

Nextgen “**Smartyre**” TPMS from Eagle Eye For commercial Vehicle



Tire technology + Bluetooth + Vibration analysis + AI

**Beyond Pressure -Smart Tires, Smooth
Drive**

The Evolution of TPMS

Earlier TPMS generations offered only basic pressure and temperature monitoring as standalone units, while the latest version is fully connected, tracking load, deformation, and tire aging.

Gen 1



First generation: single air nozzle tire pressure sensor
Widely used in passenger cars

Gen 2



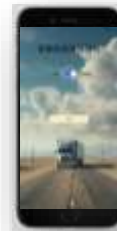
Second generation: External or strapped tire pressure and temperature sensor
Applied to commercial vehicles

Gen 3



Third generation: Web version, pasted tire pressure and temperature sensor
Facilitate corporate tire management

Gen 4



Fourth generation: mobile Internet network, improve the efficiency of use

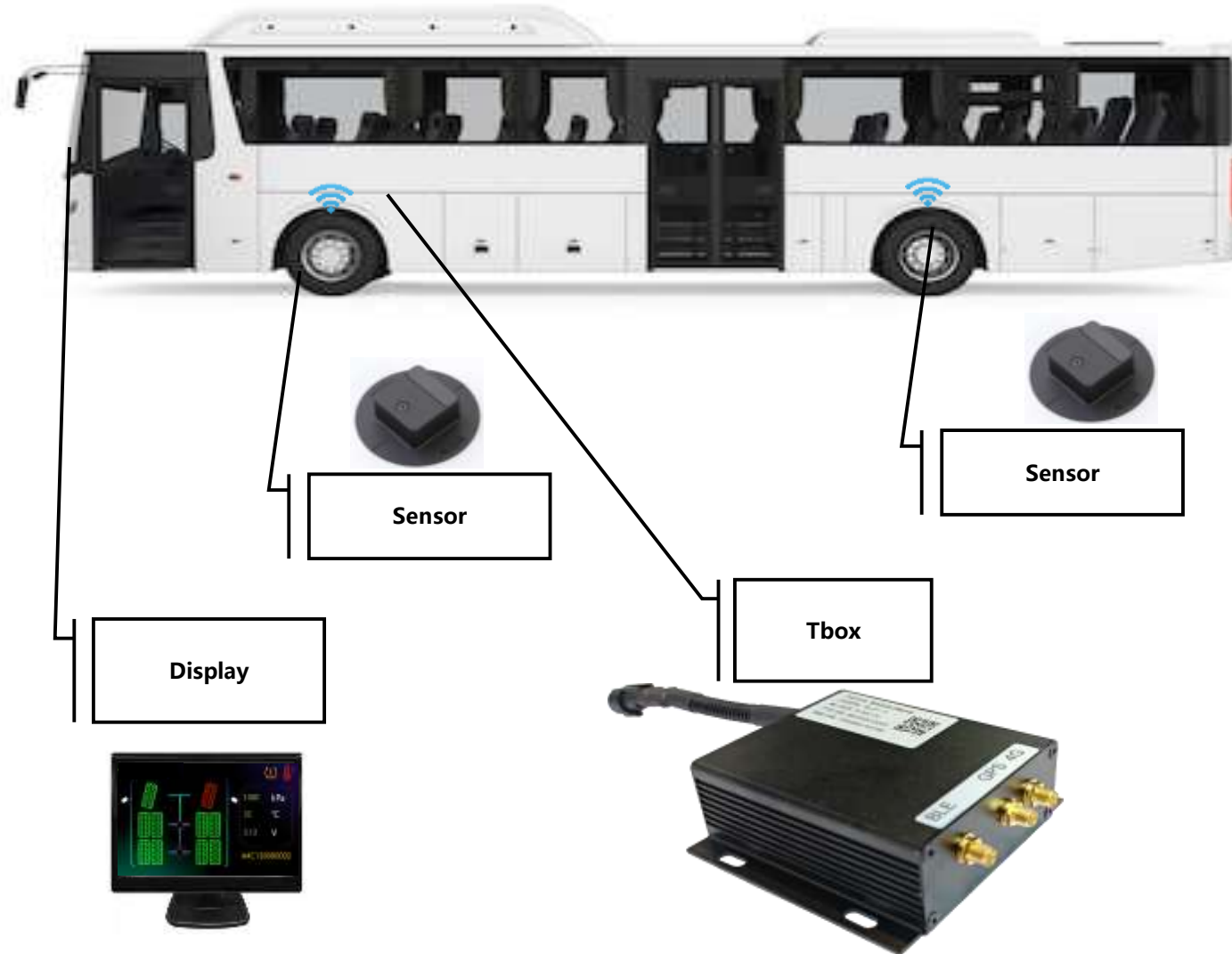
Gen 5



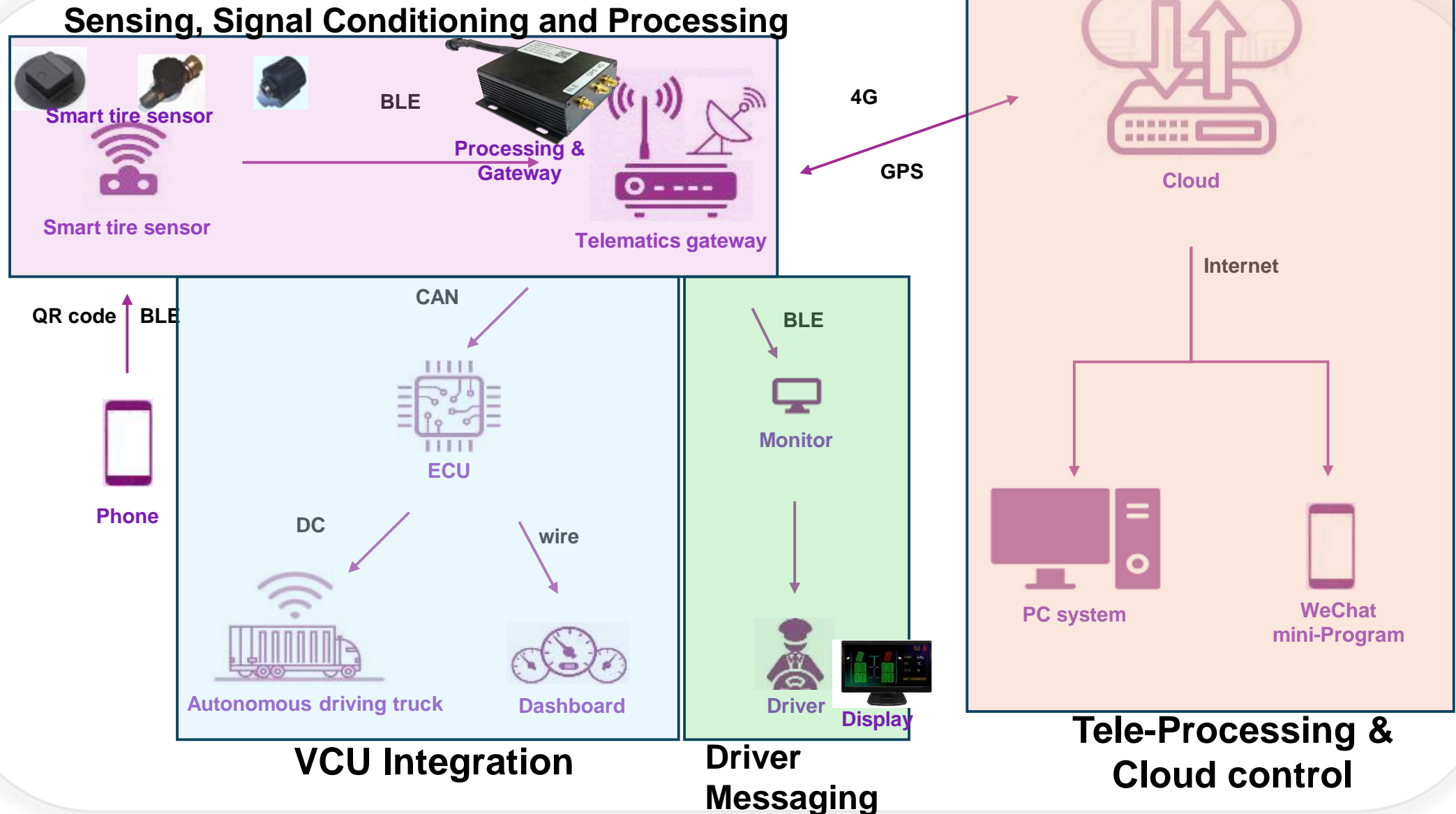
Fifth generation: Smart tires equipped with sensors that provide more data to the tire than just temperature and pressure

"Eagle Eye **Smartyre** products represent a breakthrough in functionality, enabling your tires to communicate with you constantly—anytime, anywhere."

Tyre Pressure Monitoring System (TPMS) Configuration



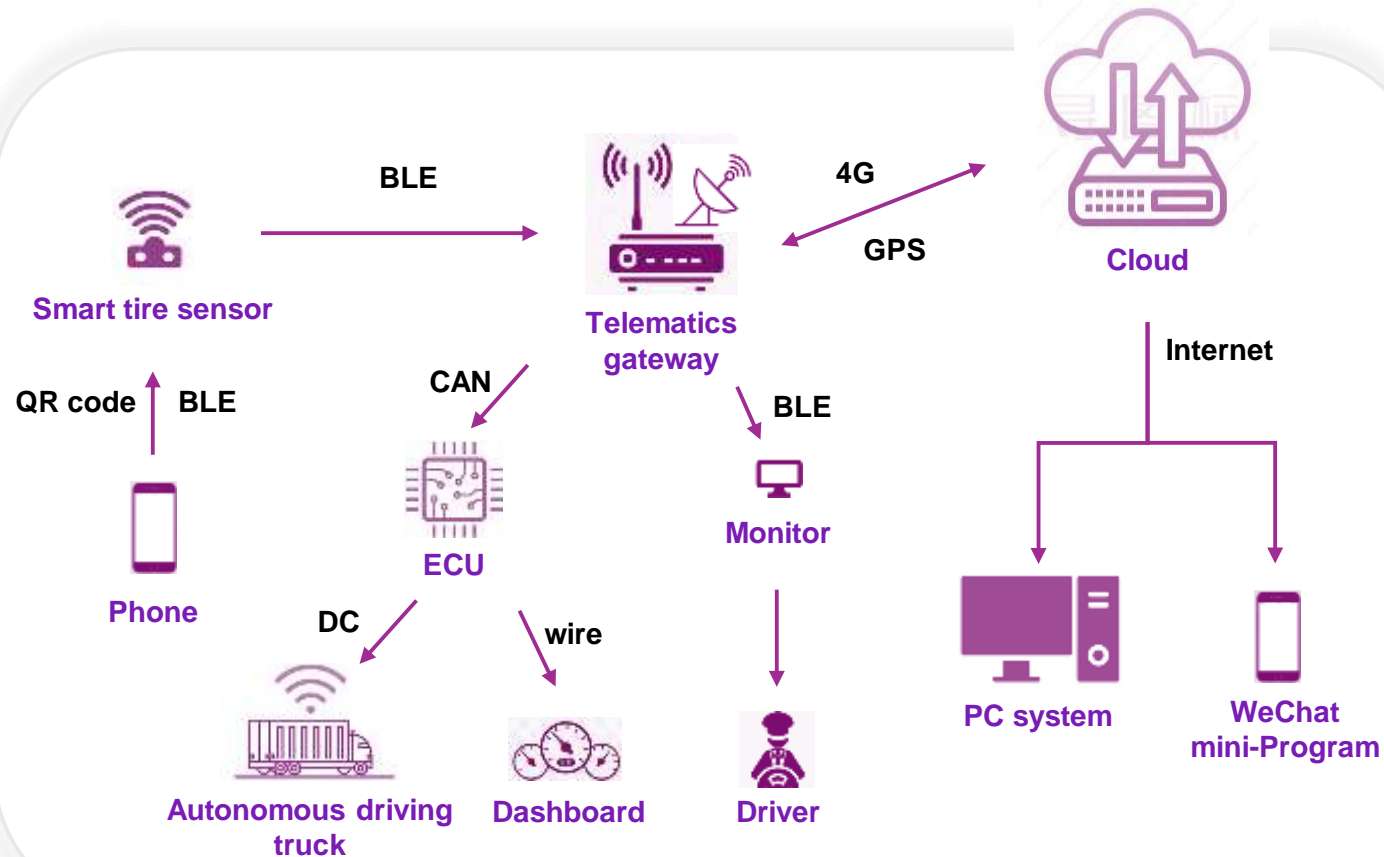
The Technology Frame work of **Smartyre** TPMS for Commercial Vehicles



The Technology Frame work of **Smartyre** TPMS for Commercial Vehicles



Smart tire sensor



gateway



screen

Installation: body/cab
Built-in GSM/GPS module
Support CAN protocol communication module
Working voltage: DC 9V ~ 36V
Operating temperature: -40°C~85°C
Waterproof class: IP66
Upload data: temperature, pressure, altitude, speed, load, pattern depth, position, etc

Installation mode: pasted, bundled, external
Pressure range: 0-14bar
Temperature range: -40°C~125°C
Operating temperature: -40°C~125°C
Waterproof class: IP69
Battery life: > 3 years or 400,000 km
Signal mode: Bluetooth
Tires mode: radial tires

Features and advantages of **Smartyre** TPMS product family

Traditional TPMS products



Tire pressure monitoring



Tire temperature monitoring



433MHz Communication technology

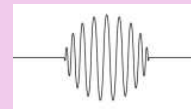
Eagle Eye's **Smartyre** core technology



Tire technology



Bluetooth



Vibration analysis



Artificial intelligence

The advantages of a new generation of intelligent tire management systems



Powerful functions



Stable performance



Easy installation



Professional management system

Advantages of **Smartyre** TPMS products



Powerful
functions

Basic function



Pressure



Temperature



Speed



Tire mileage



trace



Cold pressure



quantity of
electricity

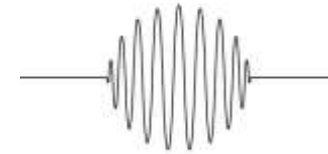


Driving behavior

Advanced function



Tire technology



Vibration technology



AI



Tire load



Pattern depth

Advantages of **Smartyre** TPMS products



Break through the technical barriers of Bluetooth technology in the field of TPMS, and comprehensively improve the communication efficiency and stability of sensors



Stable performance

Eagle Eye's **Smartyre** adopts Bluetooth 5.0



- Bluetooth 5.0 offers significant improvements in transmission speed, coverage, low power consumption, network support, and audio transmission quality.
- Bluetooth 5.0 transfer speed increased from 1Mbps to 2Mbps
- The transmission distance can even reach a maximum of 240 meters
- It also lasts longer than older devices
- Ideal for iot and indoor location use

Traditional TPMS manufacturers all use
433MHz communication technology



- Advantages include high penetration, long range transmission, low power consumption
- Disadvantages include interference, low transmission rate, and limited bandwidth

98%

Bluetooth real-time signal acquisition rate

80%

433MHz real-time signal acquisition rate

Advantages of **Smartyre** TPMS products



We ensure the stability and reliability of the management system

Stable performance

98%

5%

±1mm

1°C

20kpa

1%

Signal real-time acquisition
rate

Load error

Pattern depth error

Temperature error

Pressure error

Tire mileage error

- The load and pattern measurement function needs to calibrate the tire, otherwise the error is slightly amplified to 10% and ±1.5mm
- The calculation of pattern depth depends on the calculation of tire parameters, rather than the calculation of tire mileage life
- With the trailer's automatic **combination** function, to ensure that the trailer tire mileage accurate measurement

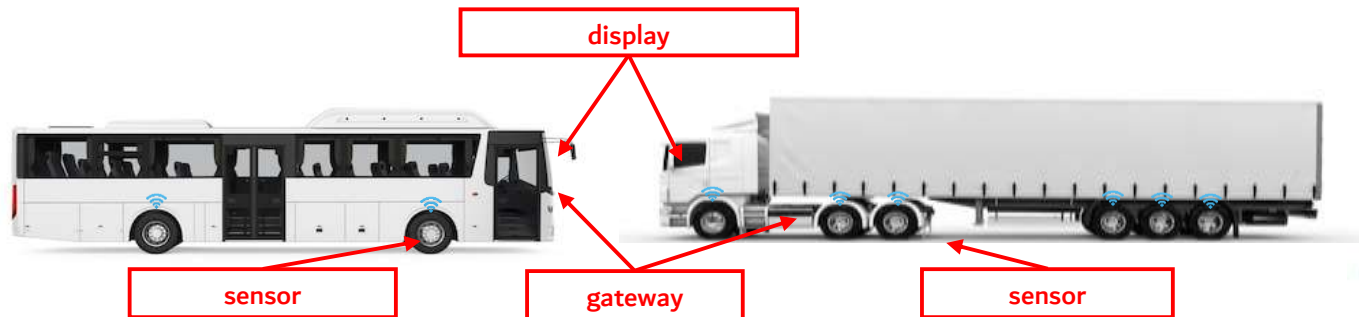
Advantages of **Smartyre** TPMS products



Convenient
installation

In view of the performance advantages of Bluetooth technology, Eagle Eye only needs **one** gateway to implement the monitoring of vehicle tires.

Gateway installation time **10min**



The self-developed sensor special double-sided adhesive paper makes the sensor paste more convenient and standardized.



Low overall cost
Reduce equipment



Easy access to
electricity
secure



24H monitoring
The battery is powered
on



Easy to install

Advantages of **Smartyre** TPMS products for Fleet Management



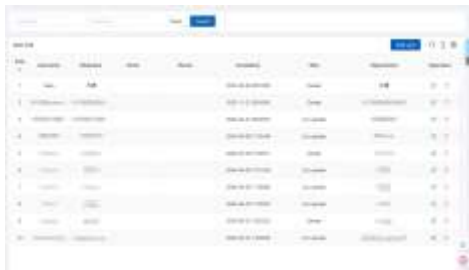
**Professional
management system**

Eagle Eye **Smartyre** TPMS combines the management needs of users in the actual process to provide customers with more professional management solutions



**Authority
management**

Administrators, operators, and drivers can manage the platform according to their respective identities



**Alarm threshold
setting**

It can be personalized according to the actual use of tires by the team and management needs



Alarm level setting
According to the severity of the alarm, the alarm is subdivided to better guide the on-site personnel to take measures



Alarm mode

The alarm can be reported through the relevant personnel's mobile phone SMS, management platform and display screen



SMS



PC



screen

D
Dajin Tech
Eagle Eye
Partner

**Management
platform**
PC for monitoring and management



The value of **Smartyre** TPMS

Countermeasures of **Smartyre** TPMS system

- The system monitors the working status of all tires in the entire fleet in real time
- When there is an alarm situation, the system will **send timely information to relevant personnel** in the form of short messages, web terminals, apps and displays to reduce the running time with abnormal Tyres, ensure safety, and reduce abnormal tire wear
- The tire load measurement function can obtain the load information of each tire, and help analyze whether the abnormal wear of the tire is caused by the structural problems of the vehicle. Combined with the mileage statistics function, it is convenient to calculate the TKPH value, rationally arrange the working time, and delay the aging of the tire
- The tire life cycle management module records the entire use process of each tire to reduce the probability of failure
- It can grasp the tire pattern depth in real time, understand the tire consumption, and ensure the safety of travel
- Tire temperature, tire pressure, load and other data provide decision-making basis for automatic driving

Case effect



1%~4%

Increase energy efficiency



15min

Save vehicle tire pressure inspection time



5%~15%

Extend tire life

Smartyre TMPS help in Safe driving of



Smartyre TPMS Key solution-Guide wheel



- The driver knows the condition of the tires through the screen display
- Real-time monitoring, when there is an anomaly, the master will alarm through the buzzer and the screen display

The value of **Smartyre** TPMS products-pressure and load



Real-time monitoring of tire pressure reduces abnormal wear due to abnormal tire pressure

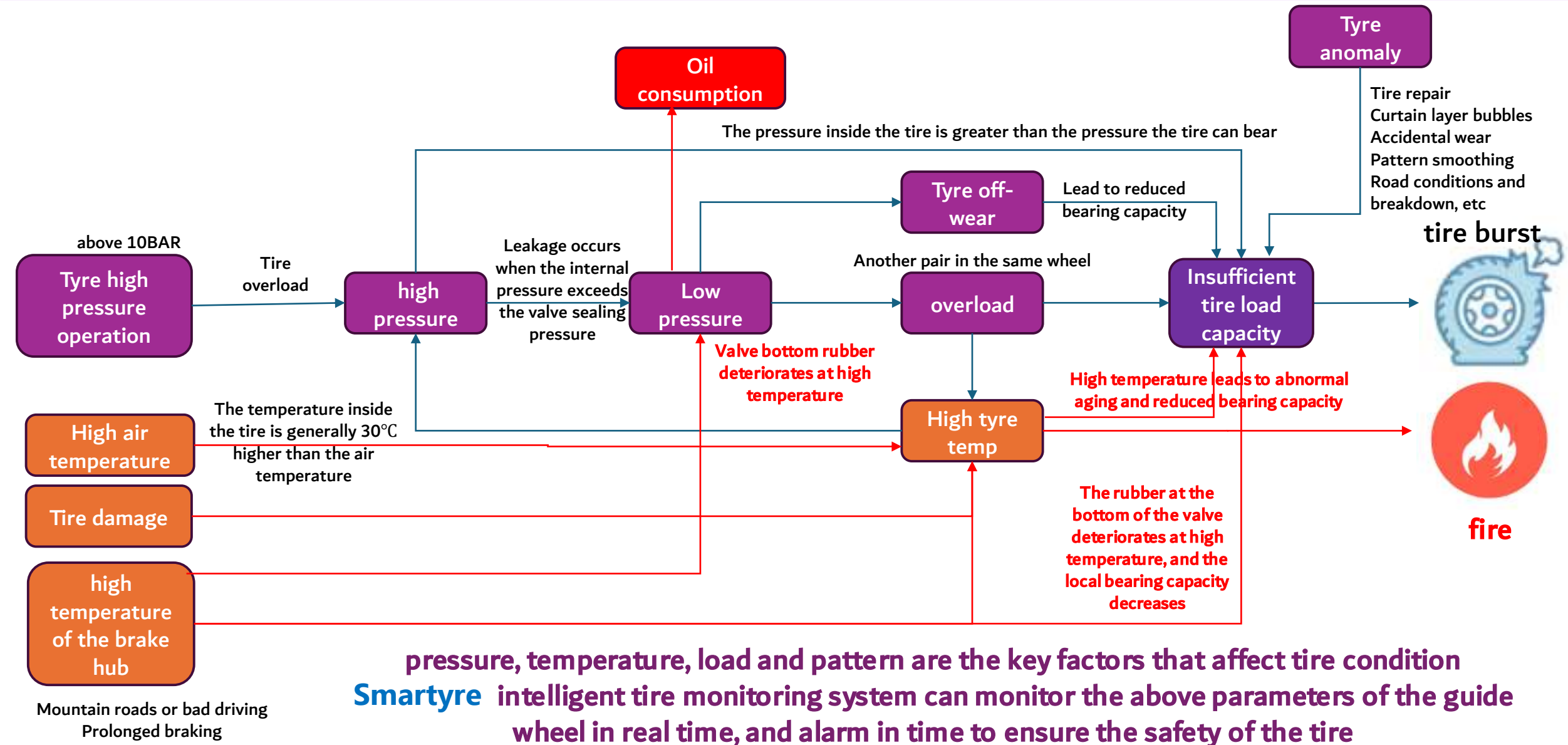


When a tire has low pressure, other related tires will share the load of the tire, causing partial wear, and even high temperature and even burst tires with excessive load



Tire burst timely alarm, to avoid the situation of unable to drive caused by double tire burst, reduce the fine and rescue costs in this case

The value of **Smartyre** TPMS products



The value of **Smartyre** TPMS products-temperature and load

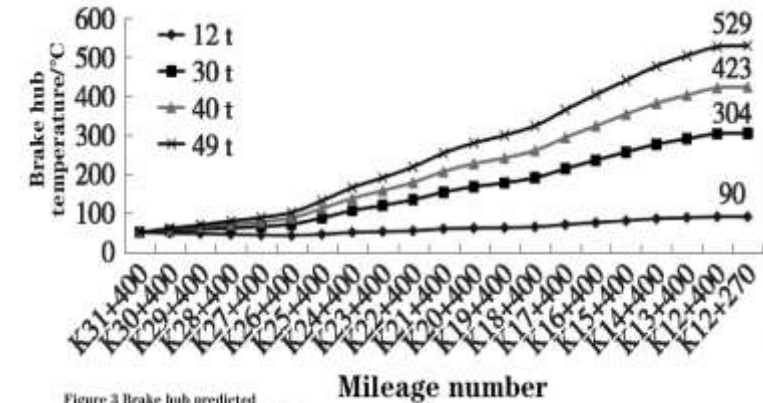


Figure 3 Brake hub predicted temperature (v=80 km/h, downhill)

- The reasons for the occurrence of tire high temperature are mainly divided into two situations
- The heat generated by the tire itself, mainly due to excessive speed or excessive load, easy to burst the tire
- The other is due to the high temperature of the brake system or shaft, and the conduction to the tire, so that the temperature is too high, easy to produce tire fire
- The load detection function allows the user to clearly understand the cause of the increase in tire temperature

A large, semi-transparent blue gradient overlay covers the entire image. In the center, a car tire is visible, positioned as if it's part of a vehicle moving along a road. The road has white lane markings and curves into the distance. In the background, a city skyline with several buildings is visible under a hazy sky. The text "Thank You!" is written in a large, white, sans-serif font across the middle of the image, partially overlapping the tire and the road.

Thank You!