Case Study

ITS Project in Shanghai

• More than 2000 illegal parking enforcement system delivered

• Illegal parking automatic detection • Widely deployed at main roads, bus

stations, surroundings of govern-

ment departments, hospitals,

schools

ITS Project in Thailand

- ANPR+ system, securing the main entries & exit of Phrae province
- Violation detection: over-speed, no seat belt, etc.
- Quickly locate suspect vehicles through license plate, car logo, model, car color and other features



ITS Project in UAE

- More than 1,500 ANPR cameras with high-speed radar deployed
- Strong adaptation under high temperature and dusty weather
- Speeding vehicles are fined, effectively reducing over-speed-

ITS Project in Suzhou

- Petrel vehicle big data application system starts in use in 2017
- Nearly 3,000 traffic violations within one week after system was implemented
- 184,000 cases on phone calling, 810,000 case on no-seat-belt in one year
- 142 cases on using fake number plate in one year



www.kedacom.com

131, Jinshan Road, New District, Suzhou 215011, P.R.China Tel: (86) 512 6841 8188 Email: international.sales@kedacom.com

Singapore

Headquarters) 627A Aljunied Road, BizTech Centre, #09- Groenhof 344, Amstelveen, 1186GK, Tel: (65) 6842 5700

Shenzhen

Room 1709 Building 3. Tianxia. feicuimingzhu, Jinji Road, Nanshan Tel: (86) 138 2886 0464

Netherlands

The Netherlands. Tel: (31) 020 640 1114

#1802 Daeryung Techno 15th, 401 Simindaero, Dongan-Gu, Gyunggi-Do, Korea 431062. Tel: (82) 31 386 3140

Turkey

Merkez: Besvol Mah. Cami Sok. No:14 K Cekmece / İstanbul Tel: 0(212) 220 55 50 (Dahili:103) Email: turkev@kedacom.com



KEDACOM

Intelligent

www.kedacom.com Tel: (65) 6842 5700 Email: international.sales@kedacom.com

System Overview

KEDACOM has been deeply involved in the transportation industry for 8 years. Rather, we have played a significant part in contributing to the construction of intelligent transportation in the major cities around the world with our advanced artificial intelligence technology, big data application and outstanding solutions. The distinctive solutions include traffic violation management, vehicle big data application, mobile law enforcement and intelligent transportation visualization. It was designed to fit around the practical work in the transportation department that can really help to solve all kinds of difficulties and pain points especially in road safety management.



www.kedacom.com Tel: (65) 6842 5700 Email: international.sales@kedacom.com

Intelligent Transportaion Solutions

Traffic Violation Management

More than 10% traffic deaths are caused by distraction such as phone calling, phone playing, and smoking. Not-wearing-seat-belts accounts for 50% traffic deaths. KEDACOM intelligent transportation solution provides various types of violation detections to help reduce the accident rate and the extent of the causalities.

Driver Behavior Analysis

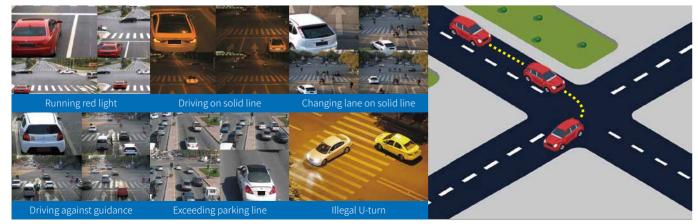
We provide various driver behavior detections, such as not-wearing-seat-belt, phone calling, phone playing, and smoking

- Millions of samples are used with the AI deep-learning algorithm, producing high analysis accuracy
- The function uses the ultra-low light technology at night, the brightness of KEDACOM LED light is only 1/3 of other companies' light, 1/5 of street light, able to detect the driver behavior without producing light pollution



Vehicle Violation Analysis

- Abundant vehicle violation analysis, such as over-speeding, running red light, driving against guidance, illegal U-turn, etc.
- Adopting advanced vehicle trajectory tracking algorithm, comprehensively take plate number and vehicle characteristics (color, size, type) into consideration to follow the trajectory of vehicle and achieve accurate violation detection



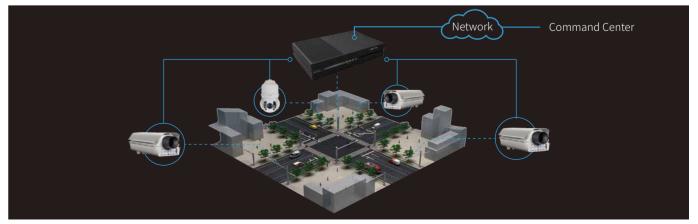
Illegal Parking Analysis

- Fully automatic capture without human intervention
- One illegal parking dome can monitor 4 non-stop areas by preset tour
- 70 degrees large angle, >100 meters long distance detection



Front-end Backup Storage

- \bullet Working at 70°C high temperature environment, one device can manage up to 16 ITS cameras on road
- Built-in 2T/4T/8T storage to save the violation picture and video
- Backup the data even network is down, auto uploading to the command center after network recovery



Big Data Application

Big Data Collection

ANPR + Data



- ▶ Basic vehicle info analysis, plate number, vehicle color, type, etc.
- ▶ Pictures of vehicle and drivers captured
- ▶ Saving network bandwidth and sharing performance stress



ANPR+ System

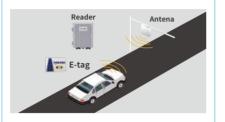
Second Analysis



- ► Advanced vehicle Info: sunroof, pendant. luggage racks, tissue box, dirty plate, etc.
- ▶ Driving behaviors: wearing sunglasses, watching phone, sun shield down, etc.
- ► Face capture



RFID Data



- ▶ Unique ID, non-removable E-tag
- ► Adopting RFID technology, high capturing
- ▶ Bus, taxi, truck, tanker, and other key vehicle monitoring
- Combined with camera ANPR technology, fake plate recognition







Big Data Storage & Management







- ▶ Big data management: comprehensive data dispatch and distribution for upper application
- ▶ Big data storage: PB level data storage, support high speed data written and visit







Big Data Application





Traffic Dept Service

- ► Area frequency analysis for unlicensed taxi detection
- ▶ Data collision among different locations for fake plate analysis

Transport Dept Service

- ▶ Road condition statistics for traffic congestion analysis
- ► Reason of traffic accident
- ► Traffic guidance for easing congestion

Public Security Dept Service

- ▶ Confirm suspect car: Feature retrieval, hidden vehicle analysis, vehicle acting at night, following vehicle analysis, etc. ▶ Find real info: search vehicle by picture, fake plate analysis, find real plate in
- ▶ Locating vehicle: path emersion, area frequency analysis, location analysis, etc. ► Control & capture: precise / fuzzy control, picture control, control & alarm, etc.

Mobile Enforcement

KEDACOM provides a full range of mobile products including body worn surveillance phone, body worn camera, vehicle PTZ camera, etc. With 4G image transmission, two-way intercom, real-time positioning, intelligent analysis and other functions. The mobile enforcement systems have been widely used for daily patrol, writing tickets and violation records retrieval, improving the initiative and effectiveness of mobile solutions for law enforcement.



4G Body Worn Surveillance Phone

- For writing tickets, violation records retrieval
- Customized safety dual system, one devide for work and private use
- Abundant accessories such as bluetooh printer, battery charger, ID verification



4G Body Worn Camera

- For protecting law enforcement officials and supervision on the legalisation and regulation of law enforcemnet
- Full recording, 4G image transmission
- One button alarm for emergency
- One button PTT for communication



4G Vehicle PTZ Camera

- For daily patrol, temporary monitoring
- All-around monitoring, 4G transmission
- Easy installation with 10 strong magnets
- 8~10 hours continuously working with built-in battery

Intelligent Transportation Visualization

KEDACOM intelligent transportation visualization system integrates all kinds of data information including video surveillance, traffic flow, traffic violation, TV news, and weather condition that the customers care about mostly and provides a direct, visual, graphical display.



Date / weather condition / TV news

Real time video of traffic conditions on the roads

Traffic situations

Reasons of accidents

Statistic for daily ranking on violations

Violation trends