

RONDS Intelligent Wireless Condition Monitoring System



1. System General Introduction

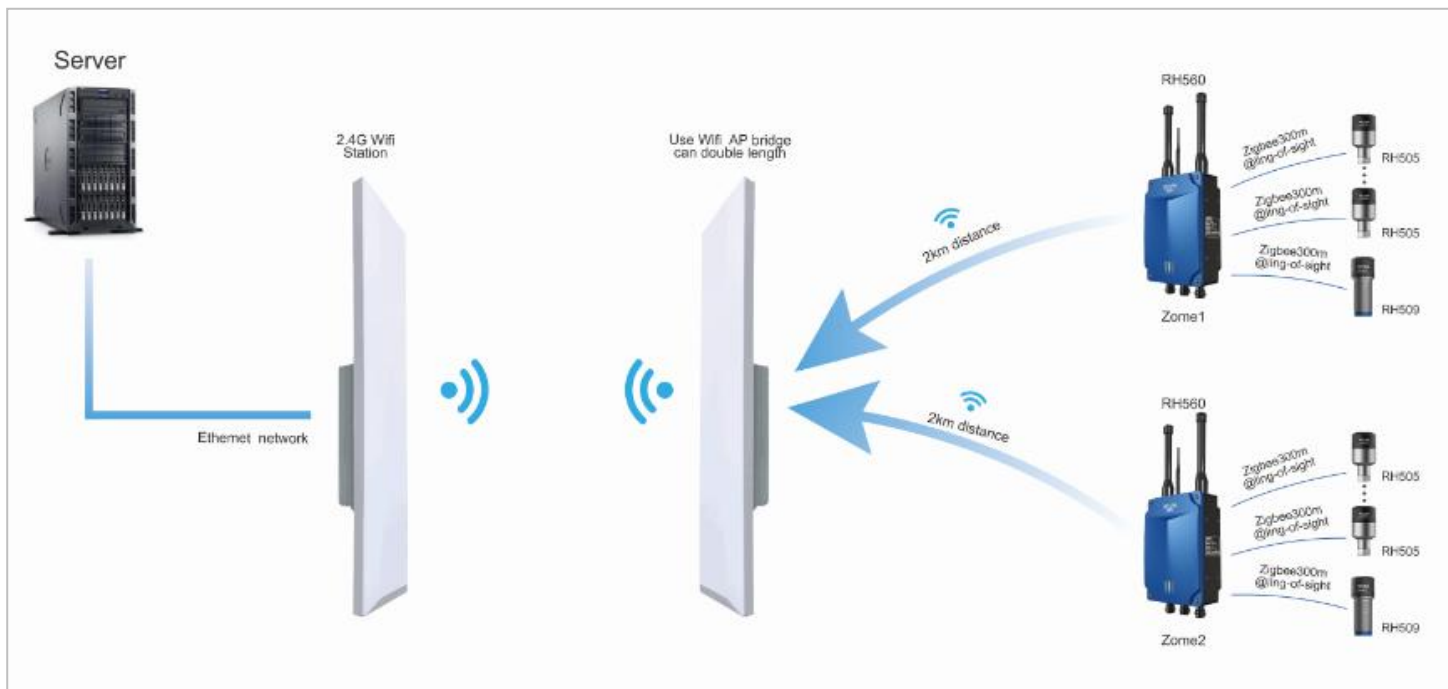
RONDS INTELLIGENT WIRELESS CMS is positioned on industrial enterprises, which is developed by RONDS Company for scattered measuring points and unavailable wiring work. It integrates vibration, temperature and speed signals.

System hardware includes RH560 wireless collection station, RH505 wireless vibration & temperature integrated sensor and RH509 wireless speed sensor. The online PC software MOS3000 is used to monitor machine real time condition, help users to learn machine's fault in advance and avoid unplanned downtime.

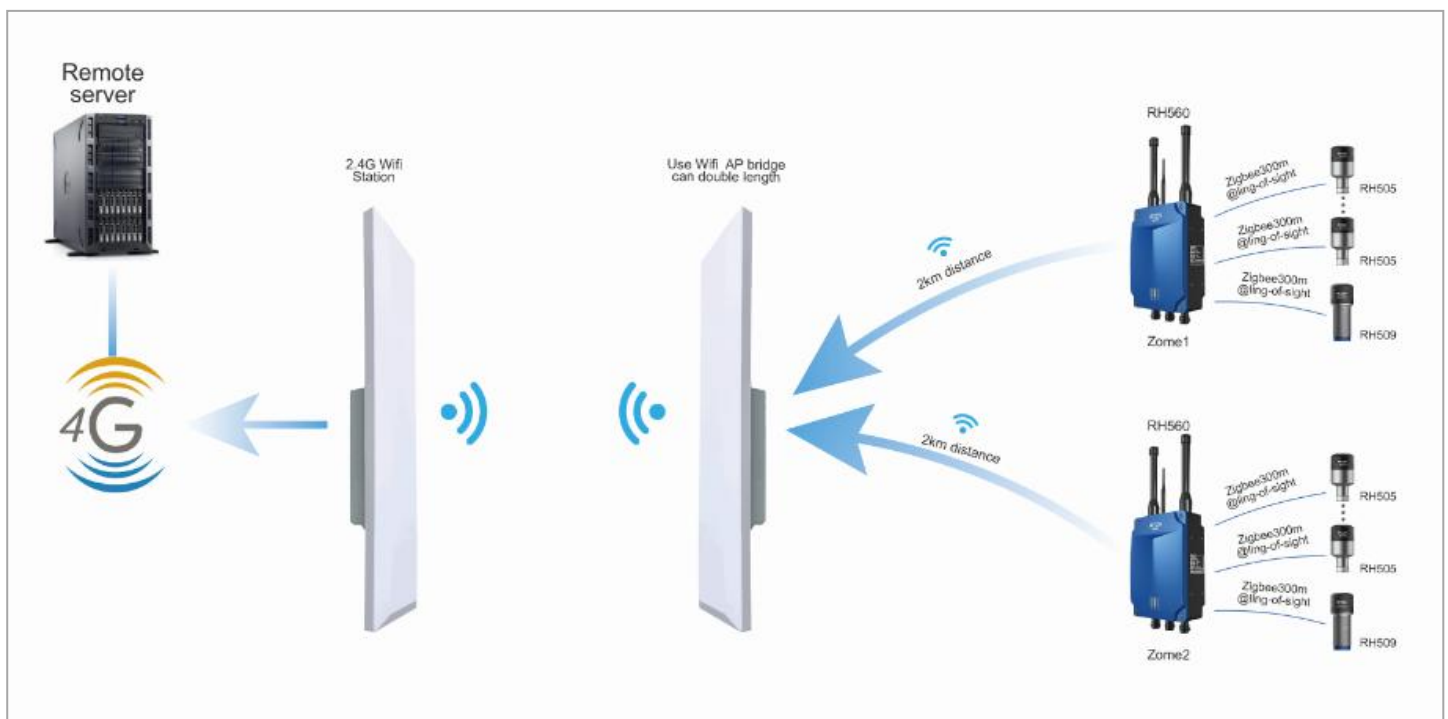
2. Wireless Condition Monitoring System Topology



2.1 Wireless solution 1



2.2 Wireless solution 2



2.3 Wireless solution 3



3. System features

Intelligent data acquisition and processing

With IWMS and pre-set DAQ strategy, complete data acquisition, processing and transmission of machines' vibration signal(acceleration, velocity and displacement)and temperature signal, achieve unmanned monitoring, and ensure machine safety and continuous running

Synchronous acquisition and analysis of temperature and vibration data

RONDS IWMS synchronously collects temperature and vibration signal, it increases machine safety through dual monitoring of vibration and temperature data.

Intelligent alarm for abnormal machines

Adopting various kinds of alarm parameters: overall value, index(available in Synchronous version), temperature, etc., ensure the accuracy and timeliness of alarm information

Convenient installation

RONDS IWMS has no signal cable during installation, 2 years battery life of wireless accelerometer, secure installation of accelerometer with magnet base and M6 bolt. Satisfy the requirement of explosion proof degree on site

Four in one sensor--vibration and temperature integrated sensor

Integrated design, synchronous collection of acceleration, velocity and displacement and temperature

One key upgrade of hardware and software

One key remote upgrade, system upgrade is quick, accurate, efficient and convenient.

4. Hardware introduction

4.1 Wireless vibration and temperature sensor RH505



Internally acceleration and temperature sensor, collect velocity, acceleration, displacement and temperature signals simultaneously. The vibration signal can be displayed as spectrum waveform in software.

Zigbee communication, for on site use specially, strong anti-jamming capability, 300 meters transmission from data collector.

Φ42mm*h65mm, small volume, easy to fix and maintain.

Low battery consumption design, collect data by every two hours, sustainable work for 2 years or longer.

Intelligent self-inspect function, warning for abnormal any time, saved time to check on site.

Exia II CT4, can be used in 0 area, IP67, waterproof, dustproof.

RH505 Wireless Vibration and Temperature Integrated Sensor	
Vibration Measurement Parameter	
Vibration Range	±50 g
Linearity	1%
Frequency Range (±3dB)	2~15kHz
Temperature Measurement Parameter	
Temperature Range	-40~125 °C
Temperature Accuracy	±1 °C (-40°C~125°C)
Electrical and Structure Parameter	
Power Supply	Lithium - thionyl chloride battery, 3.6V, 3.3Ah
Communication Method	2.4GHz IEEE 802.15.4
Dimension	46 mm × 94 mm (Diameter * Height)
Weight	188 g
Environment Parameter	

Working Temperature	-40~70 °C
IP grade	IP67

4.2 Wireless speed sensor RH509



RH509 Wireless Speed Sensor		
Performance Parameter		
Speed Measurement Range		60~3000 RPM
Speed Measurement Accuracy		60~3000 RPM ±0.5 RPM
Response Distance		17 -19 mm
Electrical and Structure Parameter		
Power Supply		Lithium - thionyl chloride battery, 3.6V 2.4Ah
Communication Method		2.4GHz IEEE 802.15.4
Dimension		37 mm × 94 mm (Diameter * Height)
Weight		85 g
Mounting		Fixation through holder
Environment Parameter		
Working Temperature		-20~70 °C
IP grade		IP67

4.3 Wireless data collector RH560



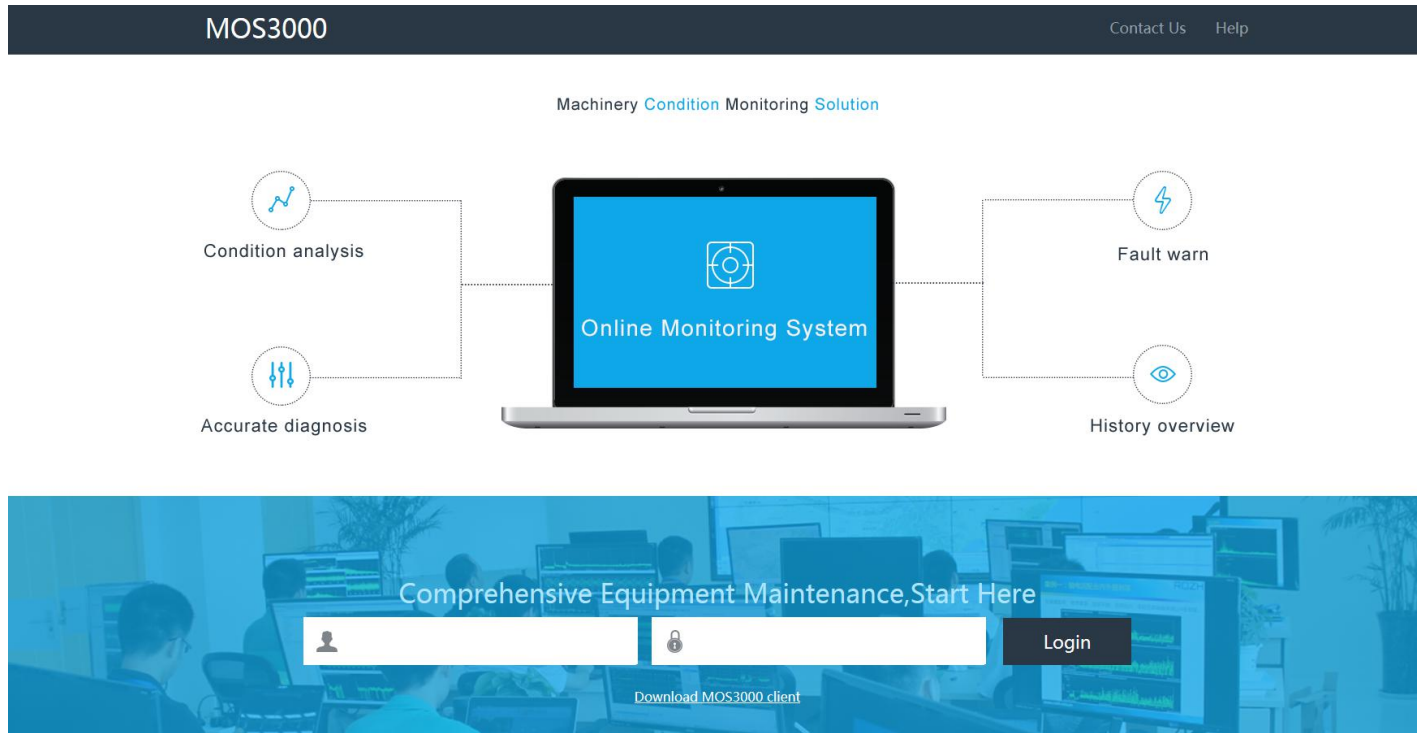
3G/4G, optical or network data transmission.

Anti-explosion design(ExdIICT4), suitable for ZONE 0, ZONE 1 and ZONE 2

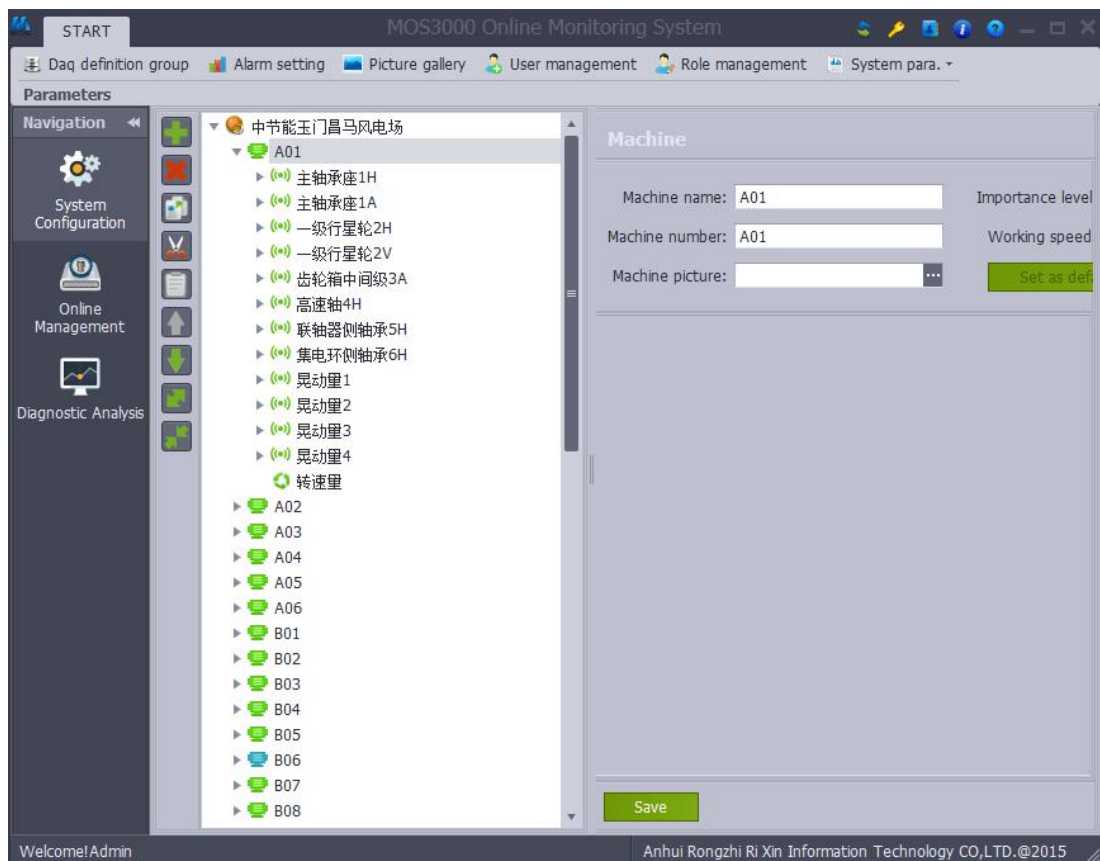
RH560 Wireless data collector	
Input and output	
Communication with Sensor	2.4GHz IEEE 802.15.4
Indicator LED	Total 3 pieces (working, communication, abnormal status)
Maximum Number of RH505 connecting	60 unit
Electrical and Structure Parameter	
Power Supply	220V AC or Lithium - thionyl chloride battery 3.6V 38Ah
Dimension	203 mm × 82 mm × 260 mm (Length * Width * Height)
Weight	3 kg
Mounting	Hanging or fixation through holder
Environmental Parameter	
Working Temperature	-40~70 °C
IP grade	IP66

5. MOS3000 Software feature

5.1 Webpage, can view machine condition anytime, anywhere.



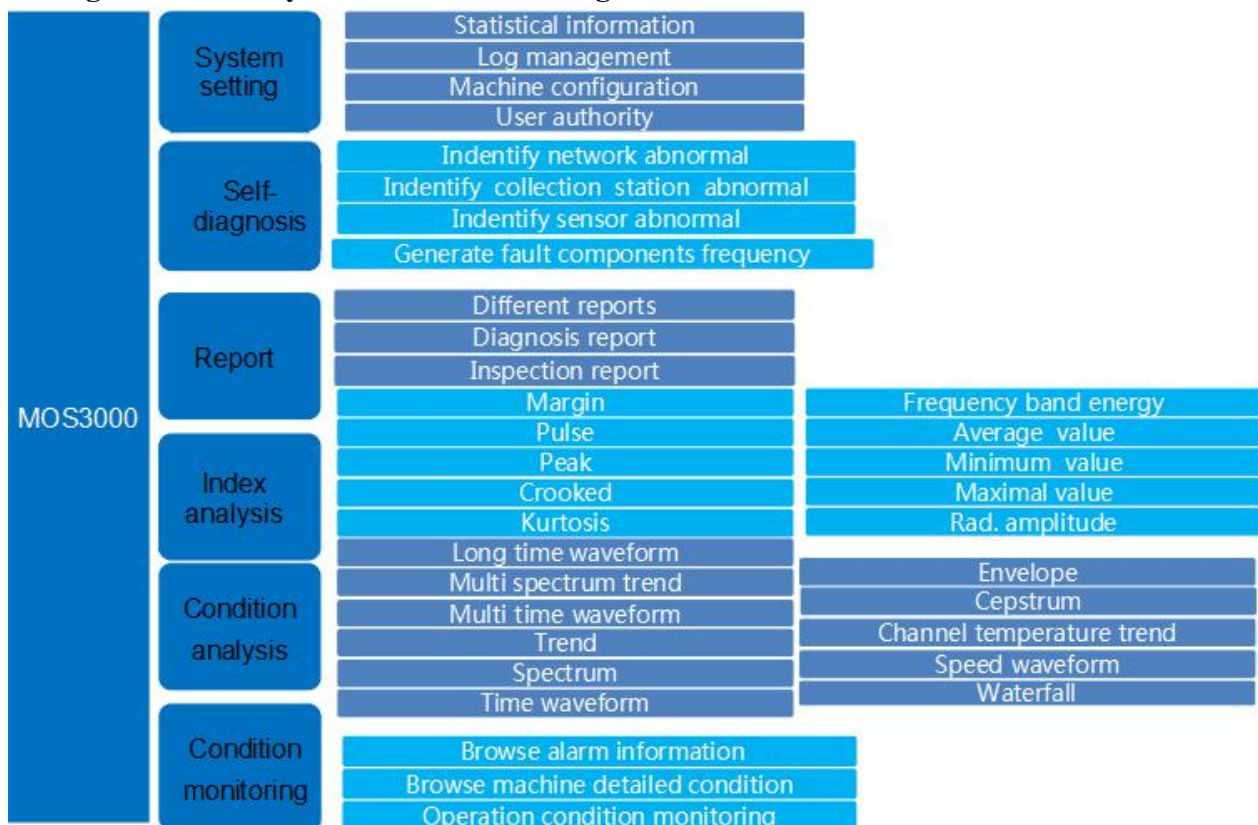
5.2 Tree structure, Easy to check by administrators



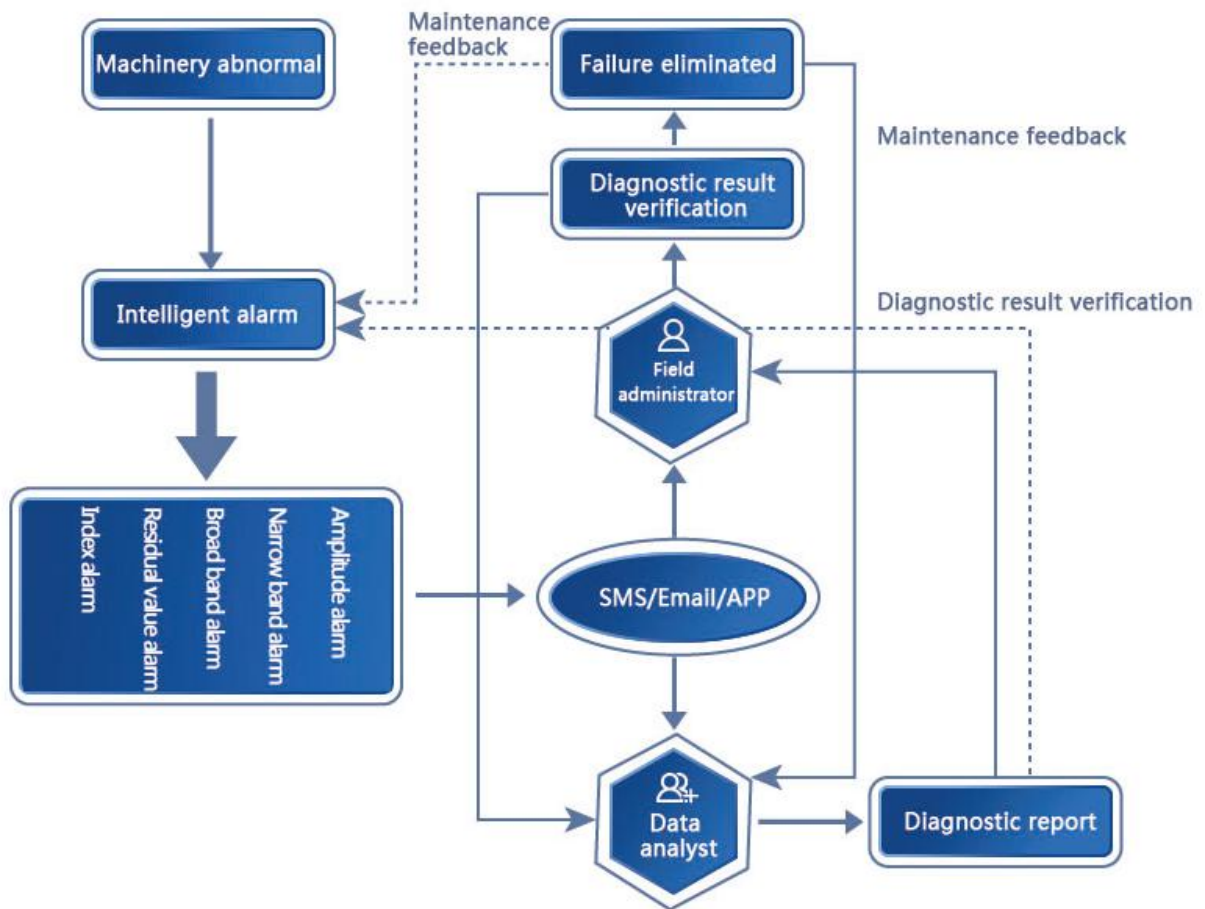
5.3 SMS/Email A, learn condition anywhere



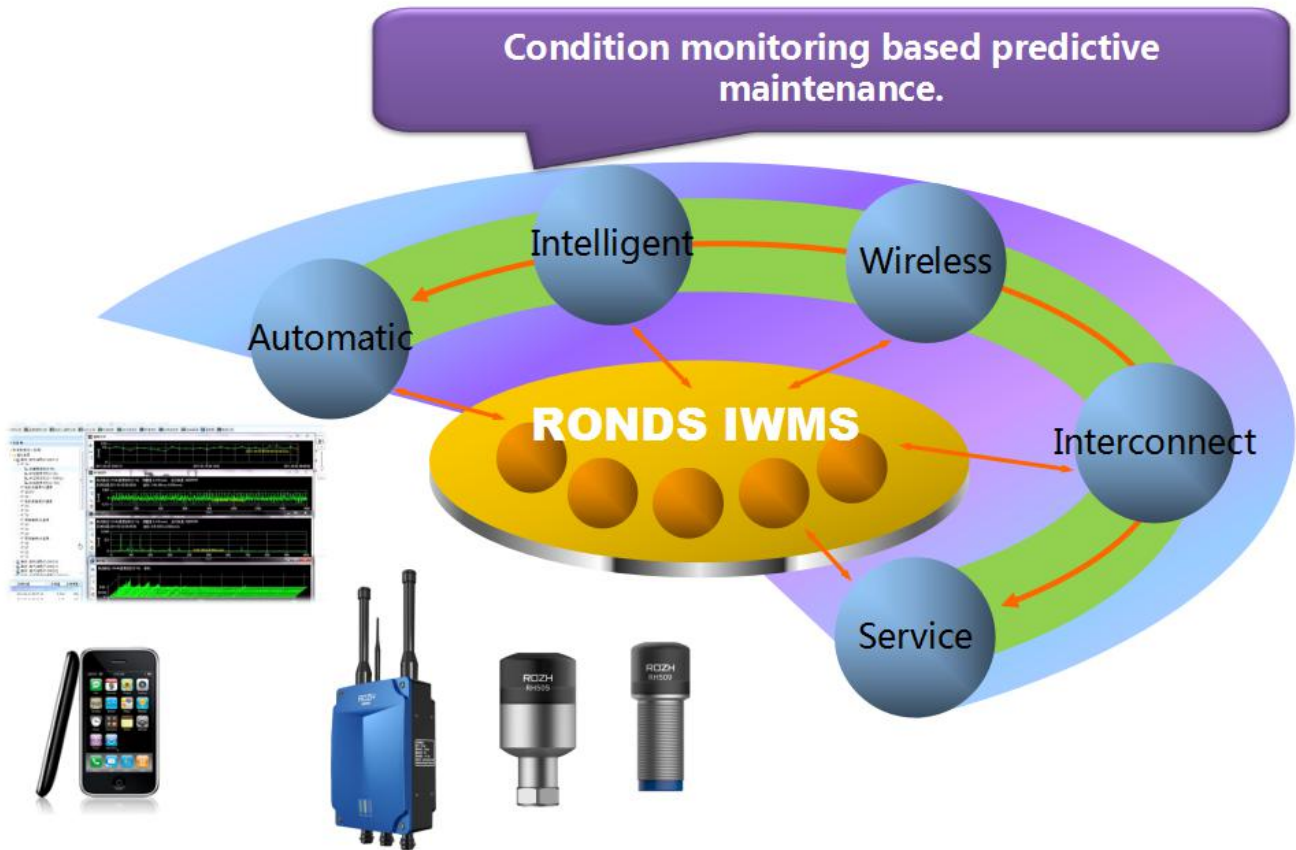
5.4 Intelligent Machinery Condition Monitoring Solution



5.5 Intelligent alarm and response system



6. System advantages



7. A complete unit system contains:

- 1 pc data collector RH560
- 2 pcs data collector antenna
- 1 pc disk with MOS3000 and user manuals
- n pcs wireless vibration and temperature sensor RH505
- 1pc wireless speed sensor RH509
- 1 pc Certificate of approval
- 1 pc Warranty card



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