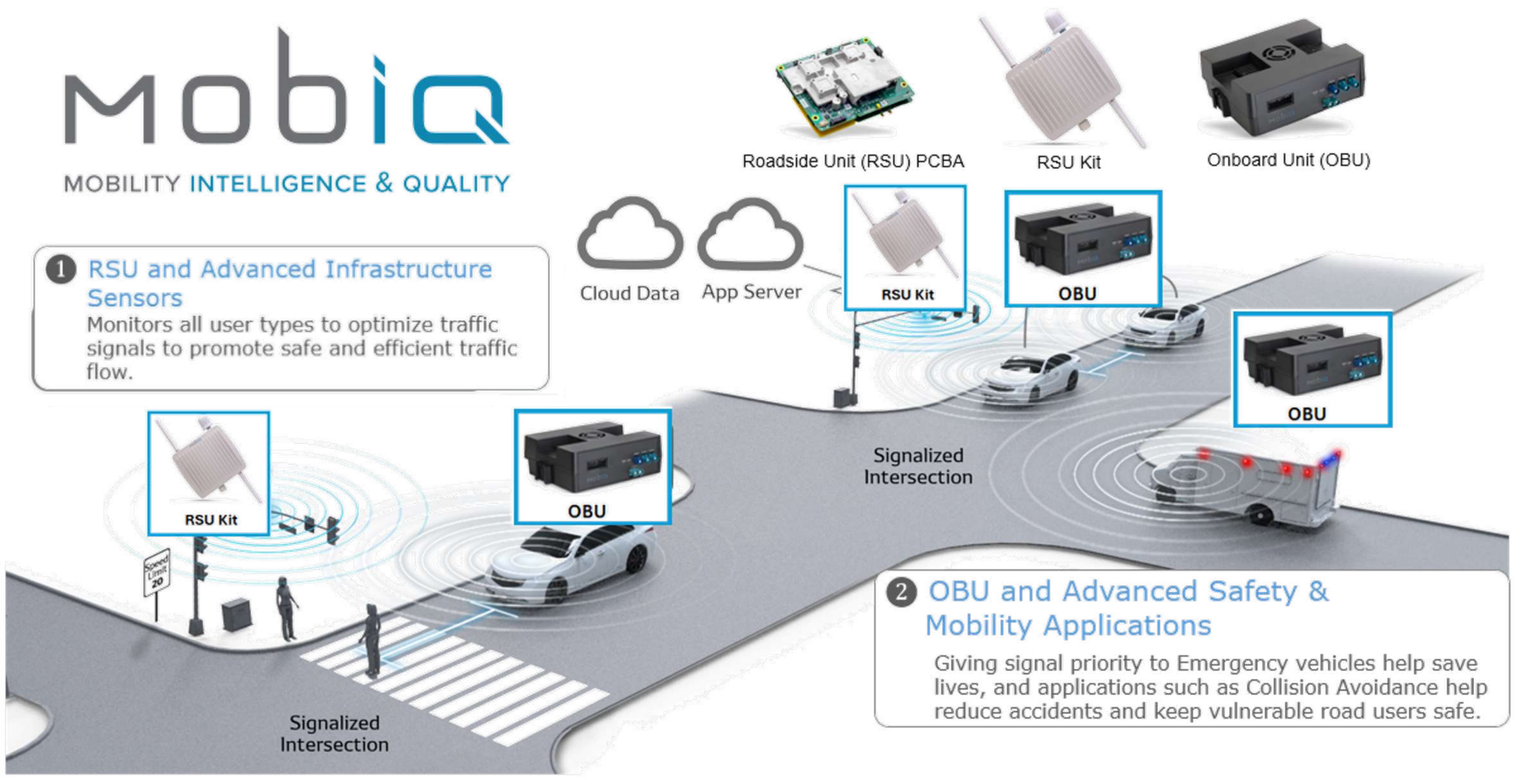
Mobility, Intelligence and Quality

Highlights

- MobiQ RSU and OBU platforms are developed based on C-V2X technologies.
- MobiQ leverage over 75 years of experience in the automotive market with a proven track record of strong customer support.
- MobiQ OBU integrates into the vehicle for safety and efficient mobility vehicle while RSU integrates into traffic signal controller, dynamic signage and other traffic infrastructure.
- MobiQ RSU and OBU supports priority applications, traveler information messages and other vehicle-to-vehicle and vehicle-to-infrastructure applications.

MobiQ RSU and OBU

MobiQ's Roadside Unit (RSU) System integrates with traffic signal controllers and government networks to enable communication with vehicles via C-V2X. It detects vulnerable road users using cameras and radars at intersections and delivers real-time alerts to drivers through dynamic roadside signs and heads-up displays.



The MobiQ Onboard Unit supports advanced vehicle safety and mobility by connecting with Vehicle-to-Everything systems, Roadside Units (RSUs), and smart city infrastructure. Built on the Wireless Safety Unit's success, it offers a powerful development platform combining short- and long-range automotive communication. It enables vehicles, RSUs, and infrastructure to exchange critical data for safer and more efficient road use.

Result

- Improved Road Safety: V2X enables vehicles and infrastructure to communicate, reducing collisions and improving driver awareness.
- Fuel Efficiency: V2X reduces fuel use by optimizing routes and minimizing idle time at signals.
- Reduced Traffic Congestion: V2X improves traffic flow through real-time data sharing.

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Keyless Access Solution

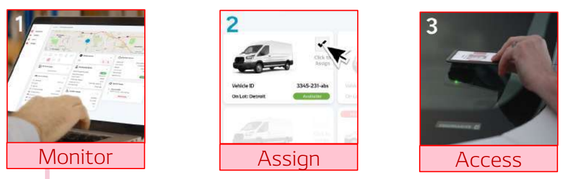
Efficient Fleet Operations And Secure Access

Highlights

The Keyless Access Solution (KAS) redefines fleet access with cloud-powered, keyless control—no keys, no hassle. Badge and phone-based entry streamline operations, boost security, and deliver a seamless user experience, driving the future of fleet management.

Configuration

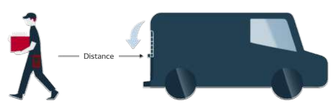
Today- Active Access



- Fleet User & Pool Car Management
- ID-Badge and Phone-based Keyless Access
- Role-based access control - Service technician
- Telematics (vehicle status & location)

Next- Passive Access

- Mobile Device Native Secure and Reliable Access.
- Passive Vehicle Access and Operation by DENSO micro-location
- Aftermarket Option or Integrate with Car Marker Digital Key System

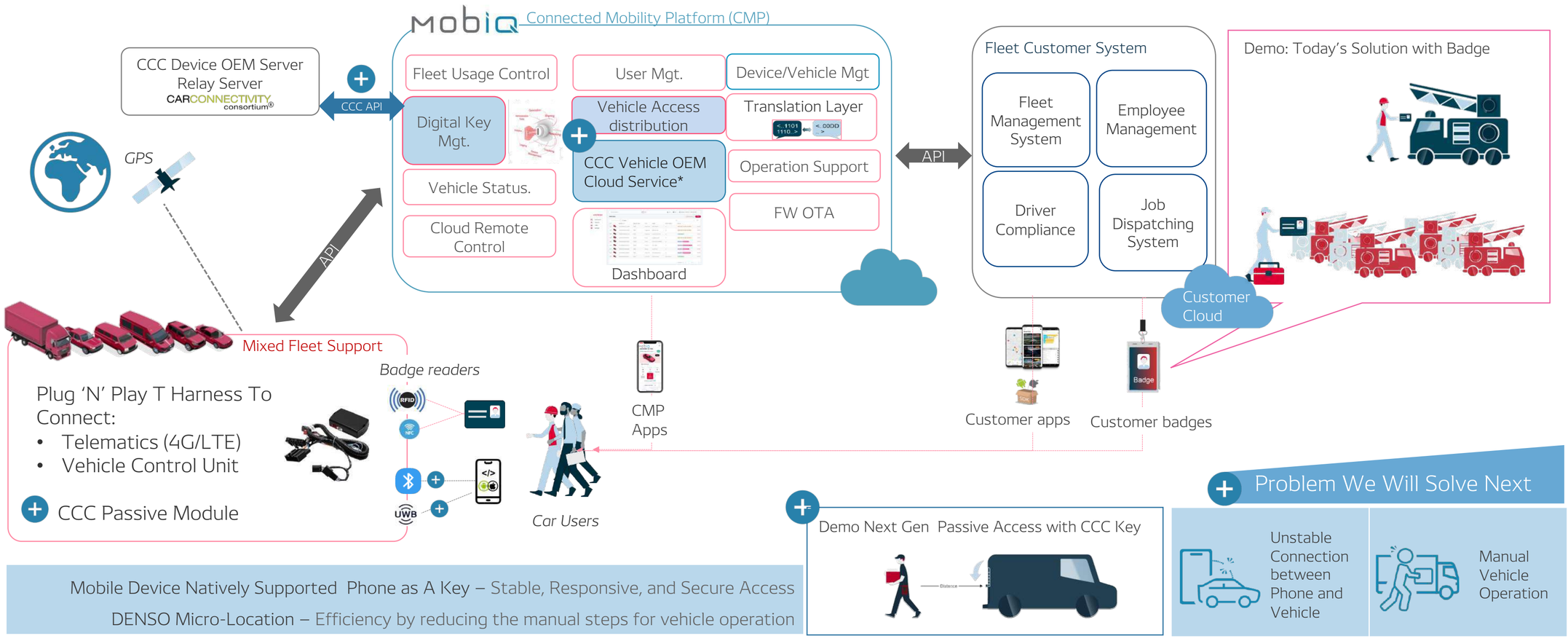


Future- Pursuit of Efficiency

- Automated Access Permission Control by leveraging existing systems and processes.
- Capable of on-board other access methods

Problem We Solve Now

Lost or Misplaced Keys	Time Consuming Key Distribution	High Operational Cost	Vehicle Status Limits Job Readiness	Limited Access Control	Unauthorized Access	Mismatched Vehicle ≠ Service Job	No Broad Vehicle Coverage



Problem We Will Solve Next

Unstable Connection between Phone and Vehicle	Manual Vehicle Operation

Mobile Device Natively Supported Phone as A Key – Stable, Responsive, and Secure Access

DENSO Micro-Location – Efficiency by reducing the manual steps for vehicle operation

DENSO MobiQ – Bring Reliable and Efficient Access to Fleet

75+ Years: Quality Automotive Parts

40+ Years: Vehicle Access

12+ Years: Passive Entry Passive Start

5+ Years: Phone As A Key