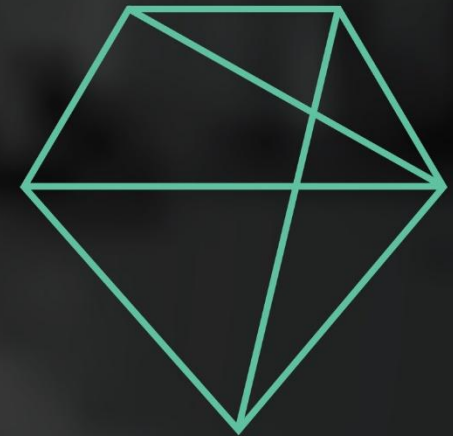


2018

UNISEM

Enhancing Your Security Operation



COMPANY OVERVIEW

ORGANIZATION
& IoT DIVISION



FINANCIAL OVERVIEW

IoT
UniTracer
UniAegis
UniTraffic

CERTIFICATIONS

UNISEM
since 1988

Employees

543 (in house R&D)

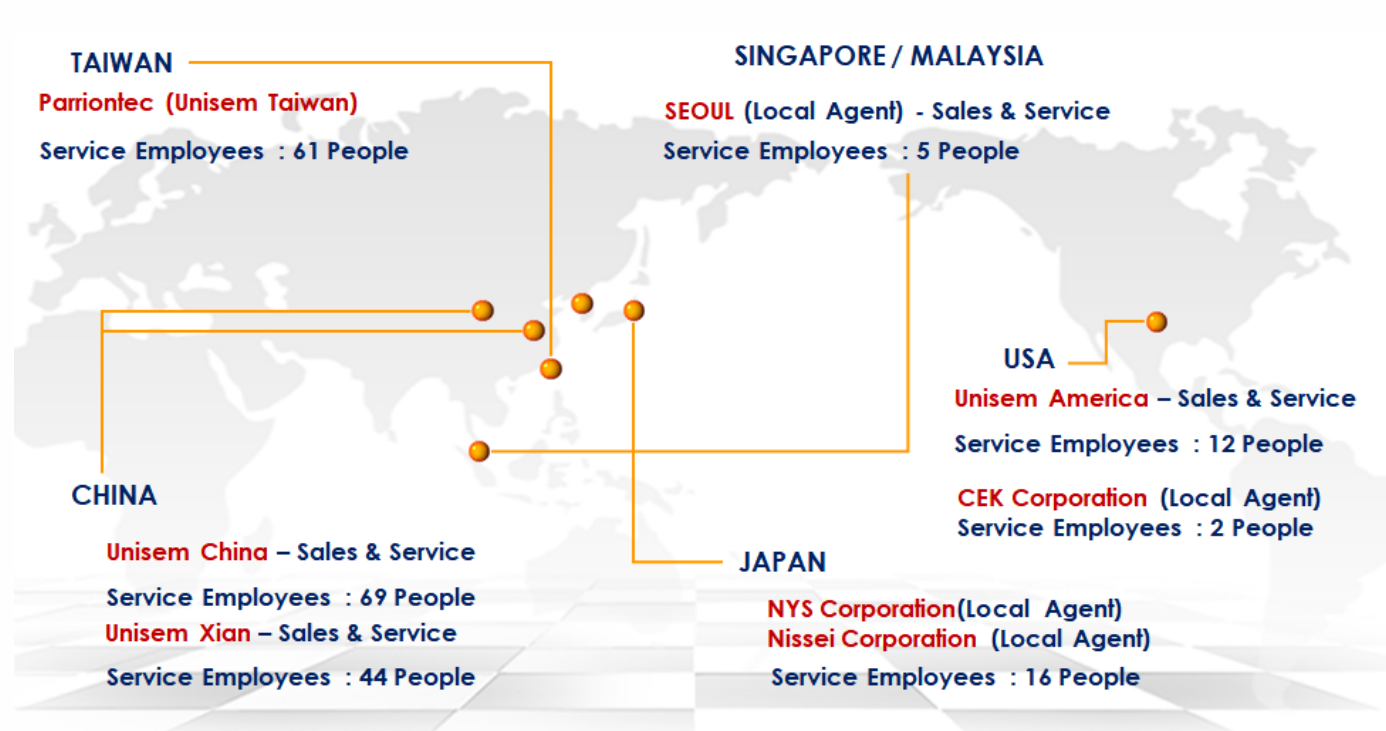
Sales

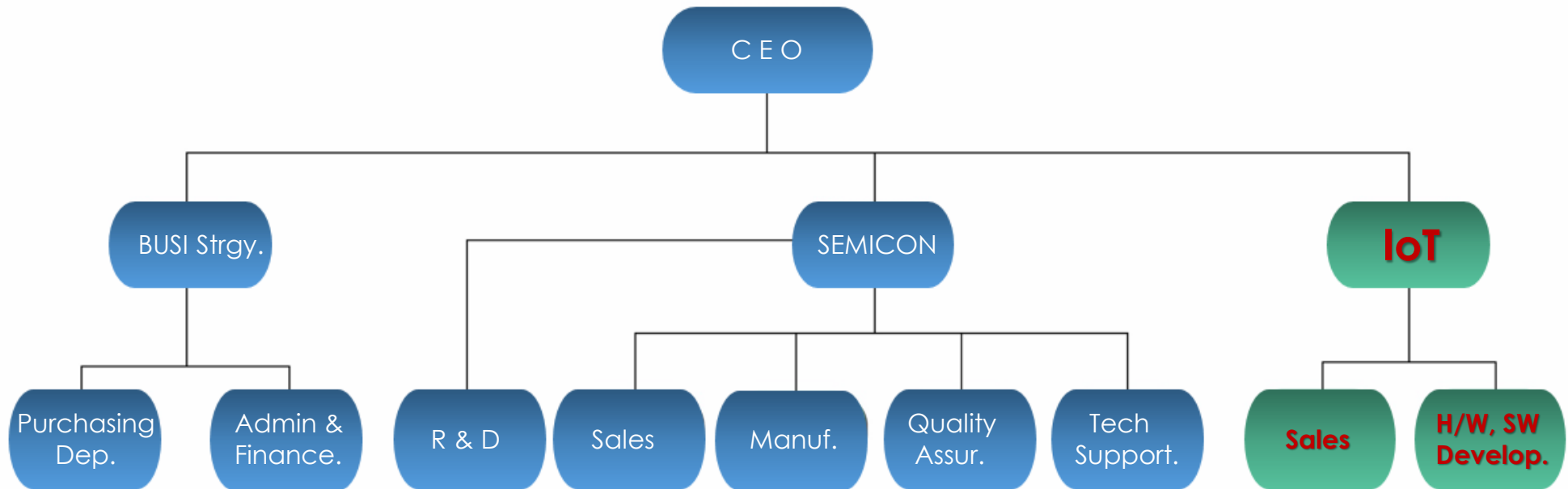
209 Millions (USD) [2017]

Major Clients

SAMSUNG, SK HYNIX, LGD, BOE,
CENTURY , PSC, TIANMA, SMIC,
TOSHIBA etc.

Global Offices



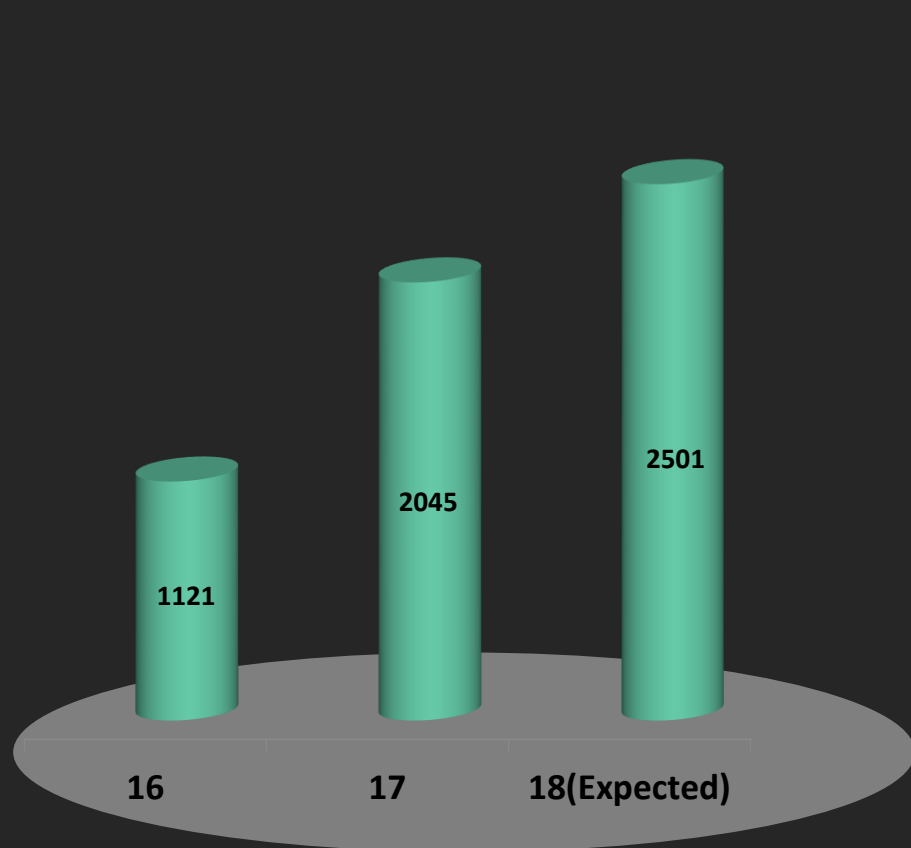


IoT division provides systems and services in the areas of smart security, smart logistics and smart traffic to leverage advanced IoT technology to provide safety and comfort to more people.

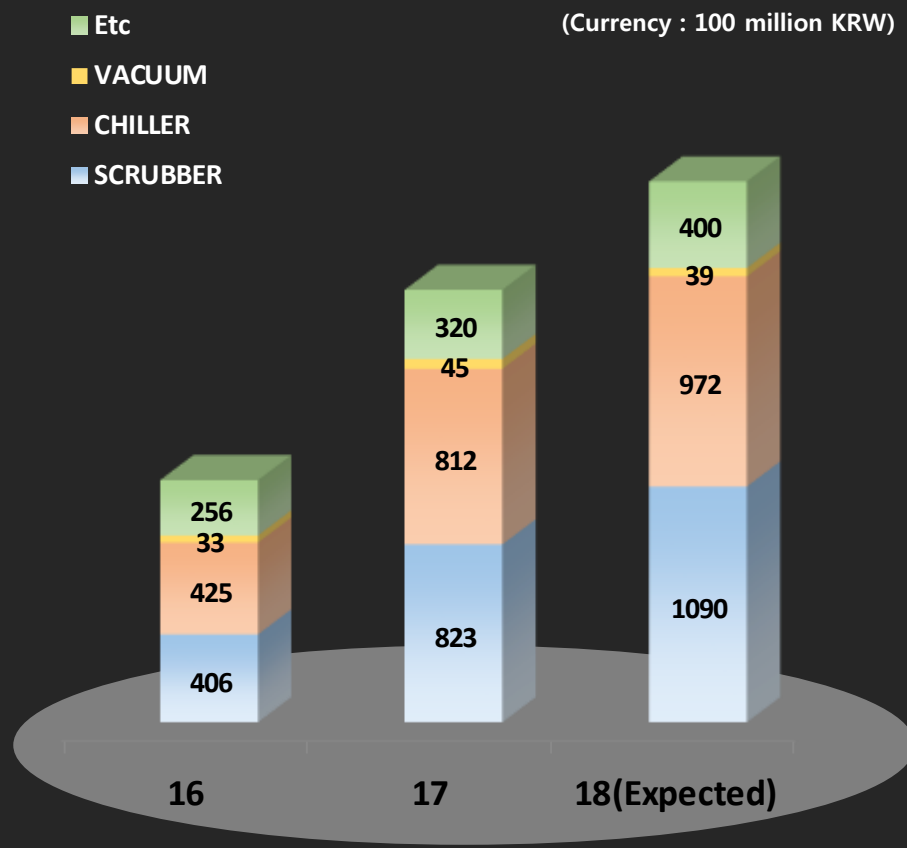




Financial Overviews



Year Sales



Year Sales per Item



Smart Logistics with UniTracer

Smart and Secure Tracking Solution provides any business or government organization with the information on the location, security and status in real time of their goods, assets and other high value resources. The tracking device represents an additional layer of security to ensure goods/assets reach their destination in the same condition as they began their journey.

UniTracer L100



Device Features



High-quality device

- ✓ Lightweight and portable
- ✓ Robust and Durable
- ✓ Waterproof

Electronic Seal

- ✓ Sensor wire lock

24/7 Secure Access

- ✓ Only authorized users can access device via NFC cards

GPS tracking (National and International)

- ✓ GPS Antenna with 10M Accuracy
- ✓ Galileo Satellite for high-precision positioning

Offline Tracking – WCDMA/GSM Network

- ✓ Absence of network coverage - all data is stored and maintained in the device

Long life rechargeable battery

- ✓ Operates 33 days on a single charge (USB port)

Warranty

- ✓ One year



Monitoring Platform Features



Geo-Fencing Enabled

- ✓ Pre-definition of desired route
- ✓ Including up to 10 landmarks per route

Alert Customizations

- ✓ Alerts via Email or SMS
- ✓ Multiple alert recipients
- ✓ Customization of alert frequency

Location Frequency

- ✓ Setup of location interval sampling

Real-time worldwide location tracking

- ✓ 24/7 platform access
- ✓ Access via laptop, PC, tablet and mobile devices

User Friendly Interface

- ✓ Supports Multi-Language
- ✓ Supports Multi-Timezone
- ✓ 3 Tier Privilege Levels

Export of record logs

- ✓ Including date and time of event, longitude, latitude, battery level, etc.

Customized Report

- ✓ Transport, event history and login analysis





Security

- ✓ **Authentication and access control:** only authorized users can access device via NFC cards
- ✓ **Geo-fencing:** user presets route to ensure no deviation from pre-planned route
- ✓ **Alert notification:** receive instant alerts by SMS/E-mail when cargo has been opened or tampered
- ✓ **Additional guarantee:** ensures safety and integrity of perishable goods, hazardous materials, sensitive cargo and high-value assets



Control & Flexibility

- ✓ **Shipment visibility:** user controls and monitors cargo's location in real-time (24/7)
- ✓ **Monitoring international logistics:** ensure tracking of transit goods across borders
- ✓ **Reliable and efficient scheduling:** improves dispatching and estimation of arrival time based on cargo visibility



Management

- ✓ **Monthly reports:** tracking logs can be downloaded and accessed online at anytime
- ✓ **Cost effective:** device can be reused multiple times and lowers insurance premium

Benefits



Application Areas



Expensive cargo & Police and military asset

- Efficient tracking and securing military cargo transportation such as vehicles, equipment, uniforms, weapons, munitions, food and medical supplies

Government, State or private bonded warehouses

- Geo-fencing capability, so if goods or container are moved the device will trigger an alert for a check of its status and security
- Device can be used as additional layer of security for specific valuable goods/assets

Seized drugs and counterfeit products

- Seized drugs are stored in evidence rooms for which the tracking system can be used as an additional layer of security

References



- **Ghana Board Transfer & Inland Transport**
- **Cote D'ivoire**
- **Uganda Inland Transport**



Smart Security with UniAegis

Smart Detection Solution is an electronic device for signal detection and tracking of MAC Addresses of wireless devices such as mobile phones, tablets, laptops etc.

This solution allows the continuous and real-time analytics of the, crowd patterns, mobility patterns in a large space at an effective cost, and the analyzed information creates various and valuable contents and security forecasting.





➤ UniAegis S100

Antenna : Dual Exterior Dipole Antenna
WLAN : IEEE 802.11b/g/n(2.4GHz)
Operating Temperature : 0~50°C
Device Size : 112mm x 25mm x 87mm, 150g
Certificates : CE, KC, RoHS

➤ UniAegis S200

Antenna : Built-in dual antenna + WCDMA 3G antenna
* external antenna can be added
WLAN : IEEE 802.11ac(5Ghz), a/b/g/n(2.4GHz)
Operating Temperature : 0~70°C
Device Size : 116mm x 92mm x 30mm , 200g
Certificates : CE, KC, RoHS



➤ UniAegis S300

Antenna : 3dBi Dipole Built-in dual antenna
WLAN : IEEE 802.11ac(5Ghz), a/b/g/n(2.4GHz)
Device Size : 124(W)x 206(D)x 76(H)mm
Certificates : CE, KC (TBD)
Camera : 2M Fixel, H/W based Face Detection, onVIF support,
Support Fixed/Motorized Lens

Device Features



RF

- ✓ High receiving strength
- ✓ Low RSSI fluctuation (< 2dBm)
- ✓ Customizing Antenna option
- ✓ Set RSSI value for setting detection area (10m, 30m)



Sensing

- ✓ Wi-Fi 2.4GHz & 5GHz dual or single sensing
- ✓ Perform as AP (router) and Wi-Fi sensing
- ✓ 3G/WCDMA and Ethernet cable support
- ✓ PoE support
- ✓ onboard GPS support

Mac De-randomization

- ✓ Plug & Play by using ACS server
- ✓ Remote reset and RF setting
- ✓ Monitoring remotely sensor operation status

Unique ID System for De-identification

Solution creates unique ID for each MAC address detected, therefore preventing double counting

Multi-range per device

- ✓ Setting of detection range per sensor enables analysis of visitor mobility within a given radius

Monitoring Platform Features



Detection

- ✓ Setting of detection range per sensor
- ✓ Setting access level per sensor



Analysis

- ✓ Register the list of all authorized smart devices and therefore allows detection of unauthorized devices

Monitoring

- ✓ Monitoring and tracking of Mac addresses anytime and anywhere
- ✓ Monitoring of crowd movement, patterns

Alerts

- ✓ Alert notification for unregistered devices

Reports

- ✓ Generation of reports and customized dashboards

Benefits



Detection

- ✓ Detection and analysis of crowd flow movement and patterns
- ✓ Detection of abnormal activities or unregistered user near a restricted area



Analysis & Monitoring

- ✓ Counting of people/visitors at a particular location
- ✓ Calculation of actual period of stay of people, dwelling time
- ✓ Detection of new/returning visitors
- ✓ Analysis and monitoring of mobility pattern in specific areas (tourism infrastructures, theaters, secured areas, malls, stations, stadiums, national events)



Forecasting & security measures

- ✓ Monitoring of suspicious movements to and within a building
- ✓ Allows decision making regarding the security level needed in specific areas during major rallies, demonstrations, concentration of people
- ✓ Improve citizen safety
- ✓ Forecast crowd mobility and behavioral patterns by comparing floor by floor footfall activity in major malls



Application Areas



- Airports and Ports
- Shopping Centers
- Tourist sites and Hotels
- Stadiums
- Banks and Financial Institutions
- Bus stations
- Manufacturing and Industrial Area
- Other restricted areas

References

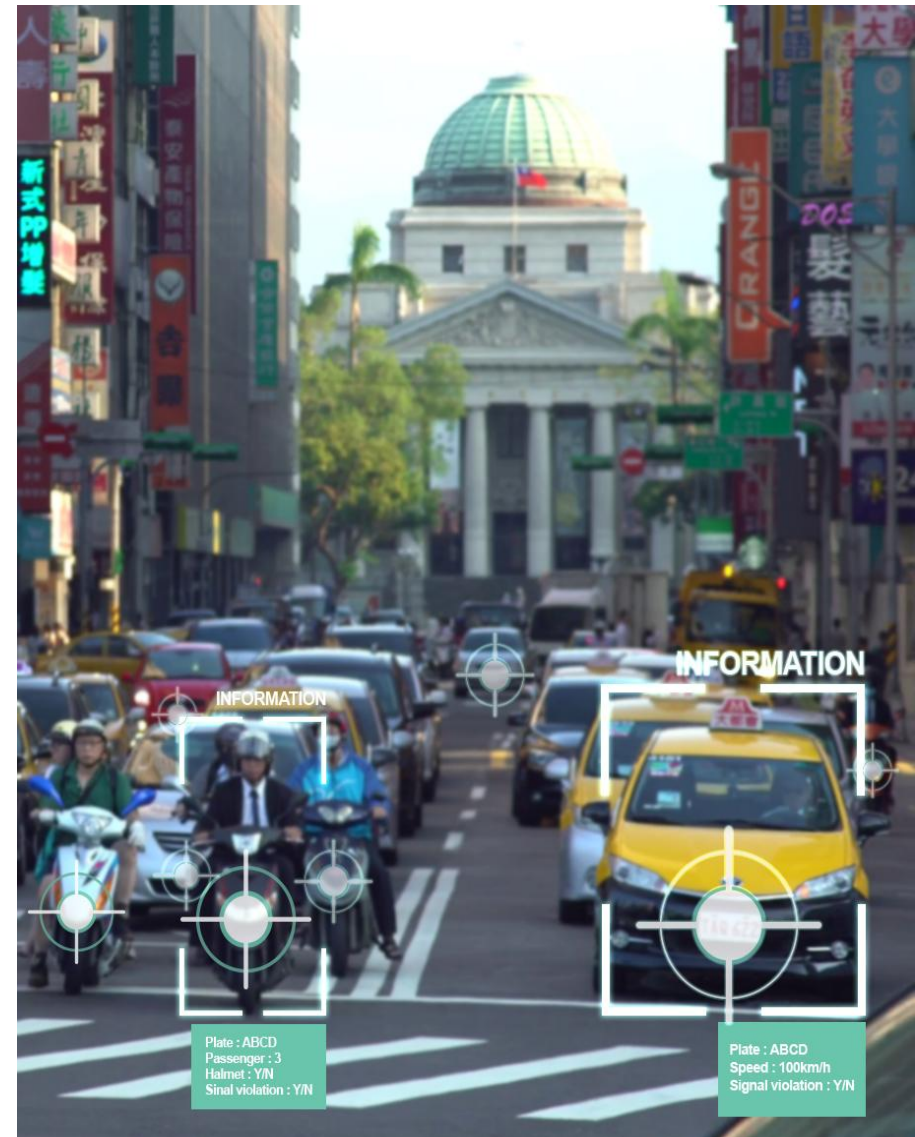


- **Metro Bus | TURKEY** – Passenger mobility patterns in Metro Bus
- **Korea Airport Corporation | SOUTH KOREA** - Passenger mobility patterns in Airport
- **Super Rapid Train | SOUTH KOREA** - Smart Station for mobility pattern
- **National Maritime College of Ireland | IRELAND** – Maritime Security and Safety
- **Rock Project | ITALY, MACEDONIA, PORTUGAL and UK-** Monitoring people movement pattern and safety improvement
- **Ajuntament de Barcelona | SPAIN** – Crowd Control and Tourist safety



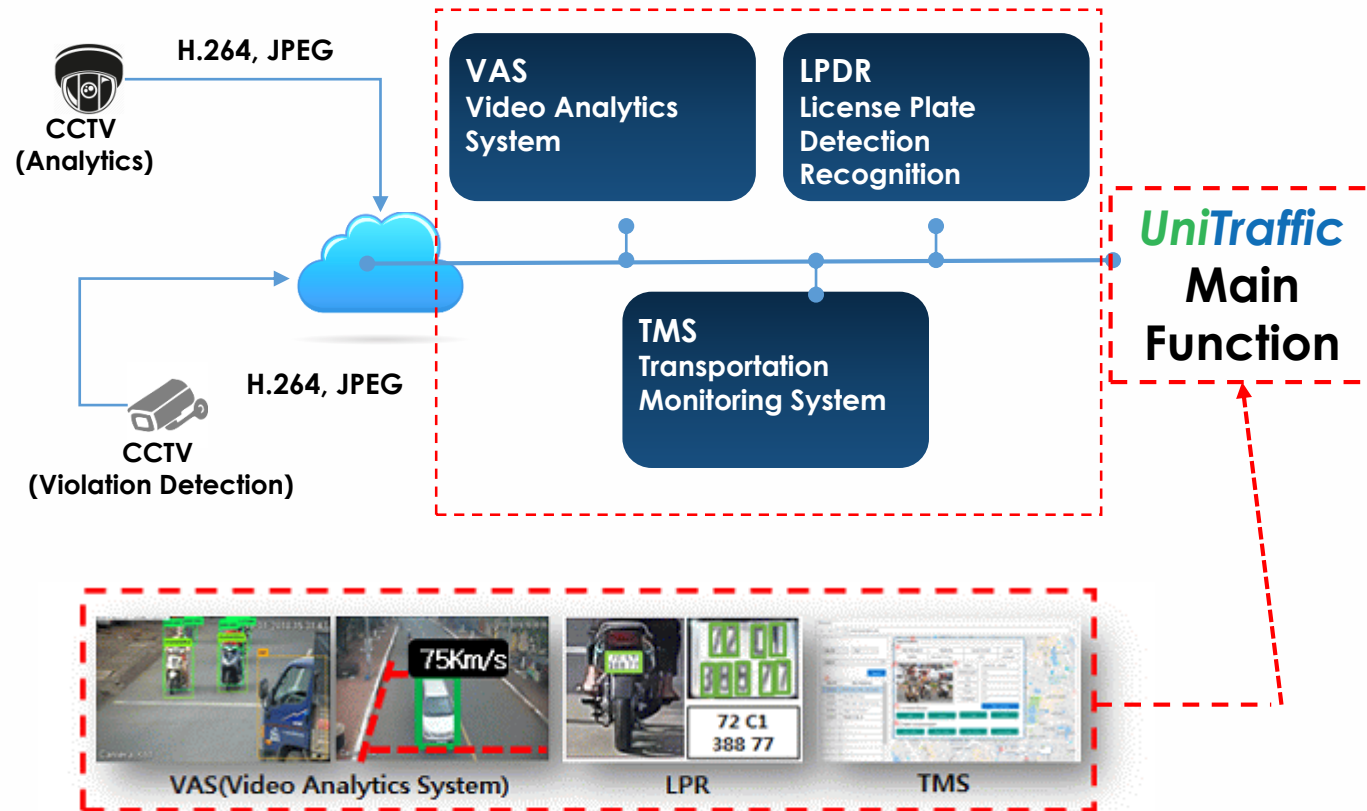
Smart Security with UniTraffic

UniTraffic provides intelligent traffic control solutions through object analysis and short range radar equipment business using LPR (Licensed Plate Recognition) technology and solutions. UniTraffic can manage traffic volume information and intermittent traffic on the road. The traffic rate, speed, and density DB are constructed by each vehicle road using the real-time radar vehicle detection data. Traffic information is monitored in real time at the center through a software program equipped with traffic analysis functions.



UniTraffic Solution Feature

Name	Features
VAS	Traffic analytics based deep learning system / Speed detection Tracking vehicles (car&motorcycle) and pedestrians / Helmet wearing detection
LPDR	Recognition of license plate based on deep learning technology Regardless of time of day (noon or night), license plate detection is possible
TMS	Reporting function of illegal vehicles Monitor traffic in real time using the online platform



VAS

➤ Video Analytics System

- Real time Multi object tracking technology
- Quickly analyze objects with high recognition accuracy rates
- 90% analysis accuracy of real-time multi object recognition technology
- Classification of 10 types of objects (Car, motorcycle, person, helmet, cap, head, etc.)
- New classifications can be added by adding learning functions
- Detection of traffic violation cases



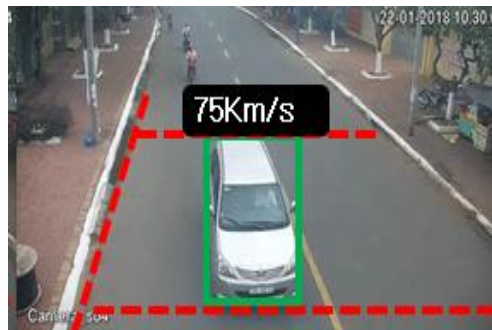
No wear helmet



Over persons



Line Violation



Speed Violation

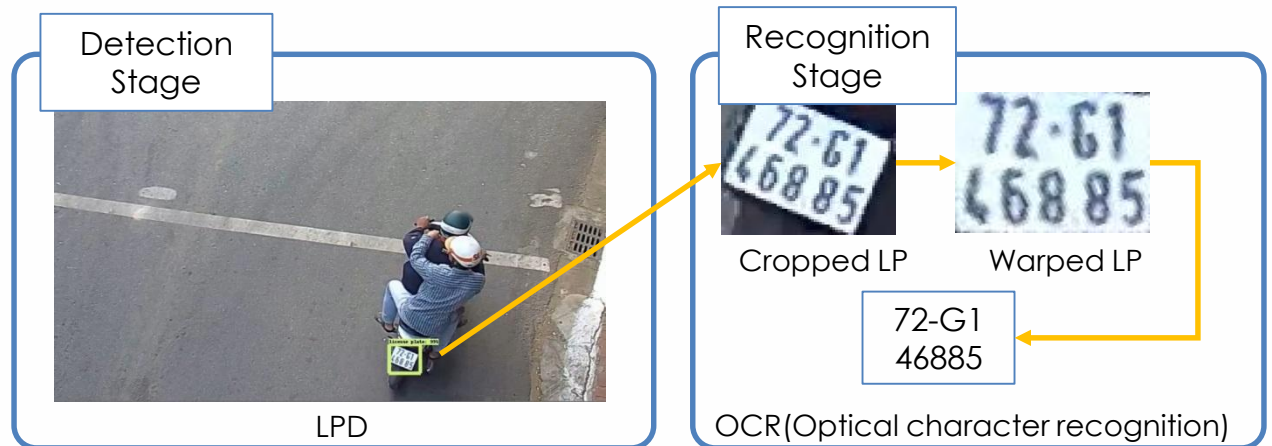
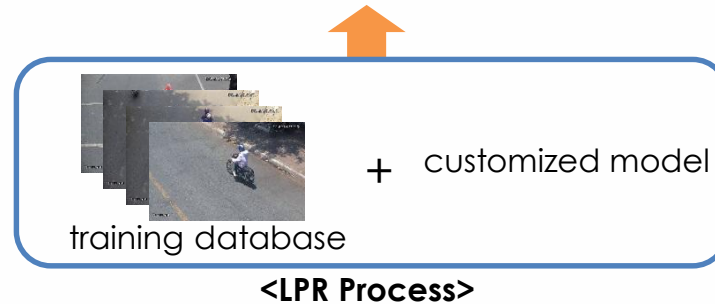
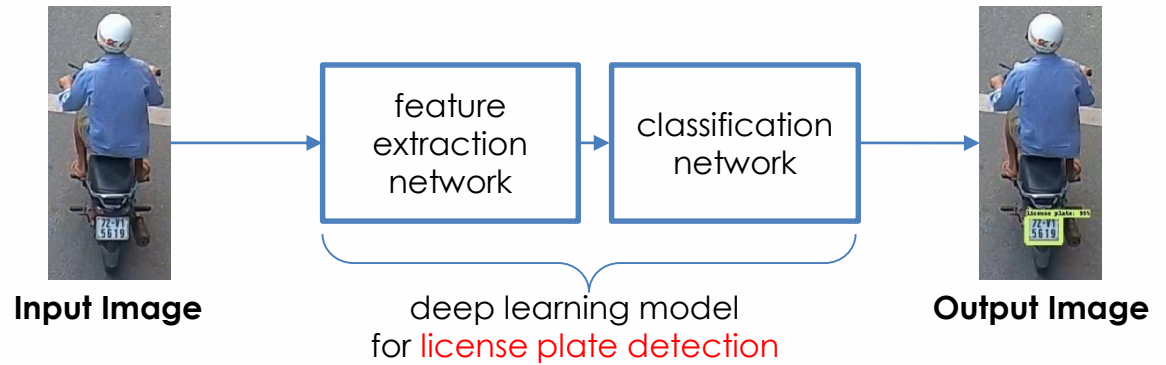


Signal Violation

LPR

➤ License Plate Recognition System

- Integrate with object recognitions technology based on AI and LPR
- Optimize Vietnam Traffic environment

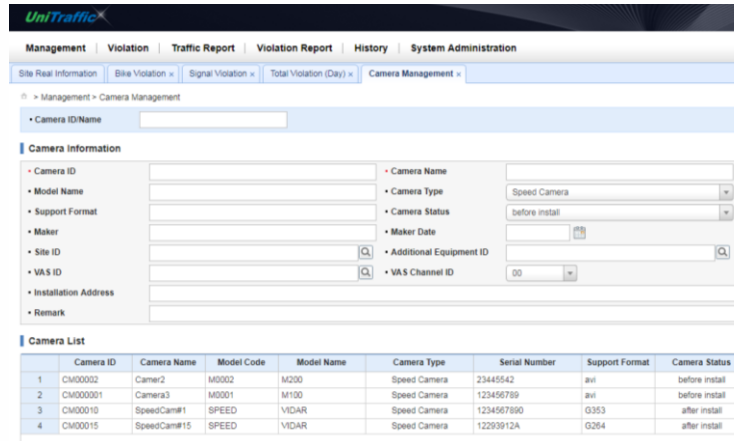


<Sample LPR process>

TMS

➤ Transportation Monitoring System

- Interface between Violation of VAS and LPR
- NVR connection for streaming view
- Traffic status monitoring in real time (Year / Month / Day/ Time)
- Monitoring for violation statistics
- Print Violation bill
- User management – assign local admin
- Traffic Facility and equipment management (CCTV, NVR. Pole etc.)
- Export Excel report



UniTrafficX

Management | Violation | Traffic Report | Violation Report | History | System Administration

Site Real Information | Bike Violation x | Signal Violation x | Total Violation (Day) x | Camera Management x

> Management > Camera Management

• Camera ID/Name

Camera Information

• Camera ID: • Camera Name: • Camera Type: • Camera Status:

• Model Name: • Camera Type: • Camera Status:

• Support Format: • Camera Type: • Camera Status:

• Maker: • Camera Type: • Camera Status:

• Site ID: • Additional Equipment ID: • VAS Channel ID:

• VAS ID: • VAS Channel ID:

• Installation Address:

• Remark:

Camera List

Camera ID	Camera Name	Model Code	Model Name	Camera Type	Serial Number	Support Format	Camera Status
1	CM00002	M0002	M200	Speed Camera	23445542	avi	before install
2	CM000001	M0001	M100	Speed Camera	123456789	avi	before install
3	CM00010	SpeedCam#1	SPEED	Speed Camera	123456789	G353	after install
4	CM00015	SpeedCam#15	SPEED	Speed Camera	12293912A	G264	after install

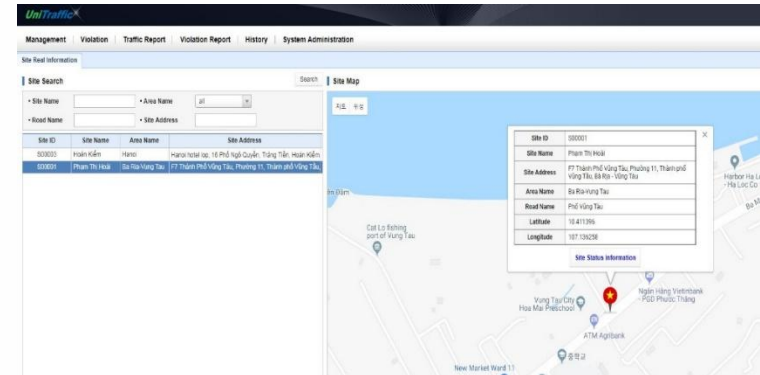



ID / PASSWORD LOGIN

User ID:

Password:

Login



UniTrafficX

Management | Violation | Traffic Report | Violation Report | History | System Administration

Site Real Information

Site Search

• Site Name: • Area Name: • Site Address:

Site ID: Site Name: Area Name: Site Address:

Site ID: 000001 Site Name: Phan Thi Hieu Area Name: Hanoi Site Address: Hanoi Total pop. 10 Phai Nghi Quan Trang Tien Hieu Hieu

Site ID: 000001 Site Name: Phan Thi Hieu Area Name: Bà Rịa Vũng Tàu Site Address: 17 Thành Phố Vũng Tàu, Phường 11, Thành phố Vũng Tàu

Site Map

Site ID: 000001

Site Name: Phan Thi Hieu

Site Address: 17 Thành Phố Vũng Tàu, Phường 11, Thành phố Vũng Tàu, Bà Rịa - Vũng Tàu

Area Name: Bà Rịa Vũng Tàu

Road Name: Phố Vũng Tàu

Latitude: 10.411395

Longitude: 107.128258

Site Status Information

Ngân hàng Vietcombank
 PGD Phước Thới

ATM Agribank

New Market Ward 11

Benefits



Cost Down

- ✓ All existed camera can apply to **UniTraffic** solution
- ✓ Do not need to purchase equipment for **UniTraffic** solution
- ✓ No need construction for applying to solution



Customization

- ✓ Enable to operate for local traffic environment
- ✓ Deep Learning AI technology
- ✓ Customizing violation detection technology



Accuracy

- ✓ Sole helmet detection technology
- ✓ Object accuracy is higher than 90%.



Independency

- ✓ Do not need to use camera API information
- ✓ Easy to connect camera through rtsp.
- ✓ Various camera manufactures can be applied



Application Areas



- High market motorbike share countries such as Vietnam, Indonesia, Thailand, India
- Highway traffic management system
- Bicycle road – bicycle speed and traffic analytics
- Visitor analytics – analytics visitor in public facility and tourist attraction
- Safety area – Detection of vehicle in safety area and speed detection

References



- Vietnam Vung -Tau PoC

Certifications

Test Report issued under the responsibility of: ETEC Co., Ltd. 42, Yutim-ro, 154 Beon-gil, Chiksan-gu, Yangju-si, Gyeongju-do, 712-940, Korea, Republic of	
	
TEST REPORT EN 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number.....	DRCELT-110-1668
Date of Issue.....	2015-11-17
Total number of pages.....	63 pages
Applicant's name.....	UNION Co., Ltd
Address.....	152-1, Janghwa-ro, Dongtan-myeon, Heungju-si, Gyeongju-do, Korea (41010)
Test specification.....	
Standard.....	EN 60950-1:2006 + A11:2009 + A1:2010 + A2:2011 + A2:2013
Test procedures.....	DEIM-AMP-025
Non-standard test method.....	N/A
Test Report Form No.....	HC000950_1F (ETEC Co., Ltd. 2014-02-20/10412)
Test Report Formly Originator.....	S&S Finlec Ltd (ETEC modified on 2014-11-20)
Warranty Term.....	24hr 2014-04-12
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Test item description.....	etec
Trade Mark.....	
Order is apparent.....	Yes
Model/type reference.....	Unihotter V-150(C)
Rating.....	6W; 2.0 A
If this test report is required to conform to authenticity, please contact to etec@etec.co.kr	

Radio Equipment Directive 2014/53/UE		
MCOM Labs, Inc. EU Notified Body Number: 2380		
EU Type Examination Certificate		
Certificate Number:	DTRCE-1A	Rev. A Date: 22 November 2017
Approver Holder's Name:	UNISEM	
Approved Holder's Address:	19 07, Jingnanghuo, Dongtan-miyao, Huaiyong-zi, Gyeonggi-do, Korea	
Product Name(s):	Unisnap	
Product Model(s):	S-100	
Brand Name(s):	-	
Product Manufacturer:	UNISEM	
Essential Requirement	Applicable Standards / Specifications	
Safety Requirements	EN 60950-1:2006+A11: 2009+A12: 2013+A12: 2011+A2: 2013	
EMC Requirements	EN 55014: 1997-1: 2013 EN 55035: 1998-1: 2013 EN 55032: 1997-2: 2014 EN 61000-3-3: 2013 EN 61000-3-12: 2014	
Radio Spectrum	Not Applicable	
RF Emission Requirements	Not Applicable	
The device shall be marked with the CE mark as shown in accordance with Articles 19 and 20 of the Radio Equipment Directive. (See Annex 2 of this document)		
Scope: This EU Type Examination Certificate is given in recognition of compliance of radio spectrum Article 3 Paragraph 2 of the RED Directive 2014/53/UE. The scope of the evaluation and the specific certificate only to those items identified as "Annex 1 of EU Type Examination Certificate" for the specific product and Certificate Number referenced above.		
EU Type Examination was performed according to Module B: EU type examination procedure per Annex in the Directive on the essential requirements in Article 3, for the specific product and Certificate Number referenced above.		
This EU Type Examination Certificate is based upon the review of the Technical Documentation and supporting evidence for the adequacy of the technical design solution. It is only valid in conjunction with the attached Annexes. The scope of this statement relates to a single sample of the apparatus identified above and of the submitted documents only.		
Signed by Gordon Hunt, President & CEO		

EU Declaration of conformity

Radio equipment information

Product name : *ideology*
Model name : S-300

Manufacturer information

Name : *UHQ514*
Address : *R. J. Enginment gti, Dongtan Engineering Inc, Gyeonggi-do, Korea (81018)*

We hereby declare that all essential safety and health issues have been carried out and that the above named product is in conformity with all the essential requirements of RED 2014/53/EU.

This declaration of conformity is based upon the sole responsibility of the manufacturer.
The object of the declaration described above is in conformity with RE Directive2014/53/EU.

The MCM3A USB (performed a conformity assessment of the technical documentation and issued the Eu-type examination certificate)

Essential requirements of RED 2014/53/EU	
	Standards
3.3(a) : EN 60950-1 : 2006 + A1 : 2009 + A2 : 2011 + A3 : 2013	
3.3(b) : EN 501 438-1 : 2011, EN 501 438-1 V3 : 2011	
3.3(c) : EN 501 438-2 : 2014, EN 501 438-2 V3 : 2015	
3.2 : EN 301 218 V2.3.1	

Description of accessories and components, Hardware version & Software version for operation

Hardware version : 1.1, Software version : 00012,
Accessory : N/A

Signed for and with behalf of:

Authorized Representative

Date of issue : 2009 October 17
Yong Kwon : *IDEON / HW Engineer*
TEL : +82-21 900-0259 / E-MAIL : ykwon@utmsen.co.kr



Model : S-300

1 / 1

발송통신기기자재등의 적합등록 필증 Registration of Broadcasting and Communication Equipment	
상호 또는 성명 (Trade Name or Engineer)	윤시범 (중)
기자재제명 (Equipment Name)	UniAngel
기번호 및명 (JISs Model Number)	S-100
과제번호 및명 (Case Number)	
등록번호 (Registration No.)	MSP-BREM-Case-0100
제조국명(제출국명) (Manufacturing Country of Origin)	대한민국 / 한국, 중국
등록신청일 (Date of Registration)	2017-03-04
기타 (Others)	

* 필 기재는 「필증법」 제6조(제) 제4항에 따라 등록필증임을 증명합니다.
 It is verified that foregoing equipment has been registered under the Clause 3, Article 58.2 of Radio Waves Act.

2017년 Year 04월(Month) 04일(Date)

국립전파연구원

 Director General of National Radio Research Agency

※ 필 기재는 「필증법」 제6조(제) 제4항에 따라 등록필증임을 증명합니다.
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