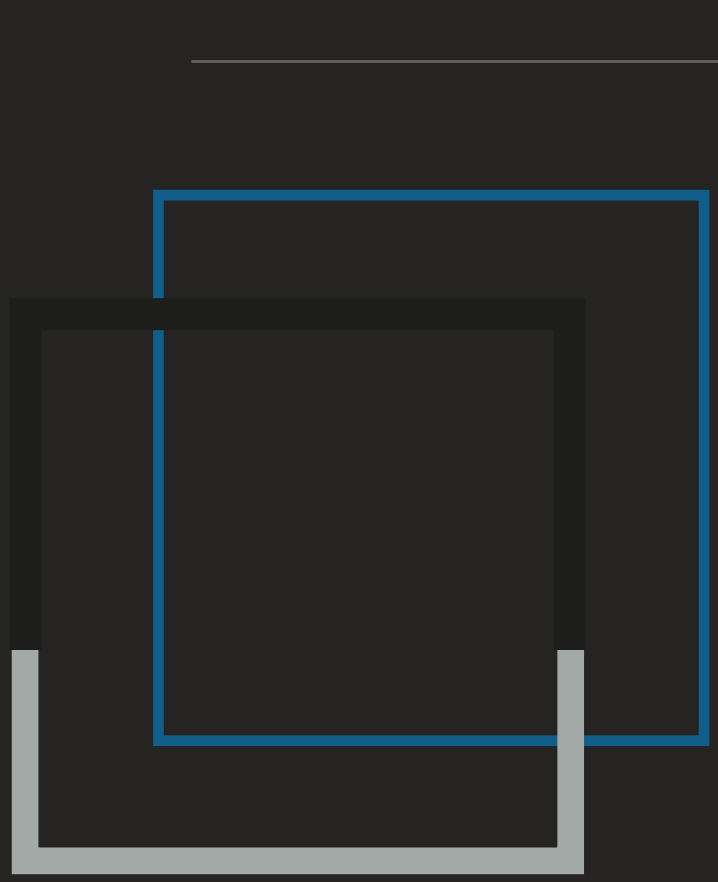


ConScan

Container ID Recognition System

Complete Mobility Provider.

INTEGRATED SYSTEMS & SYSTEMS DESIGN

Who are we?

Founded in 2009, ISSD provides solutions to create added value in the field of intelligent transport. Its areas of expertise include traffic management, electronic applications and consulting services. With the slogan 'Complete Mobility Provider', ISSD contributes to mobility from A to Z by working for a greener, more efficient and accessible transport future in more than 5000 locations in 15 countries.

ISSD is located in METU Teknokent, Türkiye's most prestigious technology development zone. The company stands out from its competitors with its product portfolio, technical expertise, R&D capabilities and long-term customer relationships. ISSD's young and talented team is committed to creating value and aims to become a global leader by delivering this value to the world.

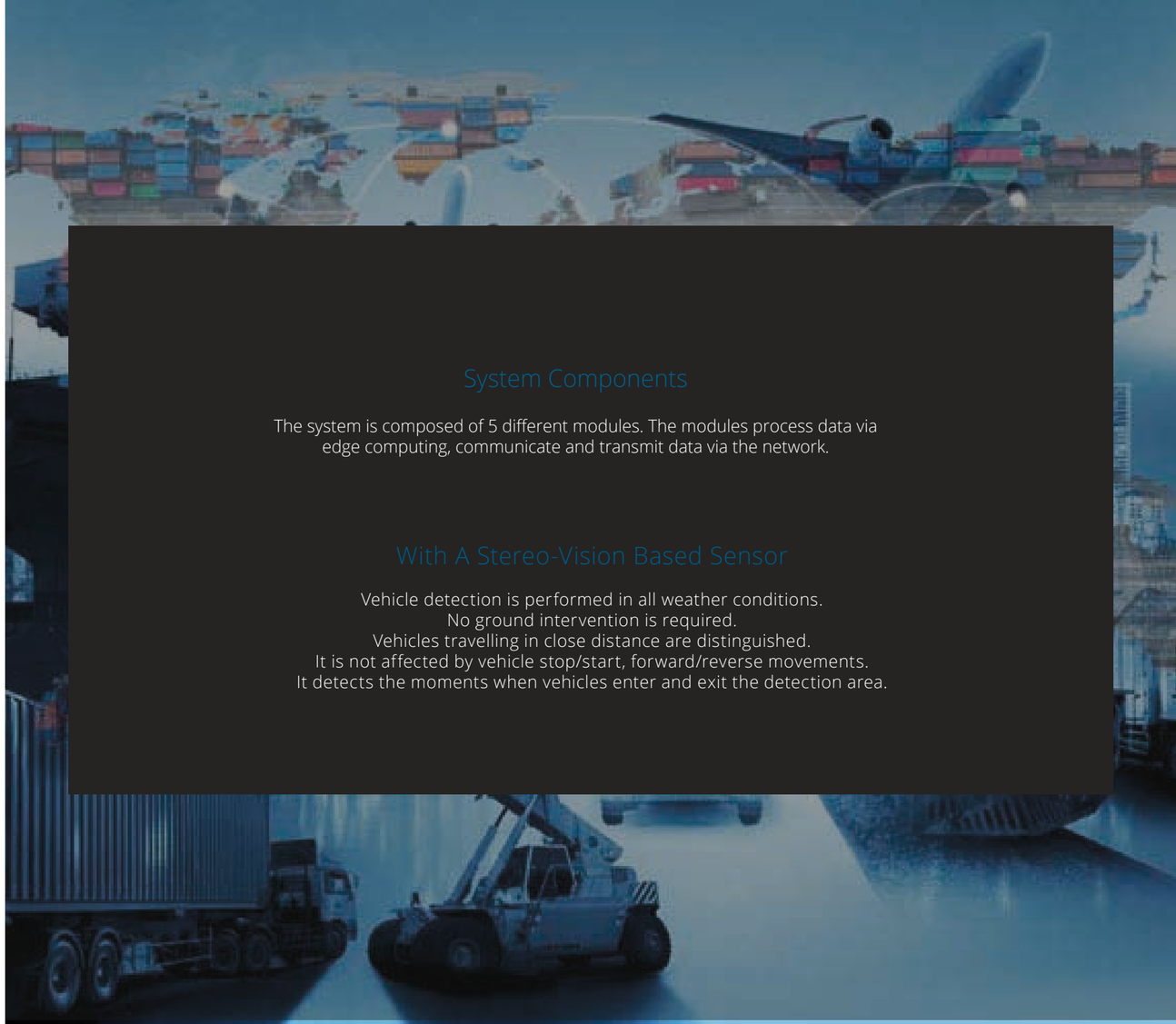
CONSCAN
Container ID Recognition System

ISSD's Container ID solution aims to facilitate and speed up terminal related works while reducing operating costs. This is achieved via automatic collection of container information at the entry and exit points, using image processing technology, and storage of collected data as high resolution images in its data center.

With ConScan Container ID solution the following data can be automatically stored:

- Container identification data
- Images of the right, left and rear sides of the containers
- Trailer and truck number plate images and information

All collected information is recorded in real time, and is accessible via the web-based interface.



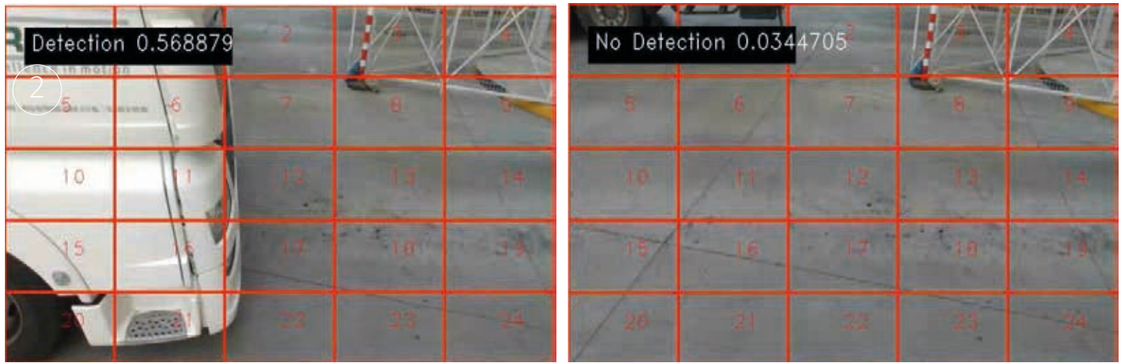
System Components

The system is composed of 5 different modules. The modules process data via edge computing, communicate and transmit data via the network.

With A Stereo-Vision Based Sensor

Vehicle detection is performed in all weather conditions.
No ground intervention is required.
Vehicles travelling in close distance are distinguished.
It is not affected by vehicle stop/start, forward/reverse movements.
It detects the moments when vehicles enter and exit the detection area.

Vehicle Detection Sensor
Container ID Recognition System



Vehicle Detection Sensor

Vehicle Detection System Specification

Vehicle Detection Rate	%99.9
False Detection Rate	%1
Sensor Type	Stereo Vision
Application Method	1.5m Tall Pole-Mount
Sensor Count	1

Container Identification and Number Plate Collection
Container ID Recognition System

The Container Recognition system is activated at every vehicle's entry and exit. It can collect container information using artificial intelligence algorithms utilizing the OpenVino framework.

The system can read and extract information of vertical and horizontal ID information, in addition to ID information that may exist on the upper, side and back sections of the container.

Container Identification and Number Plate Collection Specification

Container Detection Rate	%98
Container ID Reading Rate	%95
Detection of Horizontal and Vertical ID numbers	H: 1-4 Satır / V: 1-2 Satır
Container Identification Standard	ISO 6346
Camera Count	1
IR Led Unit	850nm
Camera Resolution	1920x1080
Data Format	1920x1080 image of the container, and container ID

Container Identification and Number Plate Collection
Container ID Recognition System

Container identification and license plate recognition

Container Section Image Acquisition Module
Container ID Recognition System

The container section image acquisition module is capable of collecting right, left and top side images of the container while passing through the gates.

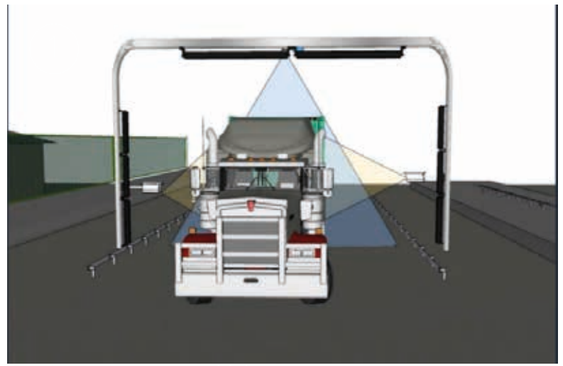
The module utilizes area scanning cameras and computer vision algorithms to take pictures of each of the three sides and combining them into a single image.

The system is capable of collecting these data regardless of the vehicle's motion.

Container Section Image Acquisition Specification

Container Maximum Speed For Detection	Up to 50 km/h
Detection of Horizontal and Vertical ID numbers	H: 1-4 Lines / D: 1-2 Lines
Container Standards	Dry Cargo Containers 20,40,45,48 and 53-feet Tank containers 20-feet
Camera Count	3 Cameras: 1xright 1xleft 1xtop
IR Led Unit	White Light Activated on vehicle approach
Camera Resolutions	1600x1200
Data Format	3 images JPEG format
Scanning Area Width	3 meters
Scanning Area Height	4 meters
Container-Camera Distance	3 meters

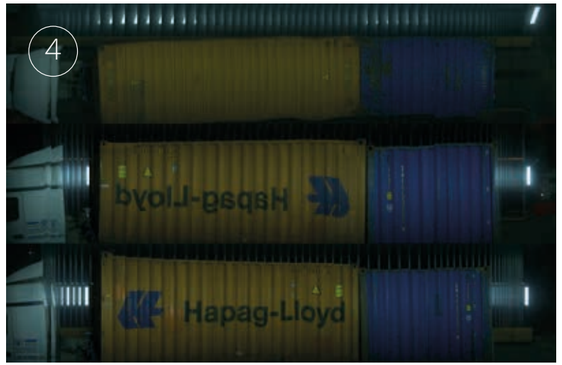
Container Section Image Acquisition Module
Container ID Recognition System



Container section camera module layout

Right side, left side and top section image of the detected containers

Right side, left side and top section image of the detected containers



Right side, left side and top image of the detected containers

CONSCAN

Number Plate Recognition System

The number plate recognition system consists of two camera towers, those being:

- The front camera to collect the frontal license plate information
- The rear camera to collect the rear license plate information

The system utilizes OpenVino based framework in its operation.

Number Plate Recognition System Specification

Plate Recognition Rate	%98
Recognizable Number Plate Countries	50+
Camera Count	1x Front 1xRear (2 Cameras)
Detection Distance	5 meters
IR Led Unitt	850nm
Camera Resolutions	1920x1080
Data Format	1980x1080 images of the frontal and rear number plate, number plate information

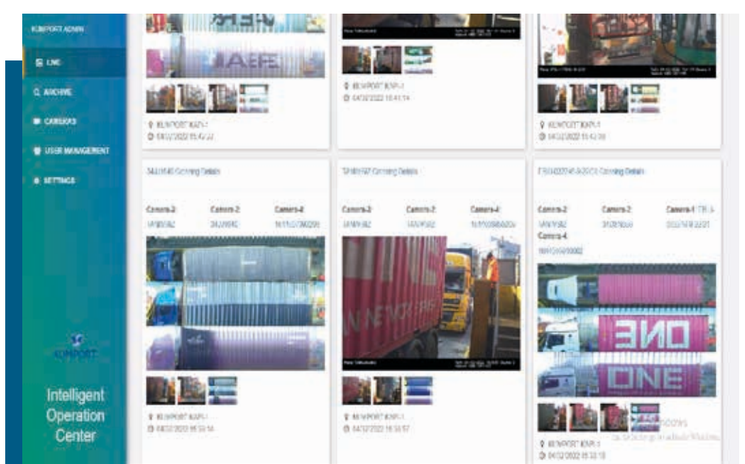
Number Plate Recognition System

CONSCAN CENTRAL SOFTWARE

Collected data is transmitted to the web-based central software in real-time. The central software allows accessibility through web browsers.

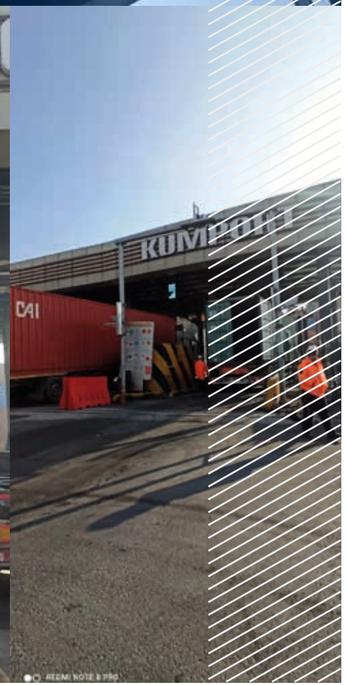
The central software's interface allows real-time data monitoring, and filtering using vehicles' time of passing, license plate, location, and container ID.

Data can be transmitted from the central software to other parts of the network over different protocols.



CENTRAL SOFTWARE
ConScan Container ID Recognition System

- Operation Mode Stream, Archive, Settings
- 3 Levels of Authorization
- Windows Server 2016 Serves OS
- Web-Based SQL Data Type



SYSTEM CAPABILITIES

Container ID Recognition System

- Non-intrusive installation
- High resolution image provision of the right, left and back sides of containers
- Portable hardware
- Detection of horizontal and vertical id information
- Stop free monitoring
- Automatic data transmission to the central software
- Reduced operation costs
- Storage of all collected data via the software

ISSD A.Ş.
Complete Mobility Provider

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