Smart Truck Solution

Background

North America
Heavy and medium trucks : 14.4M — Total: 34M

Europe
Heavy and medium trucks : 6.2M — Total: 40M

Latin America
Heavy and medium trucks : 6M — Total: 27M

Asia Pacific
Heavy and medium trucks : 7M — Total: 14M

South Africa
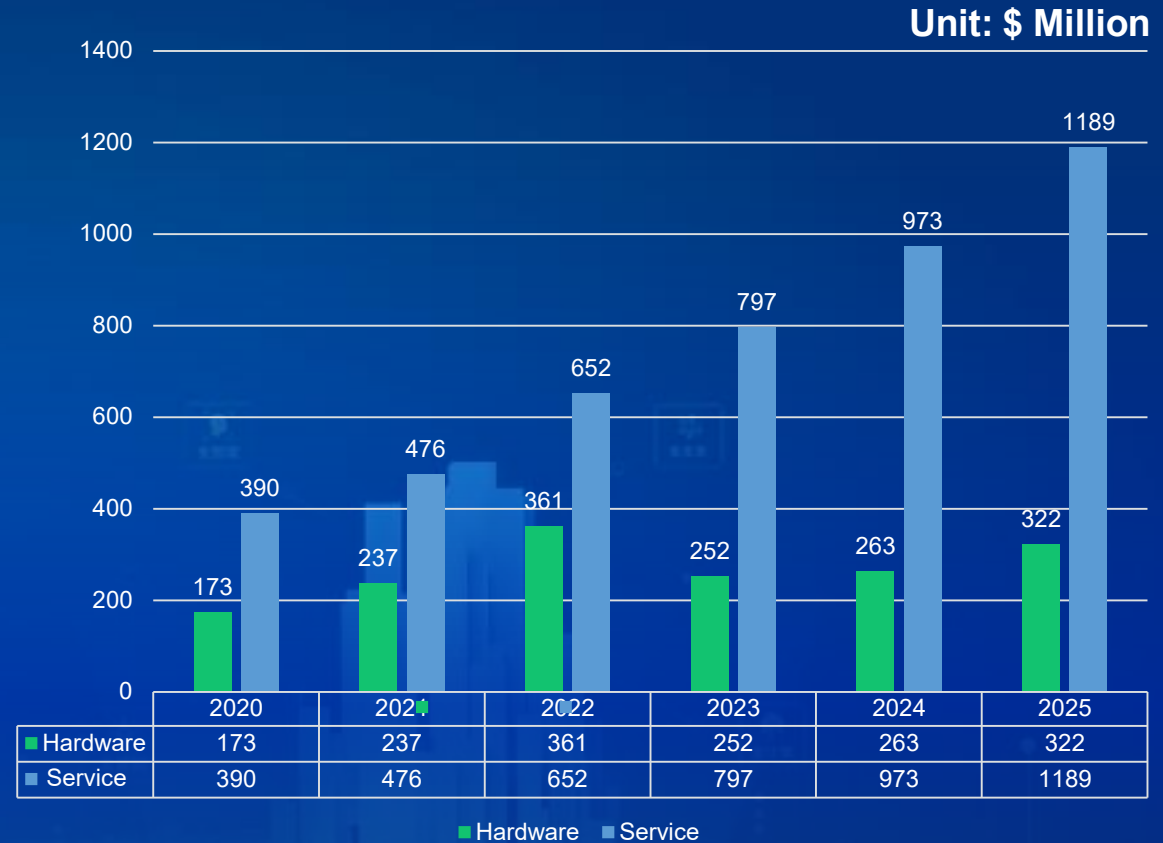Heavy and medium trucks : 450k — Total: 3M

120M Trucks

The trucking industry is the lifeblood of the economy, with more than 120 million trucks transporting more than 60% of all freight worldwide

Global Truck Video + Telemetry Market

Estimated in 2025, the global demand will be 1.72 million units, with a market capacity of US$1.51 billion.

Unit: $ Million

	2020	2021	2022	2023	2024	2025
Hardware	173	237	361	252	263	322
Service	390	476	652	797	973	1189

■ Hardware ■ Service

(From: Frost&Sullivan)

Background / tecnology has matured, Enter the era of al and data

The Stage I	The Stage II	The Stage III	The Stage IV	The Stage V
GPS/OBD	**CCTV**	**AI Active Safety**	**Data-driven Safety**	**Autopilot**
• Location • Speed • Time of driving	• Live view • Record down loading • Play back	• Active safety warning • Driver Identification	• Driver dashboard • Data Analysis	• Autopilot
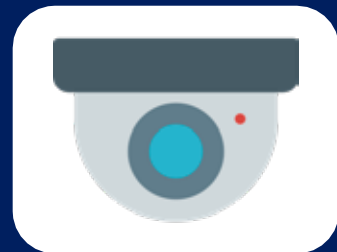
Challenges

Business challenges of different roles in the trucking industry

Fleet
- Proof of accident liability
- Driver management
- Efficient Fleet management
- Prevent cargo theft

Driver
- Proof of accident liability
- Regular driving behavior
- Prevent cargo and fuel theft

Insurance
- Identify false claims
- High claim ratio
- Reduce costs and differentiate competition

Owner of goods
- Cargo damage
- Cargo theft

Supervisor
- Road safety improvements
- Accident investigation

Main reasons for using telematics by company size

Sample of fleets of light commercial vehicles (LCVs)

	EU	Asia
Track / locate the vehicle	34%	37%
To improve operational efficiency	29%	27%
Reduce fleet costs	23%	22%
Prevent unauthorised usage	22%	23%
Improve driver behaviours	19%	19%
Improve drivers safety	17%	19%
Reduce environmental impact	14%	13%
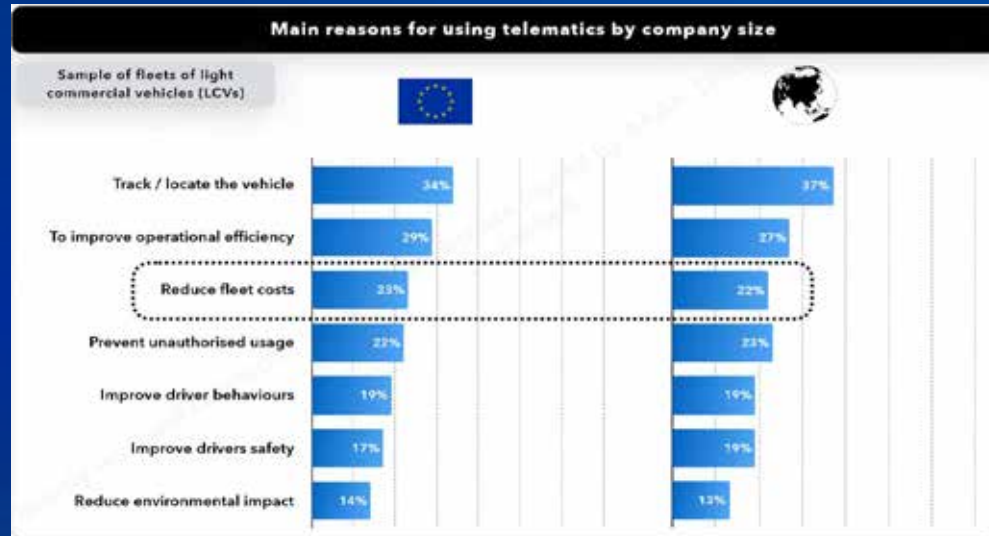
The main reasons why light trucks use telematics services:
1. Vehicle positioning and tracking,
2. Improve operational efficiency,
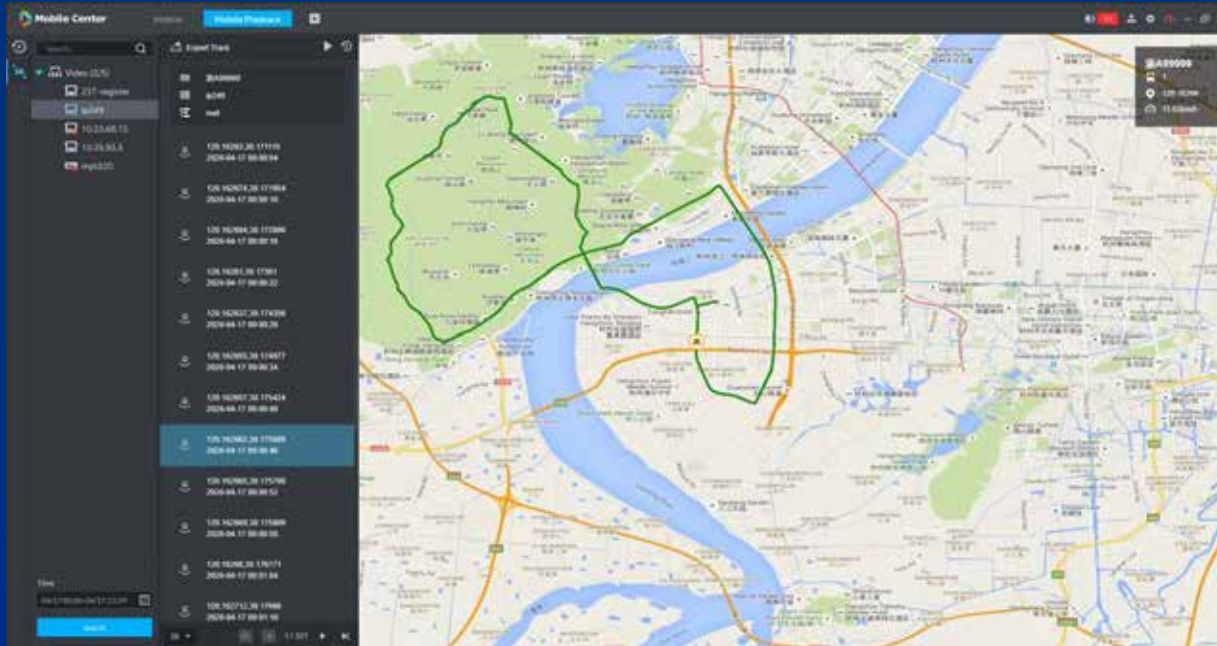3. Reduce fleet costs

Smart Truck Solution

Fleet management / GPS Tracking

Real-time locating & Route Playback

Operation dashboard

Global view of fleet

➢ Support remote real-time preview and playback of all on line buses

➢ Support to track the position of all the buses
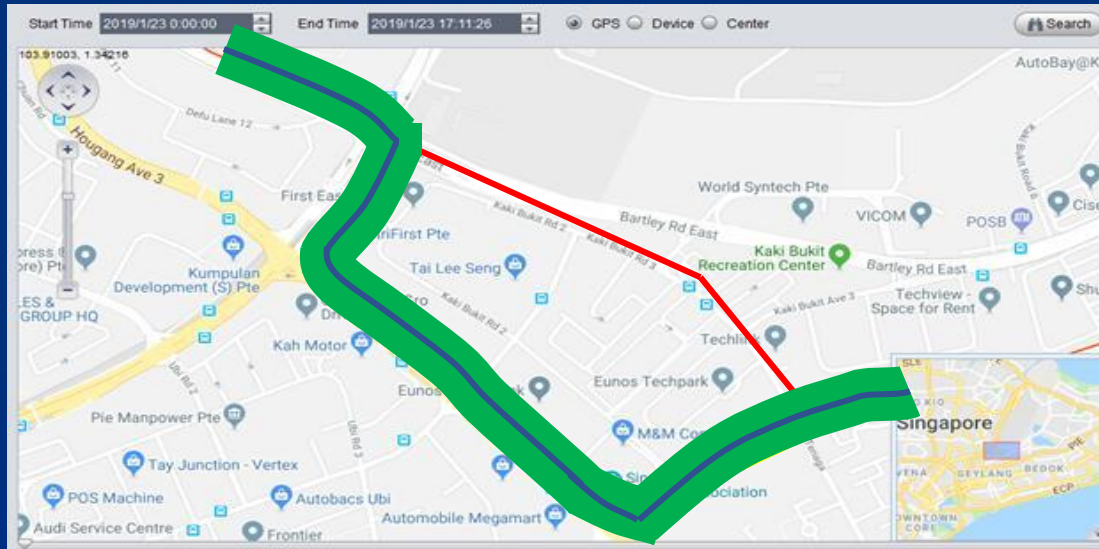
➢ Real time event fast response and manage

Clear view of operation dashboard

➢ Vehicle online statistics

➢ Equipment failure statistics

➢ Mileage statistics

Fleet management / Reduce costs

![Map showing route with Start Time 2019/1/23 0:00:00, End Time 2019/1/23 17:11:26]

■ Prescribed area   ── Violation area

Fuel Consumption Management

➢ Early warning of high fuel consumption driving behavior (idling for a long time, not driving according to the route)
➢ Uses ultrasonic waves to detect the fuel height and calculate consumption
➢ Generates reports for fuel consumption based on the mileage.

Fleet management / Driver manage

Driver Identification and overtime driving by face recognition

➢ Cameras for drivers Identification

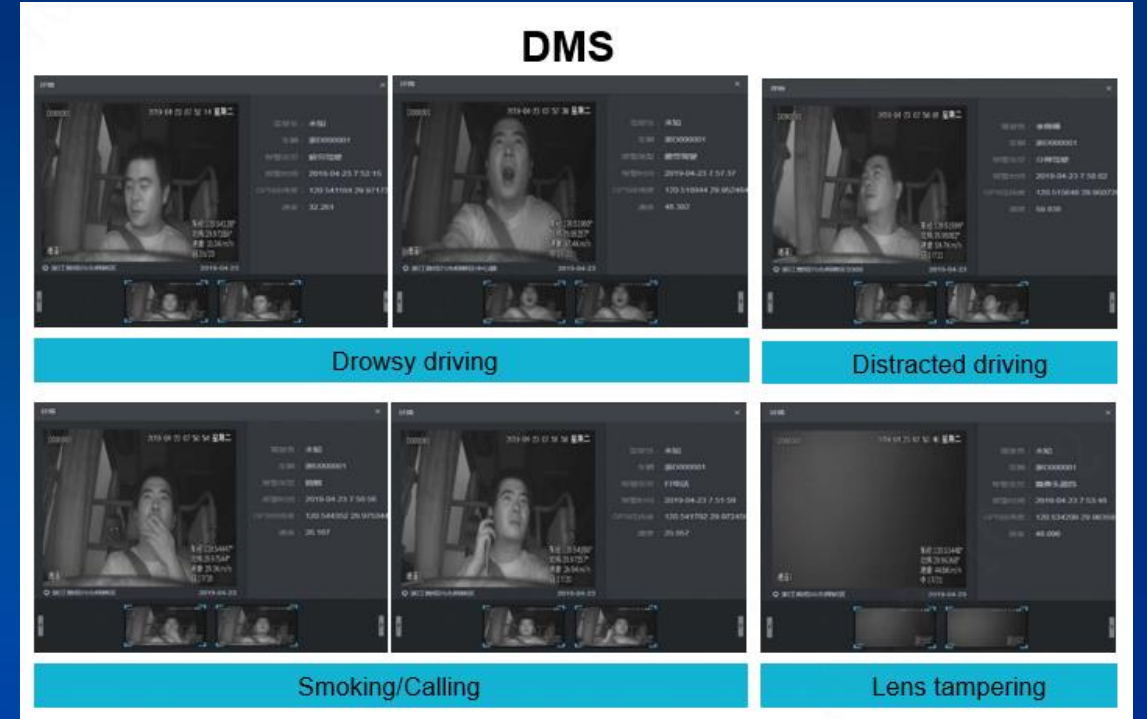➢ Count the continuous driving time of the same driver and trigger an alarm for overtime driving.
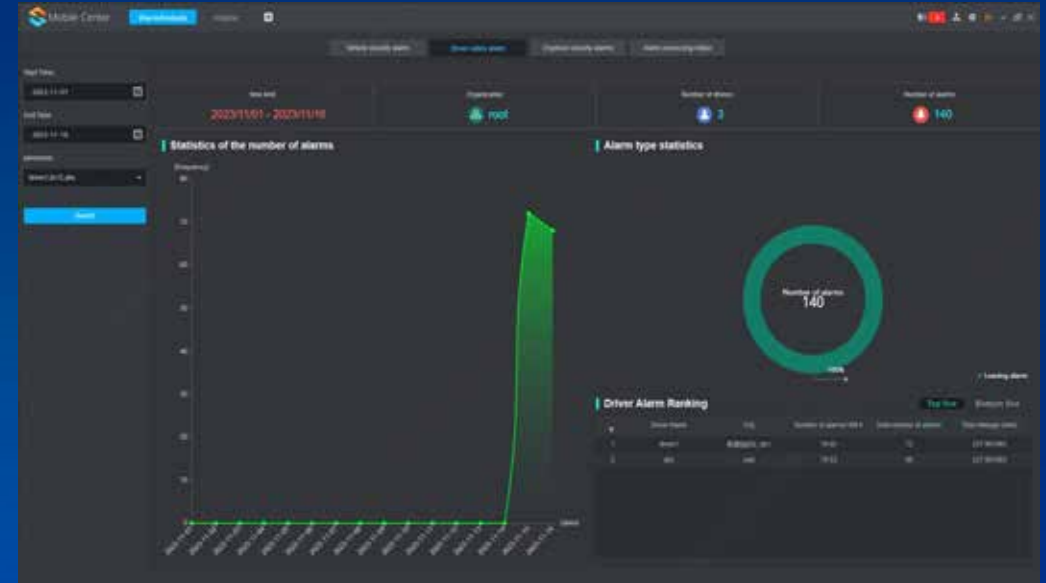
Driver portrait dashboard

➢ Driving behavior statistics (alarm type distribution)

➢ 100 kilometers safe driving ranking

➢ Customizable for more dimensional statistical analysis

DSM

➢ Detect illegal driver behaviors, like look around, yawn, close eyes, smoke and make phone calls by DMS cameras

➢ When these behaviors happen ,our system will warn the driver and upload the alarm to the control center as evidence,

eventually to decrease accidents

Improve safety / ADAS

Driving behavior data analytical statement for one bus fleet

ADAS(Advanced Driver Assistance System)

➢ Detect lane departure, avoid collision and lane keeping assist and distance detection by ADAS cameras

➢ When these behaviors happen ,our system will warn the driver and upload the alarm to the control center as evidence，eventually to decrease accidents
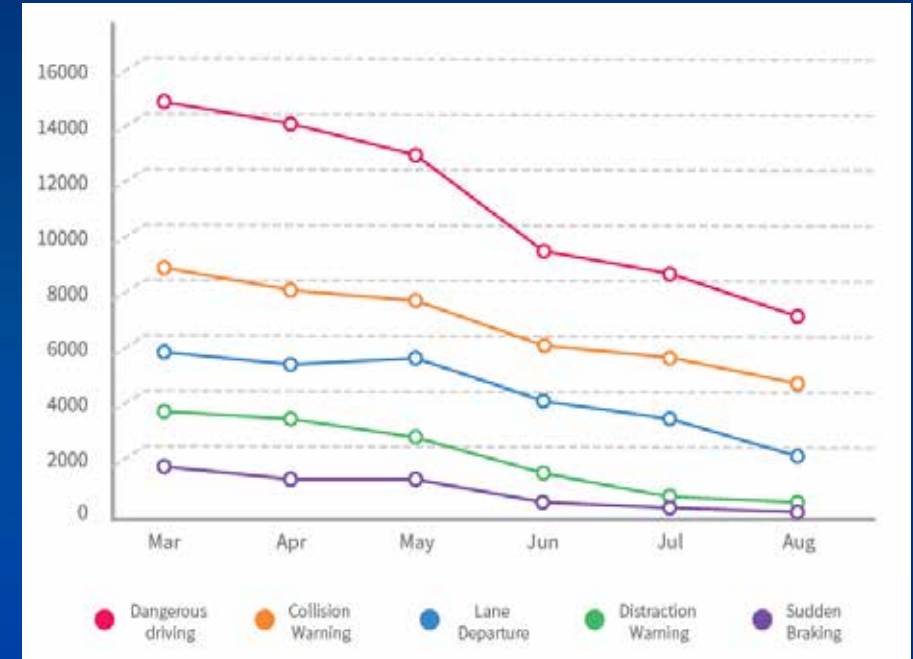
Blind Spot Detection

➢ Informs drivers of pedestrians and non-motor vehicles in blind spots.

➢ Indicates the proximity of items to the vehicle.

➢ Uses sound and light prompts to warn pedestrians.

Improve safety / Reduce insurance charge

24%	**Reduction** in claims frequency
40%	**Cut** in claims costs
100%	**Increase** in annual insurance rebate

Video evidence and AI can reduce Insurance charge

➢ Reduce false and fraudulent claims by having video evidence of exactly what happened.

➢ Fewer traffic accidents and fewer insurance claims , lower insurance charge next year

Rapid response for emergency

➢ Real-time alarm upload and manage based on GPS and audio talk, Remote playback and download full coverage HD video

➢ Through events such as Emergency button or E-fences, link to cut off fuel or power of the truck
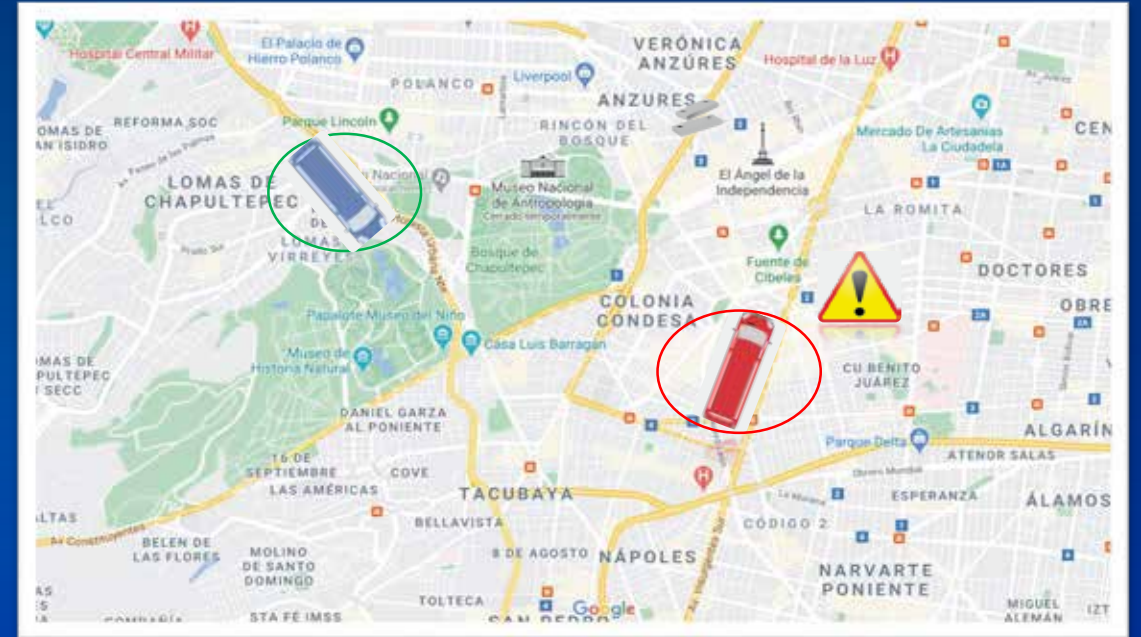
Cargo security / Cargo anti-theft
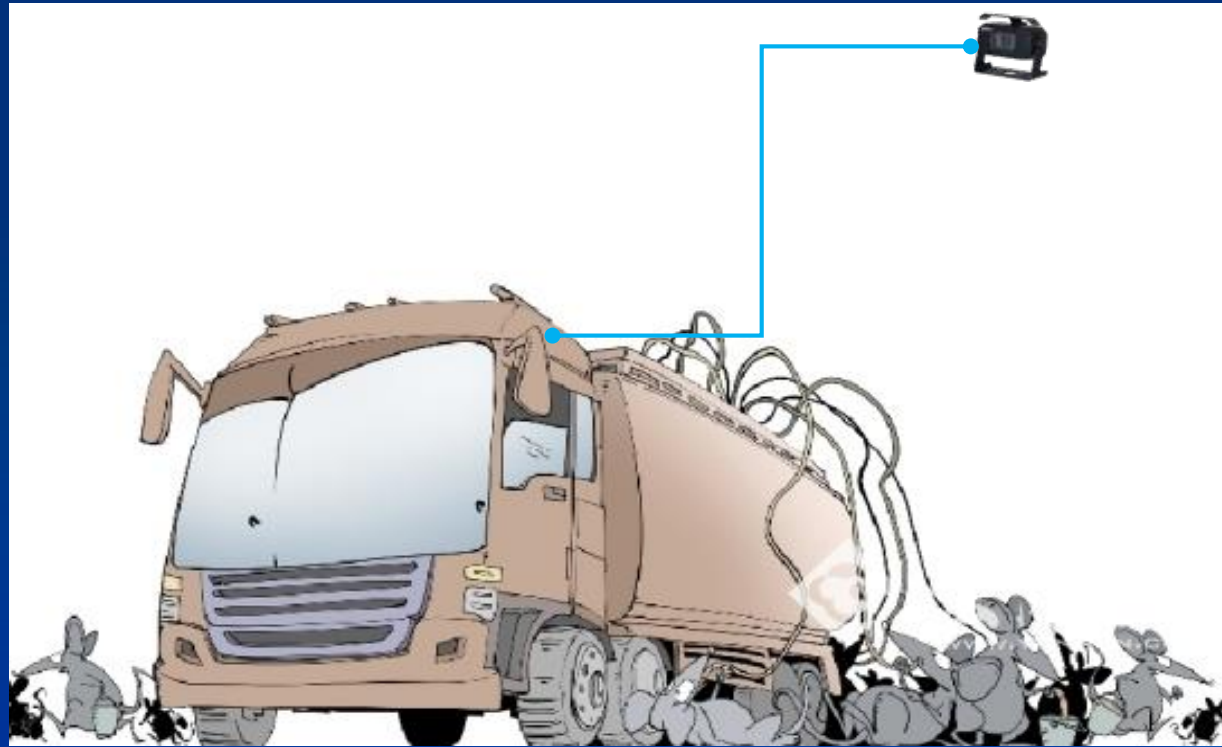

Trigger alarm and
upload to control center

Door sensor to detect abnormal open
/Magnetic door lock

E-fence

➢ Designate driving routes to prevent drivers from entering

unsafe zones

Cargo security / Oil tank truck

Trigger alarm and
upload to control center

➤ Monitor the oil inlet and outlet of the oil tank

➤ Alert when somebody appear in abnormal areas(Climb up the oil tank or stand at the oil outlet)

Smart Truck Solution

- **Background**
  - Industry background
  - Challenge
- **Smart Truck Solution**
  - Fleet management
  - Improve safety
  - Cargo security
- **Successful cases**

中国邮政
北斗物流系统

[Achievement
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- In 2017, Dahua deployed its **mobile** solution in about **_5,300 vehicles_** of China Post, providing remote monitoring, remote voice intercom, alarm pre-recording, track query, emergency alarm, etc.
- From 2019 year, they have asked Dahua to carry out intelligent upgrades, including **_DSM, ADAS intelligence function_**.

[Achievement]

- Deployed ***Dahua mobile vehicle solution*** in over ***500 vehicles*** during 2018, enabling them to do vehicle route management and driver management through interaction with the management center. It also supports government in monitoring these vehicles.
- Continues cooperation in phase 2 project from 2020 year , has deployed the solution ***with DSM and ADAS***, the ***statistics report*** bring valuable information to ***improve their management and customer's satisfaction*** .