

# ***DENSO***

Crafting the Core

## Commitment to “Peace of Mind”

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DENSO supports the Sustainable Development Goals (SDGs).



# DENSO's Commitment to "Peace of Mind"

- ① ZERO Traffic Accidents    ② Comfortable space    ③ Support for workers

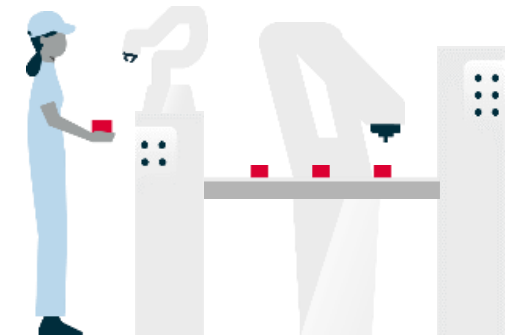
Eliminating traffic accidents and realizing freedom of mobility for all



Creating peaceful, comfortable spaces



Establishing a society where people are supported and their potential is nurtured

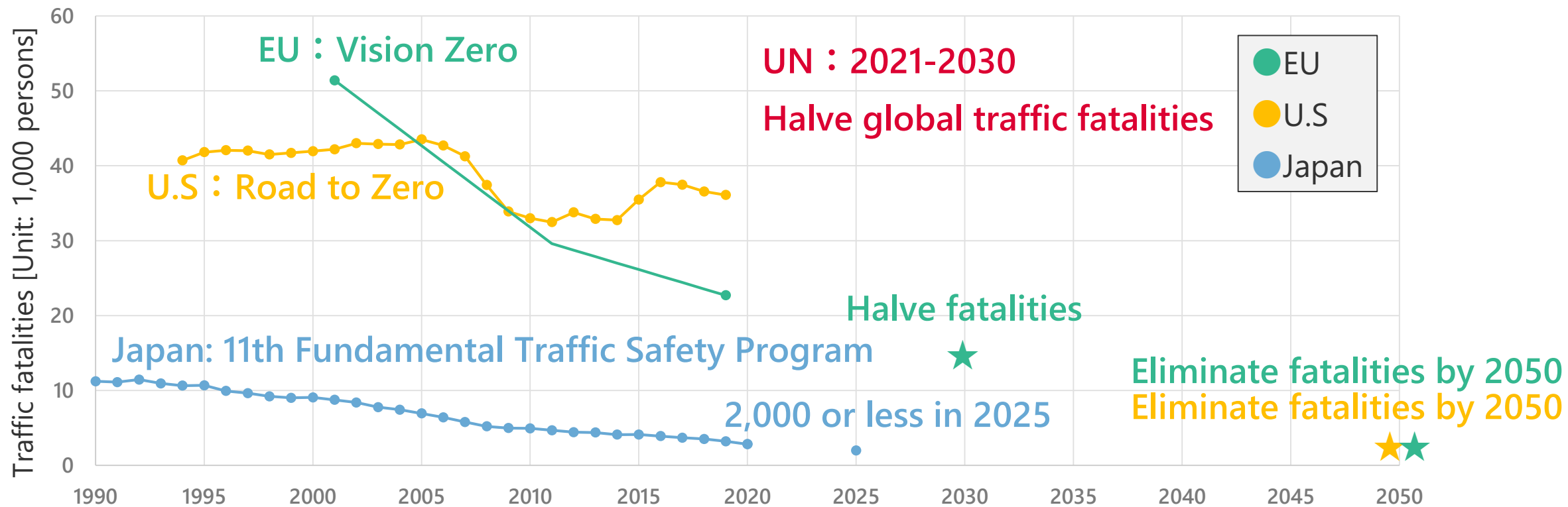


# 1

## ZERO Traffic Accidents

Eliminating traffic accidents and realizing freedom of mobility for all

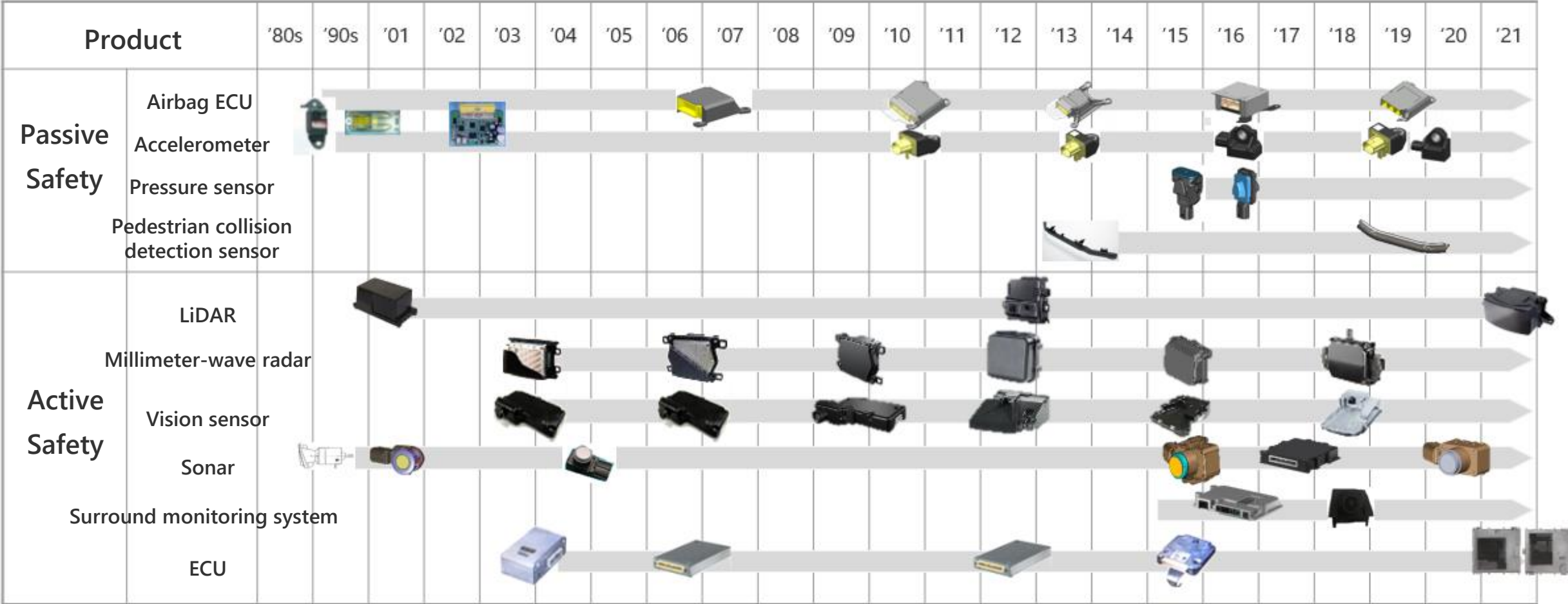
# Social background and challenges



Source: NHTSA, TRAFFIC SAFETY FACTS,  
the RAND Corporation, THE ROAD TO ZERO: A Vision for Achieving Zero Roadway Deaths by 2050  
European Commission, EU road safety policy framework 2021-2030: Next steps towards 'Vision Zero'  
United Nations, Resolution adopted by the General Assembly on 31 August 2020  
Cabinet Office, 11th Fundamental Traffic Safety Program

Reducing traffic accidents is a global issue.

# DENSO's Vision



**DENSO started to offer passive and active safety products in the 1980s to contribute to reducing traffic accidents around the world.**

# DENSO's Vision

Spread safety products with both "depth" and "width" with the aim of "eliminating traffic accidents", the ultimate goal

## Depth



Further evolution of ADAS



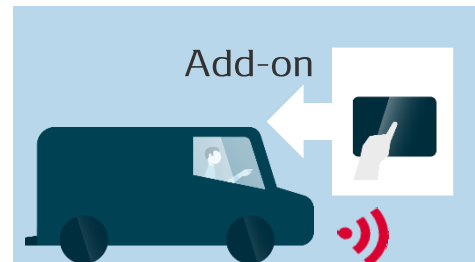
Hazard prediction by applying AI  
All-around sensing

Introduce the products to many more advanced mobility vehicles

## Width



Provide attractive and affordable products

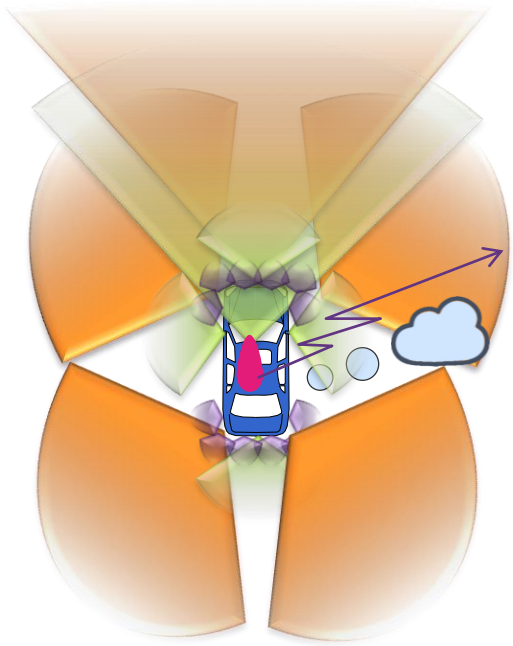



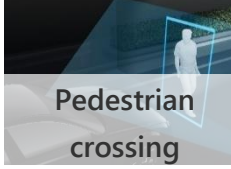







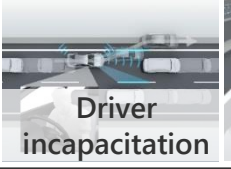


Expand the lineup of retrofittable products

Spread the products to as many vehicles as possible

# Solutions Offered by DENSO

## Depth



Main Products	2016~	~2030
Vision Sensors Millimeter-wave radar (Front and Corner)	 	  
Sonar Back Camera Millimeter-wave radar (Rear corner)		
Millimeter-wave radar (Rear corner)	  	
Driver Status Monitor	 	
Map V2X		

※Sensors are just images

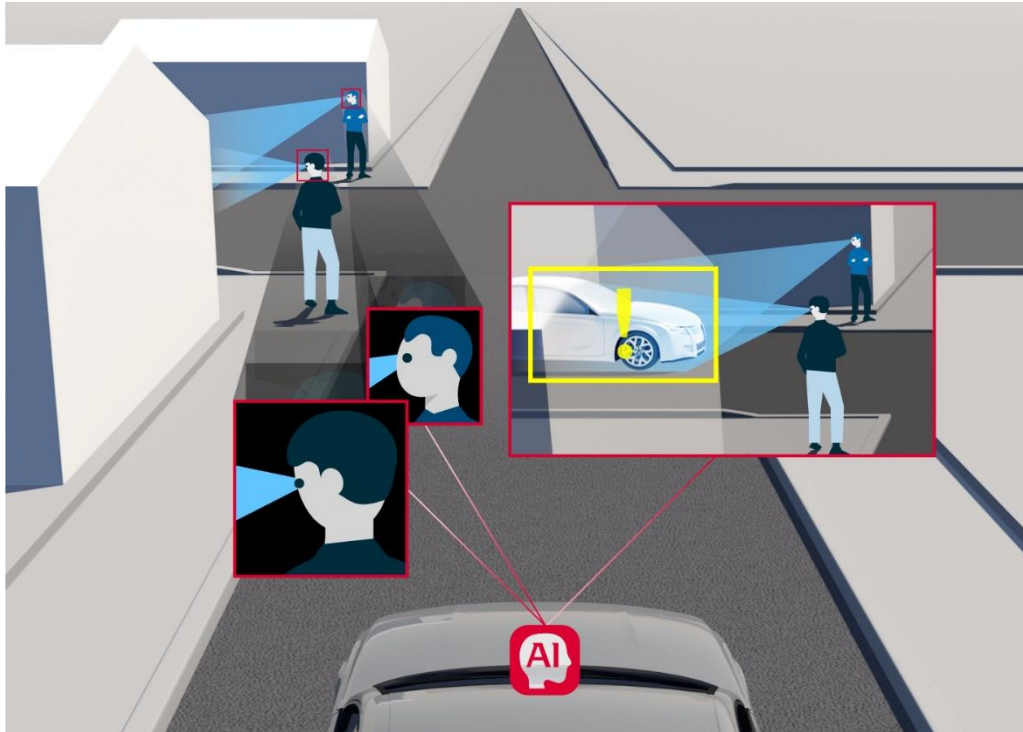
- Camera
- Millimeter-wave radar
- Sonar
- ⚡ V2X
- ☁ Map
- Drive Status Monitor

Cope with many more accident situations based on surround monitoring, coordination with infrastructure and in-vehicle sensing

# Solutions Offered by DENSO

## Depth

Hazard prediction by applying AI



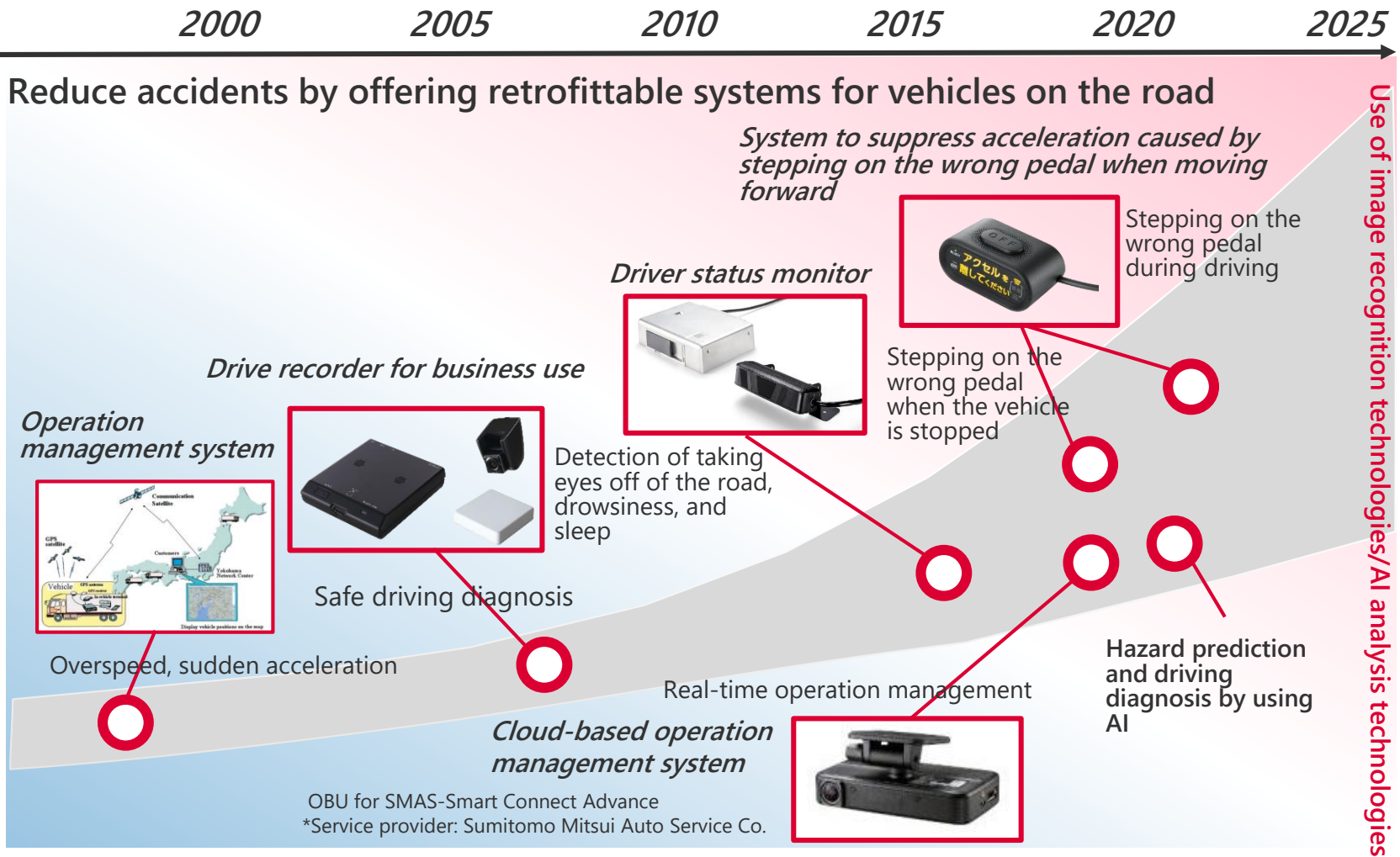
Offer information without disturbing the driver



Develop technologies that prevent the driver from getting close to hazards by offering hazard prediction information



# Solutions Offered by DENSO



## Width

Offer value for various situations and needs



Accident situations



Vehicle types



Software update

Monitor daily driving/prevent mistakes  
+  
Prevent accidents

Expand the lineup of retrofittable products in line with the evolution of ADAS

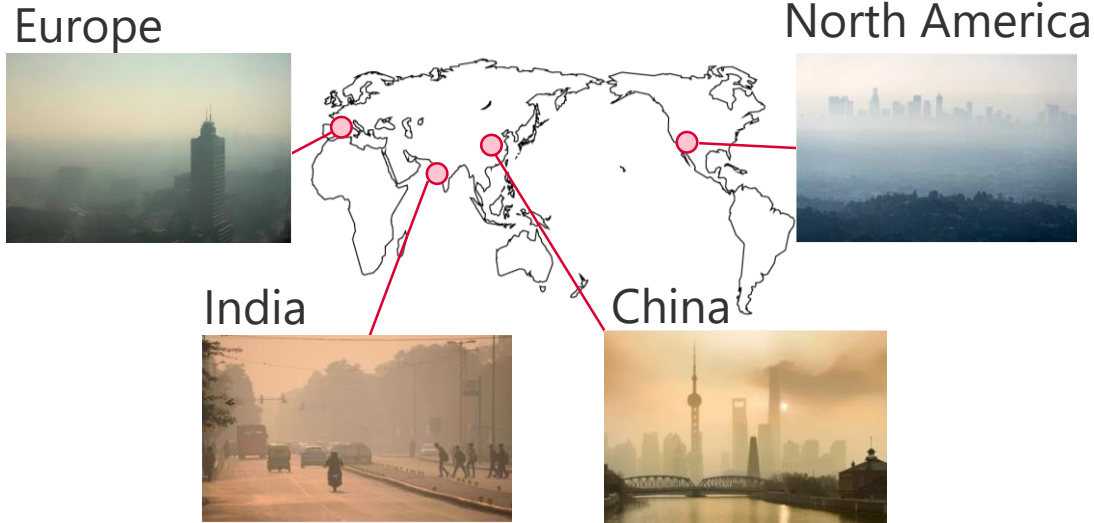
# 2

## Comfortable Space

Creating peaceful, comfortable spaces

# Social Background and Challenges

**Air pollution** 91% of the population live in areas that exceed WHO standards and 4.2 million lives are lost annually \* 1



**Anxiety for air pollution**

**COVID-19 pandemic** Spread all over the world  
More than 160 million people infected \* 2



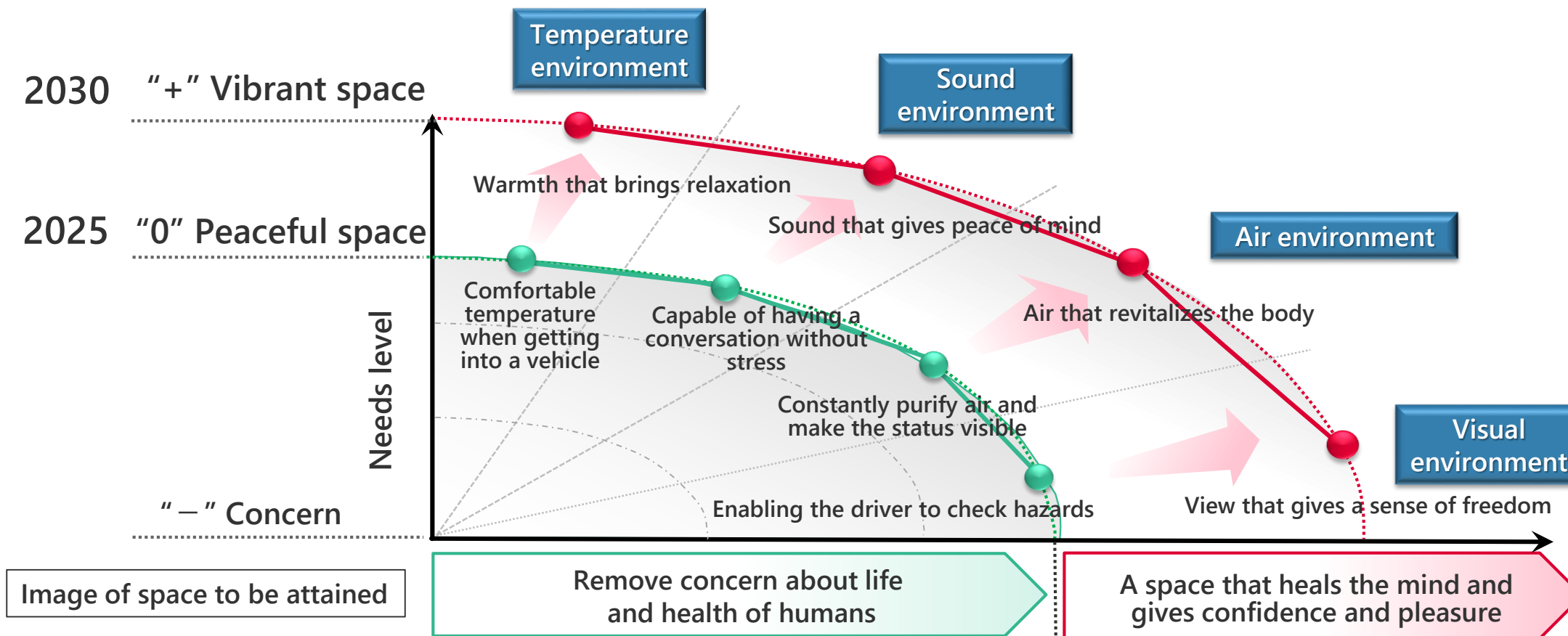
**Concern about virus infection and invisible air**

Sources 1\* : WHO health-topics, air pollution  
2\* : Johns Hopkins University, Coronavirus resource center

**Quickly meet the social needs for an air environment that gives peace of mind as a leading maker of car air conditioning system**

# DENSO's Vision

Offer and spread "a peaceful space" by 2025 and design "a vibrant space" by 2030

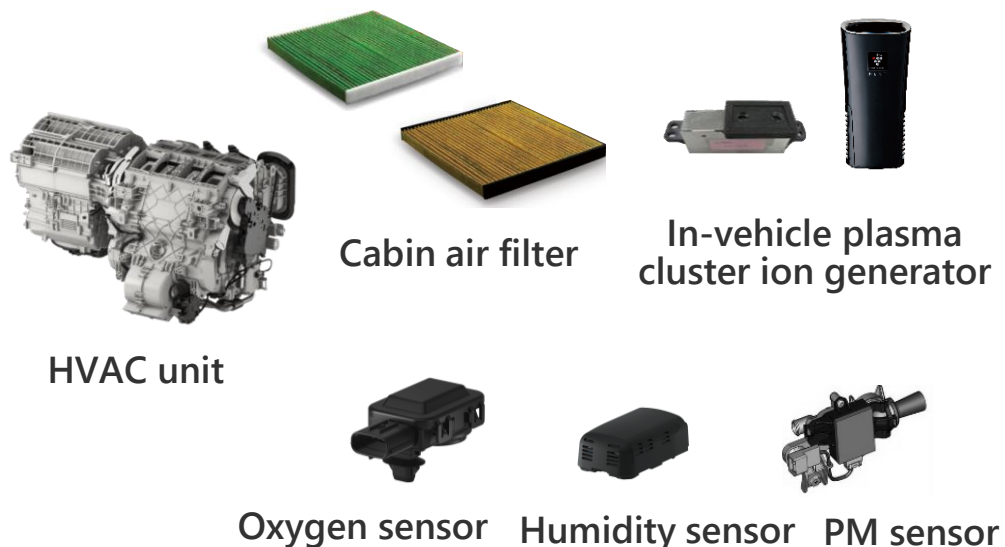


# Solutions Offered by DENSO

Improvements to offer and spread "a peaceful space" by 2025

**Achieve "air quality" that gives peace of mind by removing viruses and visualizing hazardous substances**

## Existing solutions



## New Solution

Sold in February 2021 Puremie

Captures viruses that are 25 times smaller than conventional model



In-vehicle air cleaner  
(fine particulate matter, viruses)

Air cleanliness monitor



## Future Policy

### Purification technology

From capture of fine particulate matter and viruses to purification technologies using photocatalysts, etc.

### Sensing technology

From detection of fine particulate matter to detection of hazardous substances (gases, viruses)

**Deploy products to the in-vehicle space (e.g., passenger cars, public transport services) and public spaces to spread "a peaceful space."**

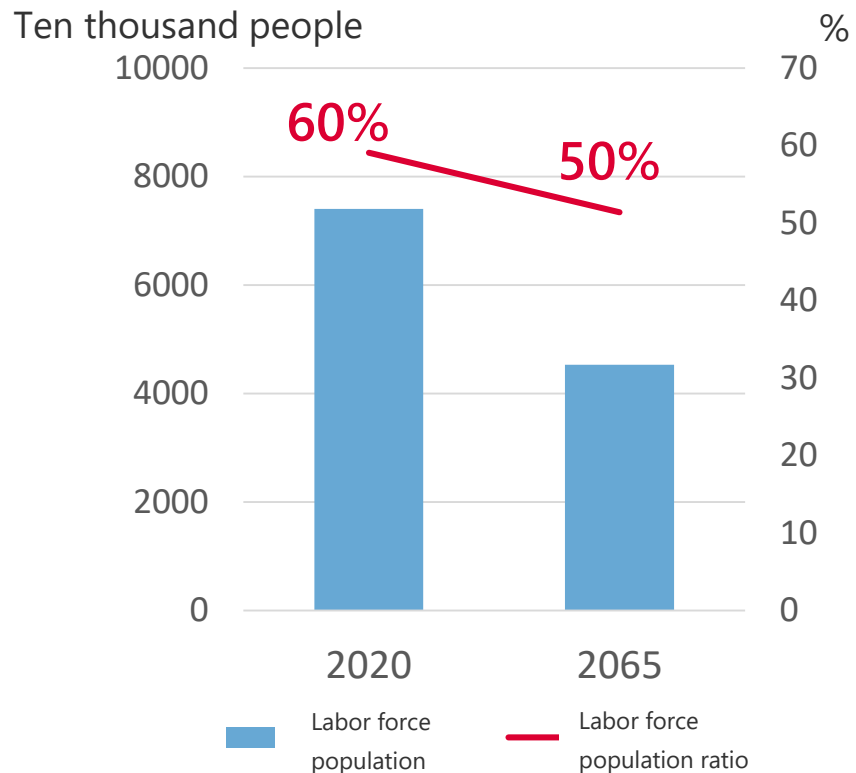
# 3

## Support for workers

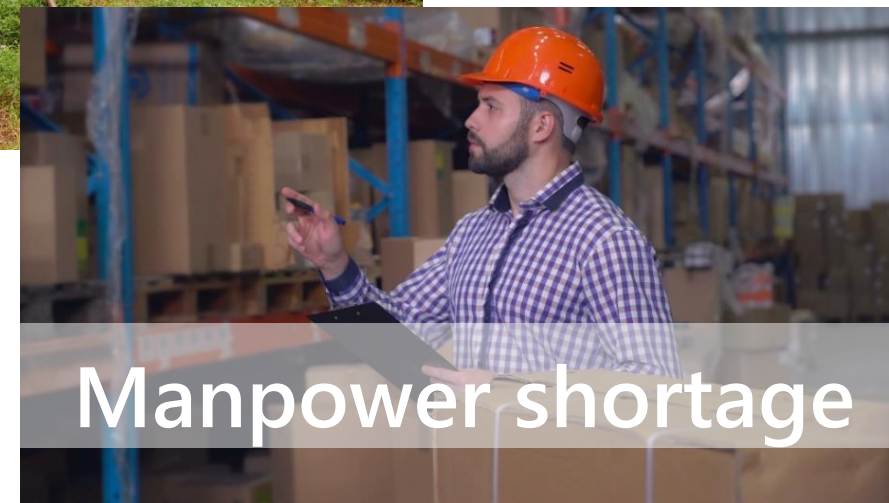
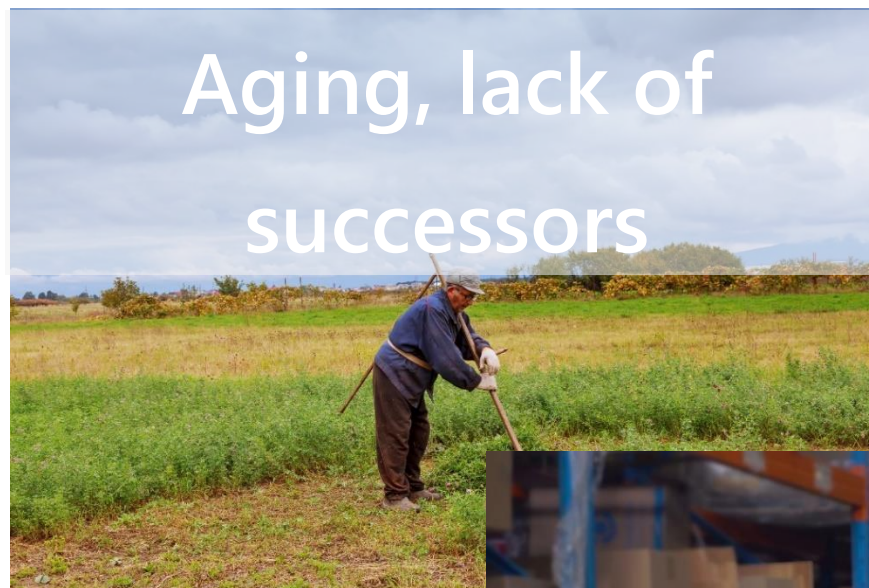
Establishing a society where people are supported and their potential is nurtured

# Social Background and Challenges

## Decrease in the working population



Source : National Institute of Population and Social Security Research



**Declining working population is a serious issue in agriculture, logistics industry, and manufacturing sites**

# DENSO's Vision

Offer "peace of mind" to all people and industries by using technologies refined in the development of automotive components



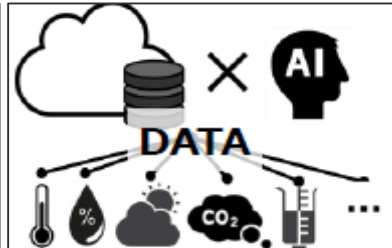
Kaizen



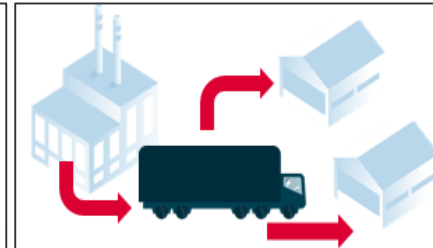
Climate Control



Automation



ICT



JIT



Cold chain

Industries in which DENSO plans to offer "peace of mind" in the future

## Agriculture



- Automation of cultivation and harvesting
- Refrigeration technologies and connected services
- Food traceability

## Logistics



- Automation of transport
- Efficient operation management
- In-plant logistics support robots

## Factory • FA



- Automation of production lines
- Logistics assistance robot in the factory



# Solutions Offered by DENSO



Social issues

**Decrease in farming population and food shortage**

**Driver shortage  
Increase in e-commerce**

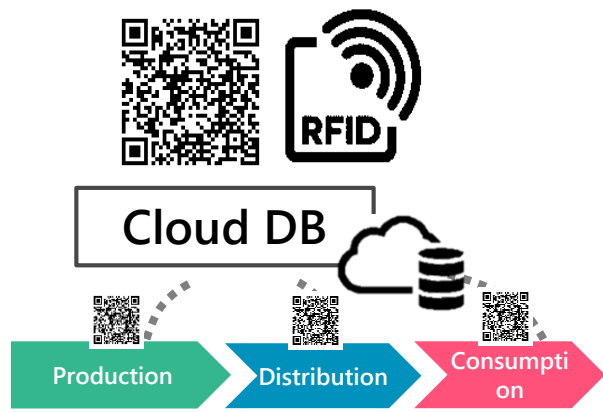
**Ensure peace of mind for food and eliminate food loss**

Value proposition

**Agriculture that enables anyone to achieve stable production**  
 "Turnkey solutions"  
 Greenhouses with advanced control, like vehicles that are started simply by turning the ignition key

**Support for distribution of goods by automating transport**  
 "Last one mile logistics by automatic transport"  
 Automate logistics by using technologies for automated driving Level 4

**Digitalized food distribution**  
 "Food traceability"  
 Optimize supply and demand and ensure traceability by using QR/RFID and ICT



**Solve issues across the food value chain and contribute to peace of mind and stable supply**

# DENSO's Vision

Peace of Mind

Aiming to be a leading company that provides "peace of mind" to society

	Goal	DENSO's activities Value proposition	Current Achievement Level	Target
① ZERO Traffic Accidents	Spread safety products in both "depth" and "width" with the aim of "eliminating traffic accidents"	①Developing products to cover all types of accidents ②Expanding sales of core products and variation of retrofit products	①Assortment of in-vehicle sensors ②Sales 320 billion yen	①All around in- vehicle sensors Strengthen Map, V2X and DSM* ②ADAS Sales 500 billion yen (2025)
② Comfortable Space	Offer and spread "a peaceful space" by 2025 and design "a vibrant space" by 2030	- Relieve anxiety about invisible air - Creating comfortable space with four environment, "Temperature" "Sound" "Air" "Visibility"	Launching commercial products in Japan	Spread in-vehicle products and expanding into public spaces (2025)
③ Support for worker	Solve the problem in each industries using DENSO's technologies	Providing solutions that systematize technology and quality in total	Demonstration and commercialization	300 billion yen sales for agriculture, logistics and FA (2030)

\*DSM : Driver Status Monitor

DENSO's Sustainability Management; Solving social issues through business.  
"promotion of products and systems" x "safety"

**With DENSO technology,  
Create a society filled  
with "peace of mind"**



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