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Fostering Innovation with 4IND

AI Video Analysis Solution Provider



COMPANY BROCHURE

| 4IND Co., Ltd



LEADING THE WORLD'S IT BUSINESS

4IND is a solution provider founded by experts to become a leading company in the 4th industry (an industry that makes factories and products intelligent through software).

AI Video Surveillance

Our deep learning-based intelligent control solutions guarantee smarter safety and security.

AI Video Inspection

Our compact, integrated deep learning-based inspection module solves vision inspection problems.

COMPANY OVERVIEW

Company name	4IND Co., Ltd.
Incorporated	2017. 02. 02
Industry (products)	Software and hardware development (smart city application software)
Head Office	Room 320, Mobile Convergence Technology Center, 350-27 Gumi-daero, Gumi-si, Gyeongsangbuk-do
R&D Center	Room 316, Mobile Convergence Technology Center, 350-27 Gumi-daero, Gumi-si, Gyeongsangbuk-do
Factory	Room 409, GERI National Industrial Support Center, 17, Cheomdangieop1-ro, Sandong-eup, Gumi-si, Gyeongsangbuk-do, Republic of Korea
Contact	054-456-3401
Website	http://www.4ind.co.kr





LEADING THE WORLD'S IT BUSINESS

4IND leads innovations in the AI industry

Our goal is to provide customers with new experiences through continuous research and development and to help your business grow.

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- BOM PLATFORM
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COMPANY INFORMATION

History and Organizational Chart

2017

- 02 • 4IND incorporated
- 04 • Behavior recognition-based AIM (AI Marketer) SaaS developed: NIPA
- 06 • Selected to support startup package for video processing based marketing solutions: Establishment of s GERI dedicated research department
- 11 • AI Marketer, which applied for a patent for artificial intelligence based behavior recognition, was certified as a cloud service
- 12 • AI Marketer trademark applied and software registered

2018

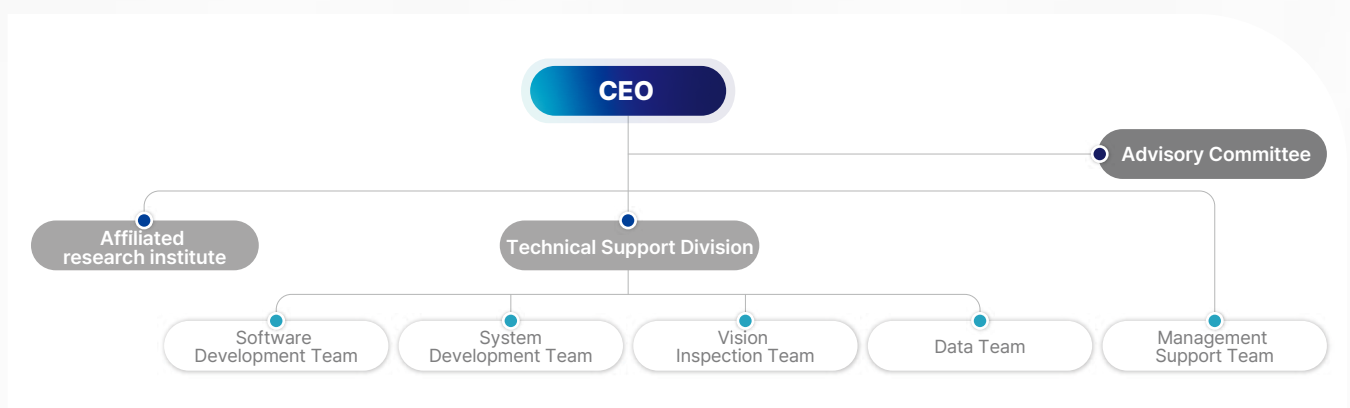
- 04 • Selected as a regional software convergence project support project: NIPA
- 06 • Startup growth technology development project (selected as an innovative R&D task): Patent application AI-based automatic detection of fire/arson by the Ministry of SMEs and Startups
- 07 • Selected as a global-level R&D technology development project for Gyeongbuk Software Convergence Cluster: Pohang TP
- 09 • Participated in ICT Convergence Expo Exhibition: EXCO
- 10 • Participated in the Global Security Asia in Singapore
 - Patent application for behavior detection system and method using deep learning from video input from camera
 - BOM AI software registered as an asset
 - Confirmed as a venture company: Korea Technology Finance Corporation
- 11 • Participated in the 2018 China Hi-Tech Fair in Shenzhen, China
- 12 • Patent application for fast artificial intelligence image generation method using meta-learned generative adversarial network
 - Machine vision monitoring solution for smart factories registered as a software asset
 - ICT/Software Excellent Company Award from Gyeongsangbuk-do

2021

- 02 • Management of people entering unmanned stores, joint research with ETRI (facial recognition, door opening and closing, etc.) Solution (BOM-Entrance) service started
- 04 • Tracking based on object identification based on artificial intelligence analysis (multiple cameras, re-recognition) Solution development and demonstration (NIPA, Daegu Suseong Alpha City)
- 05 • Intelligent identification and tracking demonstration supplied to Korea Expressway Corporation
- 10 • WSCE (Smart City) Excellent Company Award under the tech & solution category
- 12 • Received Daegu-Gyeongbuk Startup Excellence Award (Daegu-Gyeongbuk Small and Medium Business Administration Director Award)

2022

- 01 • Joint research with ETRI
- 02 • Worksite worker safety control solution (BOM-Safety) service started
- 04 • Registered as AI solution service (fire/smoke detection, etc.) business partner for NTT DOCOMO Selected as an AI voucher supplier (NIPA)
- 06 • Selected as a contractor to develop a digital elevator integrated control platform by Korea Elevator Safety Agency
- 10 • GS certification level 1
 - Traffic flow analysis and violation detection system exported to Indonesia
 - Attracted investment from ETRI
- 11 • Won the contract to develop an intelligent air-to-surface gunnery analysis model from the Air Force Headquarters
- 12 • Received the Gumi Mayor's Startup Venture Excellence Award from the Gyeongbuk Creative Economy Innovation Center



2019

- 02** • Office expansion
- 03** • Participated in information and communications and broadcasting research and development and standard development support projects to develop BOM Traffic, a traffic analysis solution, in 2019.
- 06** • Corporate affiliated research institute (AI Lab)
- 12** • Excellent Company Award in the Gyeongbuk ICT/software field at the Gyeongbuk Startup Innovation Awards

2020

- 02** • Selected as one of the 14th G-STAR Dreamers by Gyeongbuk Creative Economy Innovation Center
- 03** • Registered as an information and communication construction business
- 04** • Selected for the artificial intelligence identification and tracking (facial recognition, abnormal behavior) system demonstration and development project (Ministry of Justice, NIPA, Incheon Airport)
- 06** • Intelligent CCTV certification (only company in Gyeongsangbuk-do)
- 07** • ISO9001 certified
- 08** • Innobiz certified
- 09** • Certified as a leading learning-centered field training company. Selected as a 2020 Gyeongsangbuk-do 4th Industrial Revolution core technology development project
- 11** • Selected as a company allowed for special cases on military service (skilled industrial personnel)

2023

- 03** • Selected as a research institute company (Innopolis Foundation)
- 04** • Selected as a strong domestic company for export vouchers
 - Selected as one of the top 100 companies in materials, parts, and equipment
- 05** • Selected as a small hidden champion by the Ministry of Employment and Labor. Selected as an excellent company by the Ministry of Science and ICT's ICT Fund Project
- 09** • KC Agency (National Radio Research Agency)
- 10** • New factory registered
 - Room 409, Domestic Production Support Center, 17, Cheomdangieop1-ro, Sandong-eup, Gumi-si, Gyeongsangbuk-do, Republic of Korea
- Selected as a TIPS (tech incubator program for startup) project
- Value chain R&BD project selected as a national project
- 11** • 4 overseas MOUs signed

2024

- 01** • Signed an overseas agency agreement with Indonesia
 - Selected as an ETRI project
- 02** • Gumi Special Zone Special Zone Innovative Company Award
- 03** • Selected for Korea Railroad Corporation's CCTV-based intelligent train surveillance system development project



COMPANY INFORMATION

Objective technology verification

Implement customized services suitable for customers' business environments

We provide the best solutions with customized systems for diverse needs.

✓ Superior recognition rate

BOM PLATFORM

*KISA Intelligent CCTV certified, International KOLAS test report-based

 Facial recognition (1:1) 99.78%	 Facial recognition (1:N) 96.4%	 Behavior recognition (detecting 2 people) 99.8%	 Behavior recognition (rushing) 99.8%
 Behavioral recognition (unattended objects) 82%	 Behavioral recognition (falling) 90%	 Behavioral recognition (intrusion) 98%	 Behavioral recognition (roaming) 100%
 Behavioral recognition (reverse driving) 99.8%	 Behavioral recognition (counting people) 96.5%	 Fire 95%	 Smoke 90%

BOM INSPECTION

*International KOLAS test report-based

Steel plate surface defect recognition 97.7%	Steel plate defect type recognition 98%	Steel plate coil replacement time recognition 98%	Steel plate welding defect recognition 97.8%
LED module defect recognition 99.3%	PCB parts defect recognition 100%	Semi-supervised learning defect recognition 99%	

✓ We have many intelligent technologies

* International KOLAS test report, Korea Internet & Security Agency intelligent certification, and many more



Research institute company registration certificate



BOM EDGE BASIC Conformity registration certificate



Certificate of recognition for corporate research institute



100 materials, parts and devices startup business



Intelligent CCTV certification



Patent certificate



Trademark registration certificate



Innobiz certification



MAINBiz certification



ISO 9001 certification



GS 1 certification

BUSINESS AREA

BOM ENTRANCE

Facial recognition
access control
solution

BOM SAFETY

Surveillance solutions
for Smart city

BOM PLATFORM

AI-based video
analysis integrated
control platform

SMART CITY

4IND BUSINESS AREA

SMART CITY

Through our AI-based video analysis technology, we provide solutions that form the core of smart cities, including urban security, traffic control, and access management for unmanned stores.

- Create a specialized 4IND DNA (data, network, and AI) to develop solutions and services needed for smart cities
- Create a data collection system using 5G, CCTVs, drones, robots, etc.
- Collect data from overseas partners
- Acquire data accumulation, processing/combining capabilities
- Utilize data and create AI innovation services
- 4IND is the first company to benefit from Korea's public data provision system (Ministry of Justice, National Police Agency, etc.)

BOM TRAFFIC

Traffic law violation detection & traffic analysis solution

BOM INSPECTION

AI-based defect inspection solution

BOM MOM

Integrated manufacturing and operations management solution

SMART
FACTORY

4IND
포인드(주)
BUSINESS
AREA

SMART FACTORY

The unstructured image interpretation and high detection accuracy, thanks to our AI based machine vision technology, provide solutions that dramatically improve productivity in smart factories.

- Utilize various technologies such as machine vision algorithms to create an optimal deep learning model
- Provides optimal analysis and predictive maintenance features through 4IND's proprietary deep learning model and GPU computing technology.
- Provides continuous performance improvement through inspection result reporting and result analysis

LEADING THE WORLD'S IT BUSINESS

PRODUCTS AND SERVICES

4IND deploys new technologies for a competitive edge in technology to develop the best solutions to provide creative and innovative products and services.



The background of the image is a dark blue, futuristic city skyline at night. A bright, glowing light source is positioned in the upper left, casting a long, horizontal beam of light across the center. A probe or telescope-like device is visible in the upper right, emitting a beam of light that converges towards the center. The city skyline at the bottom features various skyscrapers, including a prominent one with a spire. The overall atmosphere is high-tech and visionary.

We are pioneering the **age of smart technology** with artificial intelligence

Intelligent integrated control solution

BOM PLATFORM

Be Smart, Be Safe with our 3rd Generation Solutions

BOM Platform is a next-generation intelligent CCTV control solution that detects objects and analyzes events based on artificial intelligence, enabling more accurate and faster video analysis.

INTEGRATION PLATFORM

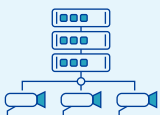
Web-based integration dashboard,
Supports various AI-based video surveillance such as traffic analysis, access control, etc.

- ✓ Up to 32 channels monitoring, selective video surveillance
- ✓ Real-time event notifications (Web, SMS, Messenger, etc.)
- ✓ Integrate with existing CCTV, NVR, VMS
- ✓ Setting detection events for per CCTV

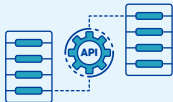


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PRODUCT DIFFERENTIATION



Thanks to the integrated platform,
Manage all CCTVs from the same location



Provide customized services, thanks to the general-purpose APIs, allowing integration with third-party solutions and data sharing



Activate only the necessary features for each camera **For reasonable cost and system operating cost reduction**



Thanks to the cloud computing technology, people can **Conveniently use our solutions in diverse environments, including PCs, mobile phones, and tablets**

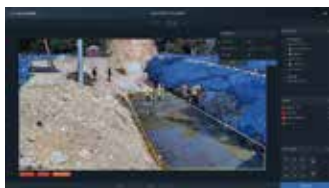
REFERENCE



Indonesian National Police
Enforcement of traffic violations



Korea Elevator Safety Agency
Elevator CCTV safety control



Hanlim Technology
Construction site safety control



Inex
Facial recognition-based access control

BOM PLATFORM

Hardware

GPU Rack Server

GPU Edge Device

NPU Edge Devive

Cloud

Video Data



NVR



CCTV



Web Cam



Drone

Select Detection Events

Safety area

Fire/smoke detection

Detecting illegal garbage disposal

Fall detection

Violence/fight detection

Detecting people who don't wear safety helmets

...

Security area

Facial recognition (1:N)

ID validation

Access control

Restricted area intrusion detection

Identification and movement tracking

...

Transportation & automotive areas

Traffic analysis

License plate recognition

Speed violation detection

Parking violation detection

Detecting people who don't wear safety helmets

...

Customized for clients

Counting pedestrians

In-store behavior analysis

Turning on warning lights in

Detecting people near heavy equipment

Parking space control

...

Elevator safety control CCTV

Traffic violation enforcement CCTV

Construction site safety control CCTV

Nursing home hazard control CCTV

Unmanned store access control CCTV

“

Select the detection events you want for each CCTV
To configure your own intelligent CCTV package.

”

AI-based vision inspection solution

BOM INSPECTION

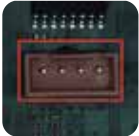
A vision quality management platform that allows users to control manufacturing process quality from remote locations thanks to intelligent vision and integrated control technology

BOM Inspection is an AI-based vision inspection solution that inspects external defects in manufactured and produced products. It provides exceptionally superior detection accuracy compared to other rule-based vision inspection methods, and thanks to semi automatic learning, it can be applied to manufacturing sites quickly and rapidly on multiple items and derived models to ensure stabilization of quality. In addition, it provides innovation in quality management based on refined data and statistics through advanced cloud-based manufacturing operation management (MOM) rather than a simple vision inspection method.

MAIN FEATURES

Vision Inspection	Use Data Management Software	Self-learning	Integrated Control
- Real-time product inspection - Defect history management - Integrating PLC, MES, and ERP - Event alerts	- Automatic labeling - Data analysis - Data collection - Data transfer	- Data augmentation - Setting learning options - Building learning datasets - Remote model updating	- Remote site control - Production statistics monitoring - Monitoring server usage - Customizable dashboard

DETECTED DEFECTS

Surface Defect Inspection	PCB Inspection	Micro Defect Inspection	Measurement	Injection product inspection
 Black dot / white dot	 Wrong component	 Crack	 Dimension Measurement	 Deformation
 Scratch	 Missing component	 Bonding Wire Defect	 Angle Measurement	 Crack
 unpainted	 Reverse component	 Foreign matter	 Position Measurement	 Missing component

WHAT MAKES OUR PRODUCTS DIFFERENT

				
Integrated control Monitor and manage multiple production lines in one place	Integrated dashboard Monitoring production information by process	Integrated data management Integrated management of defect data by process	AI vision inspection technology Able to inspect diverse products and defects	AI model learning feature Reduce maintenance costs with AI model training and remote updates

Integrated manufacturing process and QUALITY MANAGEMENT PLATFORM

The best partner for IT business success, 4IND

APPLICABLE INDUSTRIES



Electronic products



Steel



Semiconductor

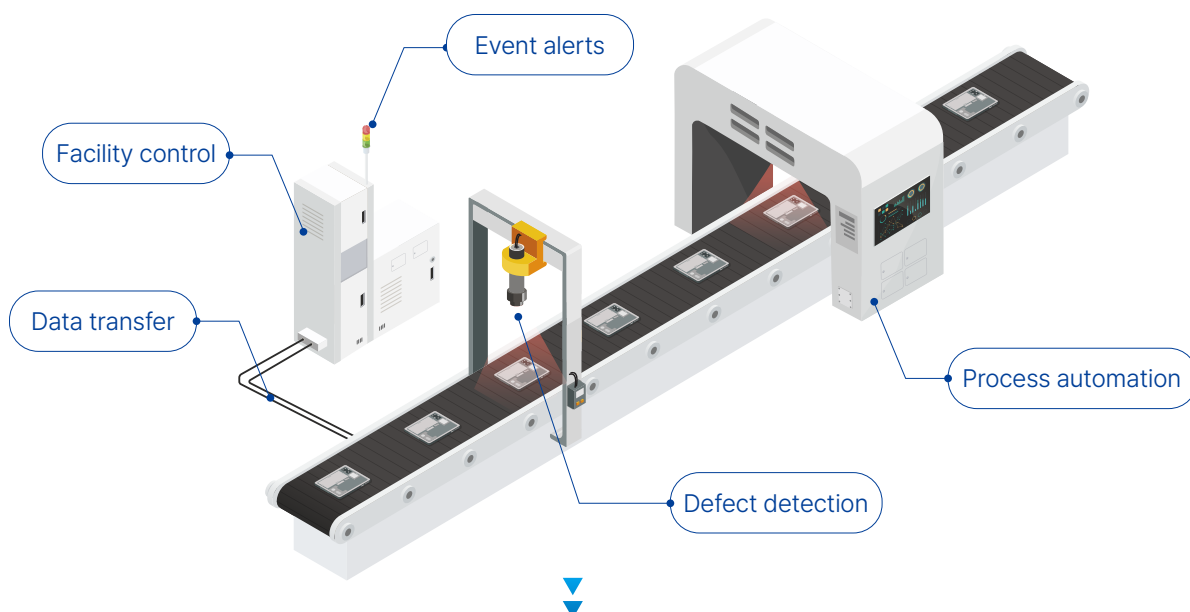


Secondary battery



Automotive parts

- Build a Manufacturing process measurement analysis system



BOM INSPECTION NETWORKING

High-resolution video
transmission

Wired/
wireless network access

Efficient utilization
of bandwidth

Remote process control

- Create an integrated quality control room for the manufacturing process



A variety of hardware to meet customer needs

HARDWARE SPEC

With a variety of hardware, including NPU-based edge devices and GPU-based workstations and servers, we can propose hardware suitable for customers’ purposes for use and required volume.

BOM KIOSK FD & FDS



▲ BOM KIOSK FD

NPU-based Edge Device for face recognition
This device is perfect for small units such as unmanned stores, access control, and offices. The FDS is equipped with a scanner to validate ID cards.

- Customers can choose between wall-mounted and stands available (optional)
- ID recognition scanner installation (optional)

Number of supported channels

1ch

NPU computation

6Tops

Touch display

10.1 Inch



BOM KIOSK FDS ►

BOM EDGE PREMIUM



NPU-based Edge Device for high-performance AI computation
It is a high-spec device designed for multi-purpose use in hospitals, nursing homes, elevators, and multi-channel CCTVs.

- Add an NPU accelerator (optional)

Number of supported channels

4ch

NPU computation

6Tops or higher

Touch display

13.3 Inch

Product name	BOM KIOSK FD	BOM KIOSK FDS	BOM Edge Premium
Number of supported channels	1ch	1ch	4ch
Computation types	NPU	NPU	NPU
Screen size	10.1 inches	10.1 inches	13.3 inches
CPU	Rockchip RK3588	Rockchip RK3588	Rockchip RK3588
GPU	-	-	-
RAM	16GB	16GB	16GB
Storage devices	eMMC 256GB	eMMC 256GB	SSD 512GB
Specialized features	Facial recognition	Facial recognition, ID check	Indoor safety control
Installation types	Wall mounted, stand	Wall mounted, stand	Wall mounted



BOM EDGE MINI

Versatile, lightweight NPU-based Edge Device for small spaces with a small number of available CCTVs.

Number of supported channels

1ch

RAM

8GB

eMMC

32GB



BOM EDGE BASIC

Versatile NPU-based Edge Device
This lightweight device can support multi-channel CCTVs.

Number of supported channels

2ch

RAM

16GB

eMMC

256GB



GPU WORKSTATION

Versatile desk using up to 3 GPUs
Suitable for general sites, such as integrating multi channel CCTVs and NVR.

Number of supported channels

25ch or higher



GPU RACK SERVER

Integrating high-specification GPU servers for medium- and large-scale deployment is possible.
This server is suitable for integrated control of dozens of CCTVs.

Number of supported channels

50ch or higher

BOM Edge Mini	BOM Edge Basic	GPU Workstation	GPU Rack server
1ch	2ch	25ch or higher	50ch or higher
NPU	NPU	GPU	GPU
-	-	-	-
Rockchip RK3588S	Rockchip RK3588	Intel® Core i7 or higher	Intel® Xeon® Silver or higher
-	-	NVIDIA Geforce RTX3090*2way	NVIDIA Quadro A5000*4way
8GB	16GB	32GB or higher	64GB or higher
eMMC 32GB	eMMC 256GB	-	-
-	-	-	-
General installation	General installation	General installation	Rack mounted

GLOBAL NETWORK

With a product portfolio that meets global standards, customer diversification, and business expansion,

We will take the next gigantic step to become a sustainable enterprise



Japan



Japan

Vietnam



Vietnam

Malaysia



Malaysia



Singapore



Singapore



Indonesia



Indonesia