



1
No.

**In Driving
Technology
in China**

UAES

LIUZHOU PLANT

联合汽车电子有限公司

柳州分公司

UAES

41%

Robert Bosch GmbH



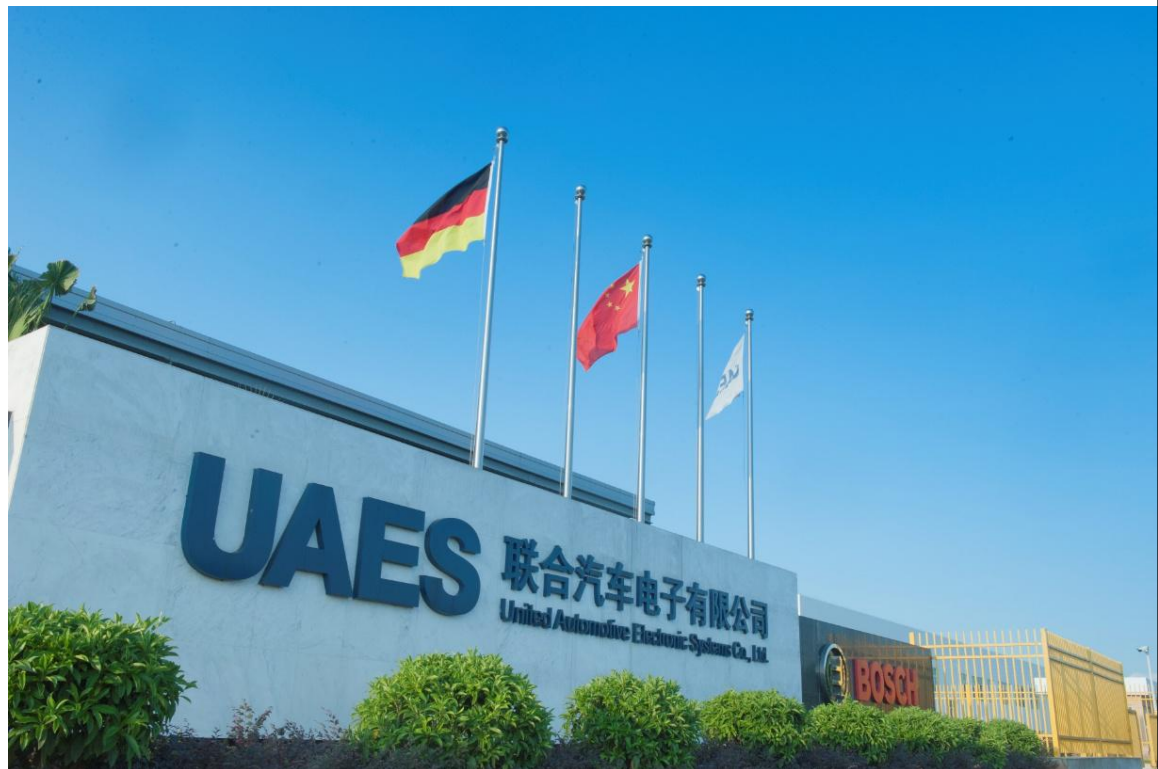
**Zhong-Lian Automotive
Electronics Co., Ltd.**

49%

10%

**Bosch (China)
Investment Ltd.**

Plant Vision Location



1. Plant Vision & Location | LzP Location

工厂建成时间 Establishment	一期 /1 st Phase: 2015.11 二期/ 2 nd Phase: 2018.07
占地面积 Land area	一期 /1 st Phase: 40,020m ² 二期/ 2 nd Phase: 41,728m ²
车间面积 Floor space	一期 /1 st Phase: 5,292m ² 二期/ 2 nd Phase: 15,120m ²
人数 Headcount	2019: 1,243 (CF04) 2025: 2,482 (PDS)
主要产品 Main products	•ECU,BMS •TCU •Body Electronics •Fuel Rail Assembly •Fuel Pump Module



Vision / **UAES/LzP** Best & Preferred Automotive Supplier in South – CHINA

Safety & Quality 1st
Competence Building

BPS Essentials
Problems Solving Capability

Organization Development
Floor Layout Planning

Plant Growth by Relocations

Motto /

BE a FASTER LEANER

Objectives /

- Safe launch EC/BE/TC products
 - Training & Analysis center set up
 - Mentor & Mentee coach by process
 - confirmation
 - Flow-oriented layout design
 - Full function plant (MOE, FEM, HRL, etc.)
- Transparent raw material & flexibility

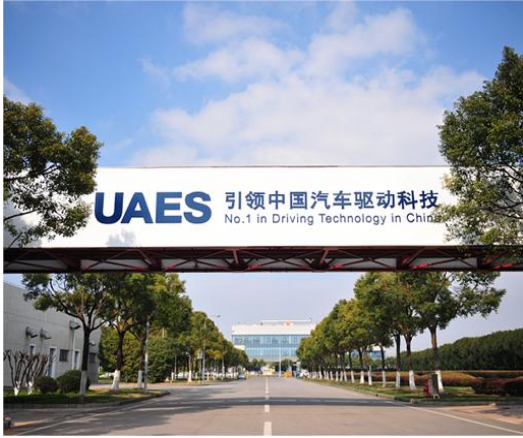


2. Plant Layout & Picture | Layout

— Layout —



2. Plant Layout & Picture | Picture



— Picture —



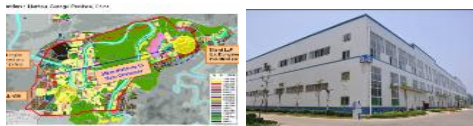
— Milestone —



3. Milestone

2011.05

- 选址, 柳东新区雅容工业园aB区12栋—2
Site searching ,Liu Dong new Industrial park B area No. 12



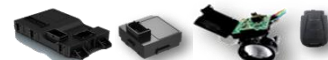
2013~2014

- EKPT P2平台产品实现供货
- ~~EKPT P2~~ MOTO生产线, 实现北美客户正式供货
MOTO Line SOP
- KSZ 第三和第四生产线批产供货
KSZ 3rd and 4th line SOP
- RKE 实现正式供货
RKE rel. SOP



2016

- BE BCM实现SOP供货
BCM2.0 SOP
- IMMO/BASE/RKE 转移项目SOP供货
IMMO, BASE, RKE SOP



2011



- KSZ x2 生产线实现SOP供货
KSZ Production line SOP
2x lines
- EKPT P5 平台产品实现供货
EKPT P5 platform SOP
1x line

2015.11

- 柳州一期工厂落成
LzP 1st Phase plant inauguration



2016.07

- ME788/1788 SOP供货
ECU(ME788/1788) SOP



3. Milestone

2018.08

- **Ford Gen2 SOP**供货
Ford Gen2 SOP
1st global product for BE



2018.09

- **二期落成开业**
2nd building opening



2019.1

- **BCM3.0, GAW3.0, CMC8.0 SOP**供货
BCM3.0 SOP
GAW3.0 SOP
CMC8.0 SOP



2019.12

- **BCM2.8/2.9, EPD SOP**供货
BCM2.8/2.9 SOP



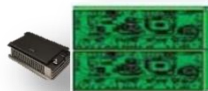
2017

- **ME788/1788 SOP**供货
ECU(ME788/1788) SOP
- **BCM2.x 转移项目SOP**供货
SOP of BCM2.x, incl. 11
platform rel. from ShP



2018.09

- **BCSU21 SOP**供货
BCSU21 SOP
PCBA for 1st BMS



2018.10

- **TCU2.5.5 SOP**供货
TCU2.5.5 SOP



2019.7

- **VCU8.0, MCU8.0/6.1, MSE8.0, GEM SOP**供货
VCU8.0 SOP
MCU8.0/6.1 SOP
MSE8.0 SOP
GEM BCM SOP



Products



4. Products | Products Overview and New Launches

Series Production

Engine ECU 电子控制器



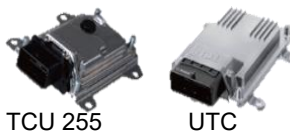
ME1788/788 ME17U6 MG1US008

Body Electronics 车身电子控制器



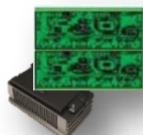
BCM Immobilizer Ford Gen2

Transmission Control 变速箱控制器



TCU 255 UTC

BMS 电池管理控制器



BCSU21

New Products 2018-2024.....



MED17.8.10 MCU8.0 VCU8 MSE8.0 EPD



GEM BCM BCM2.8, 2.9 GAW3.0 BCM3.0 BDU BLE PEPS

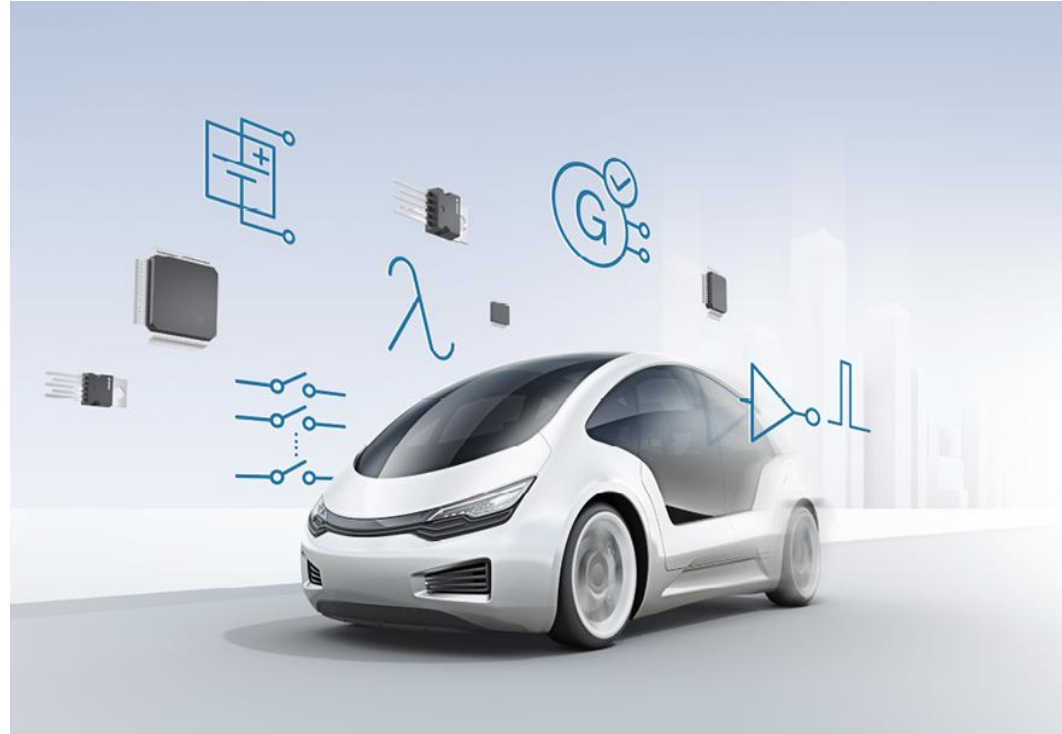


ATDG-81-9.1 ATDG-81-9.3 ATDG-81-9.5 HCD Punch



CMC8.0 BMC8.2 (BMCe) (CMCe)

Customer & Sales

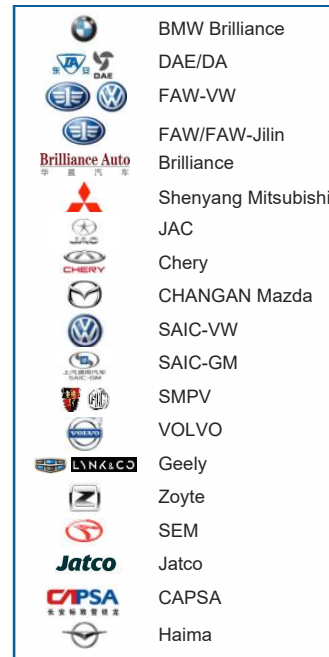
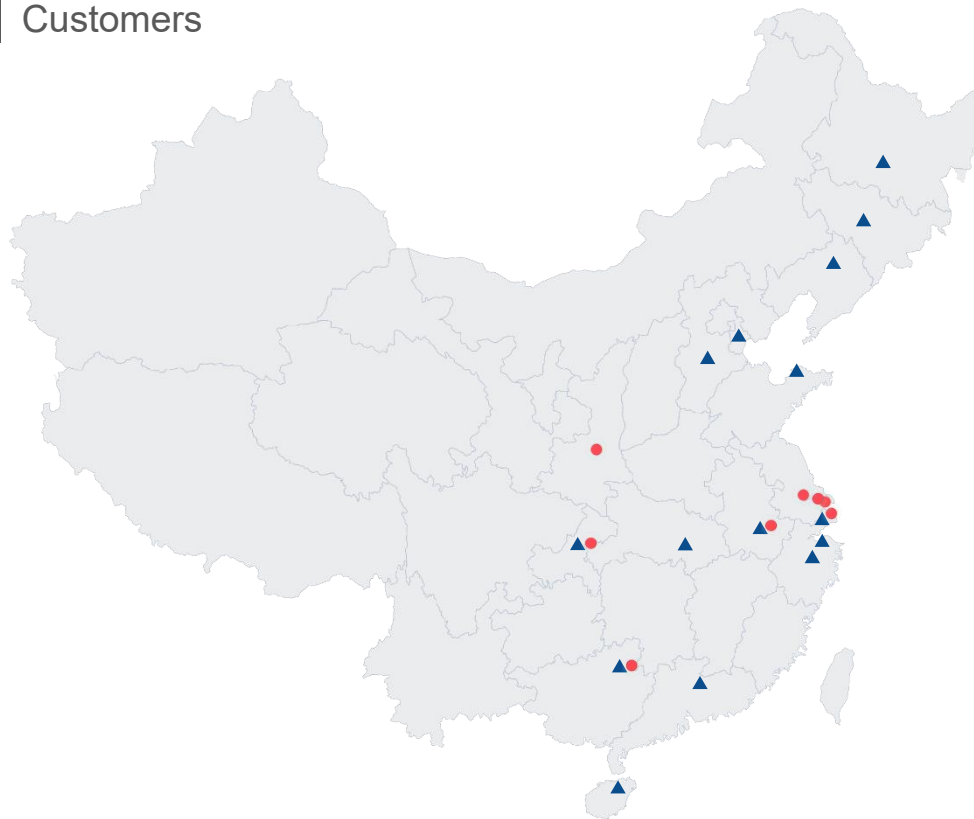


5. Customer and Sales | Customers



● UAES locations

▲ UAES resident office



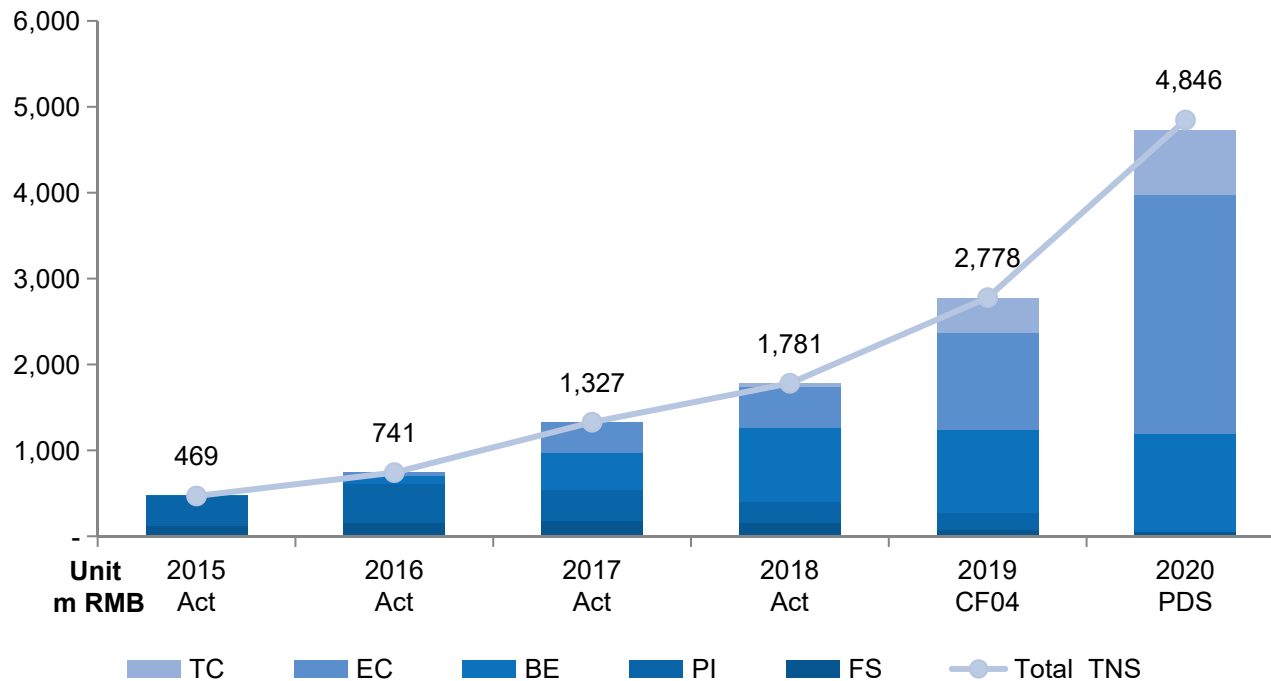
NEV OEMs



★ We also supply to **OEM**: XCE, Huatai, Hyundai, Dongfeng Yulong, Dongfeng Renault, Fiat, Qoros, CJLR, Fujian Benz, Huaxin, Zhongxing, Yuantong, Yema, Nanjun, Heibao, Shanxi-Tongjia, Changhe-Suzuki, Changhe Auto, WCM, JMH, Xiali, GAC-Changfeng, SG Auto, Guojin Auto; Transmission Manufacturer: SAGW, Volkswagen Automatic Transmission, WLY, Rongda, Shengrui;
Motorcycle Manufacturer: Jialing, Lifan, Chunfeng, QianJiang, Taiwan Kymco, Sanyo etc.

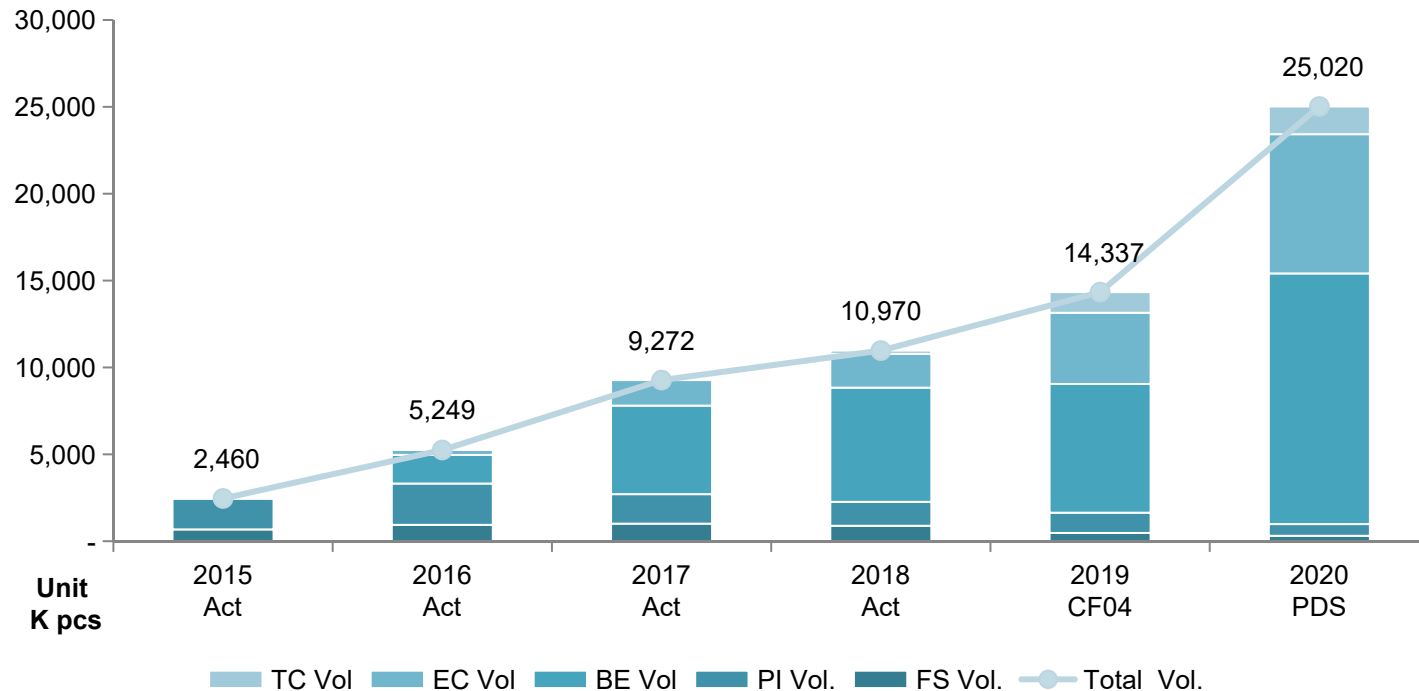
LzP TNS Overview

Unit: TNS m RMB & m pcs



Unit: TNS m RMB & m pcs

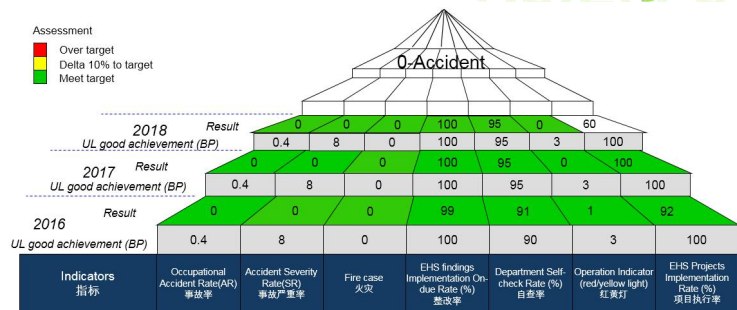
LzP Production Volume Overview



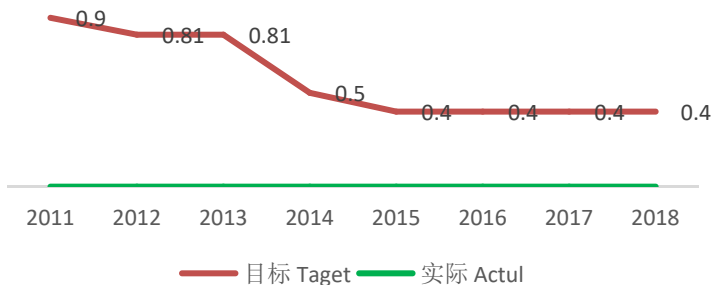
Safety Environment



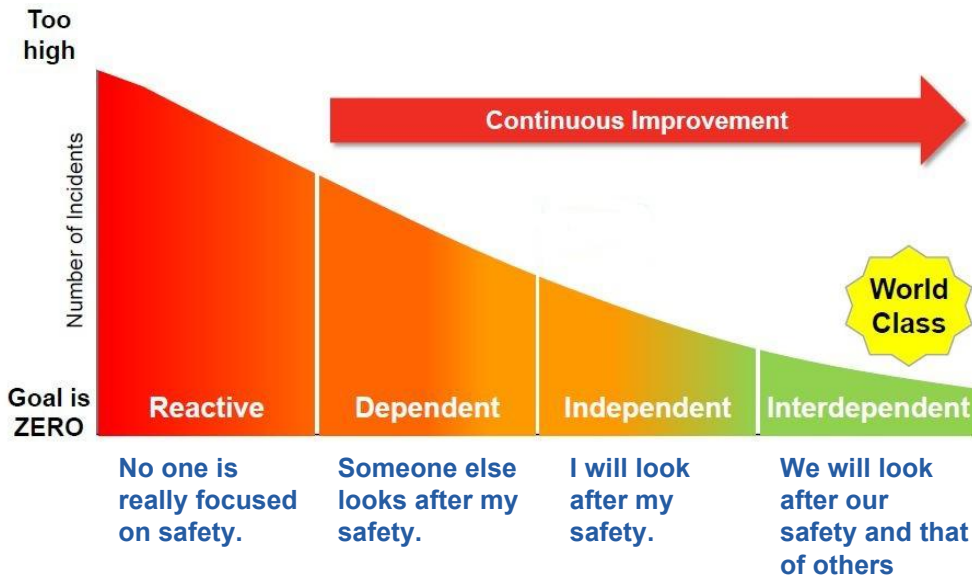
Safety as a UAES core activity



Reportable Accident per 1 Mio. Working hours





No reportable Accident happen since 2011



The Green Plant


UAES LzP



 **Energy** 

Reducing our energy usage will lower the amount of GHG emissions that are altering the climate

... ..

 **Water** 

Reducing your water usage can help you do your part in addressing the water scarcity issue facing our planet

... ..

 **Waste** 

Reducing, reusing and recycling products helps to divert waste from our landfills and reduce the amount of raw materials needed for the production of new products

... ..

6. Safety & Environment | LzP CO² Reduction Actions

UAES/LzP



Power Management

- Energy-saving during off-shifts
- Air conditioning control

Machinery & Equipment

- New MAE use;
- Cycle time reduction;
- New energy use (Solar)

Lighting

- Use the LED lights
- Switch off all unnecessary lighting

Fuel Usage

- More energy-efficient boilers

Heating & Cooling

- Air curtain
- Second door

Energy Recovery

- Air compressor heat recovery
- Boiler hot water reuse

Building Envelope

- Thermal film for windows
- Optimize the building leakage

— BPS & I4.0 —



7. BPS & I4.0 | BPS Plant Vision

System Approach

- Policy deployment
- S-CIP project
- Daily Gemba with management

Competence Building

- BPS Basic
- Pull and leveling
- WAS-SU/ -TL/ -OP
- Internal trainer development

Standardization

- Standard SMC
- A3 report for S-CIP projects
- TPM/ C/O / Milkrun and PoUP/ 5S

BPS Maturity

- BPS essentials for all VS
- Coach VS by self-assessment

BPS Method

Plant Vision

Best & Preferred Automotive Supplier
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1. Plant Vision & Location | Plant Vision

Vision / **UAES/LzP** Best & Preferred
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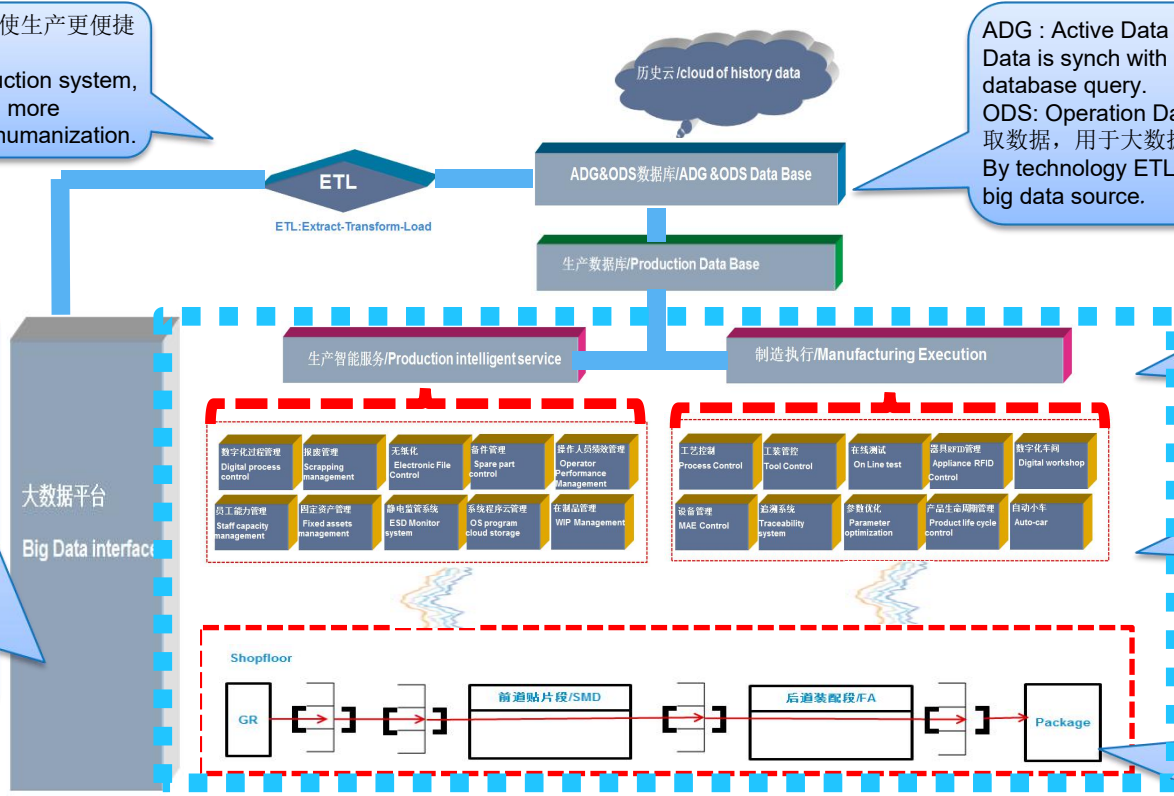
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7. BPS & I4.0 | Strategy of I4.0 in LzP production cloud

辅助生产系统,促使生产更便捷更人性化。
Subsidiary production system, make production more convenient and humanization.

通过大数据挖掘算法,计算分析生产相关数据,并预测趋势。
By data mining and algorithms of big data, calculate and analyze production data, and trend forecast.



ADG : Active Data Guard, 数据与生产库同步, 分担生产库查询压力。
Data is synch with production database, share part of production database query.
ODS: Operation Data Store,通过ETL技术, 从ADG数据库有条件抽取数据, 用于大数据数据源。
By technology ETL, conditional select data from ADG database as big data source.

管理和执行生产, 主要涉及工艺管控, 产品管控, 设备管控等。
Manage and implement production, mainly involve process control, product control, MAE control etc.

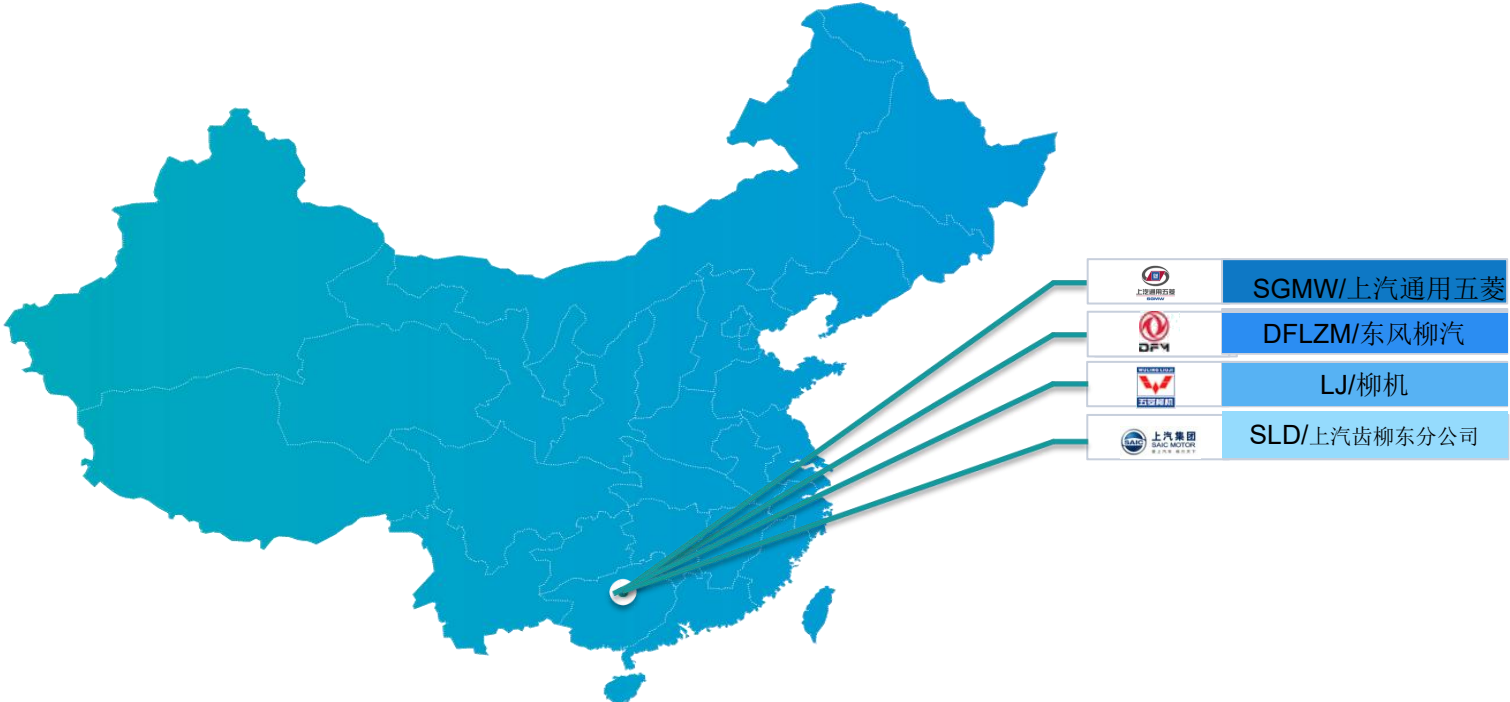
制造执行系统与设备信息交互, 数据采集, 决策控制。
Information interaction between manufacturing system and MAE, data collection, decision-making control.

通过大数据分析, 优化各系统功与设备功能, 达到数据采集, 数据分析, 生成措施, 实施措施的闭环控制。
By analysis of big data, optimize function of system and MAE, realize closed-loop : data collection, data analytical, make measures, implement measures.

— Technical Center LzP —



8. Technical Center



9. LzP Awards





No. **1**
In Driving
Technology in
China